

**An exploration of the attitudes and risk taking behaviours
amongst young people who are regular users of sunbeds and
the development of a prevention strategy.**

**Thesis submitted in accordance with the requirements of the University of
Liverpool for the degree of Doctor in Philosophy**

Paul Mackenzie

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Abstract

Background

The year on year increase in the incidence of malignant melanoma skin cancer is a global health problem. In 2009 the International Agency on Research on Cancer raised exposure to artificial UV to the highest category, “carcinogenic to humans”. Surveys in England in 2006-10 indicated that young people were using sunbeds regularly, with the North West, especially Merseyside, having some of the highest rates. There has however, been little research conducted that attempts to understand the attitudes and motivations of young sunbed users. Inadequate regulation coupled with their desire to use sunbeds has meant that young people have been using sunbeds hazardously. In 2010 the English government introduced legislation to ban under-18 sunbed use.

Aims

The study aimed to explore the attitudes, motivations and experiences of young people aged 14 to 16 years living in Merseyside, in relation to sunbed use in the context of the imminent legislation. The study also aimed to use the findings to promote the development of an evidence-based local skin cancer prevention strategy for Liverpool, in an attempt to begin to tackle hazardous sunbed use by young people in the locality.

Methods

Qualitative research was conducted in five schools in the North West of England between September 2009 and March 2010, prior to the implementation of the sunbed legislation banning under-18 year olds using them. Girls and boys aged between 14-16 years were recruited to the study. Eight focus groups were conducted, involving a mixture of sunbed users and non-users, sunbed users only, boys and girl only focus group and separate year groups. Twenty-two in-depth one-to-one interviews were also conducted. An interpretive approach was taken to the analysis of the qualitative data, drawing on the approach taken by

Edwards and Tichen (2003). For the development of the skin cancer prevention strategy, a stakeholder workshop was organised in March 2013, bringing together approximately sixty key stakeholders from a variety of organisations in Liverpool and including representatives from the public, public health, primary care and voluntary sectors and the local authority. Findings from the qualitative research with young people were fed into the strategy development, with the author also acting as facilitator and coordinator.

Findings

Key motivations for sunbed use among these young people in Merseyside were to improve self-esteem and confidence and to conform to social norms and peer-expectation. Mothers and older siblings were reported to influence sunbed initiation or continued use. Poor salon practice emerged as a risk to over-exposure to UV rays. Young people were quick to play down the risks associated with sunbed use; however some young people also reported being addicted to sunbeds. Young people feared the introduction of the legislation banning sunbed use because some had become dependent on using sunbeds as a way of expressing their identity, to socialise and as a strategy to improve their self-esteem and confidence. The study demonstrated how the qualitative findings could be used to influence the development of national and local health policy. Following the developmental process, the strategy was endorsed and supported by the Mayor of Liverpool, the head of policy at Cancer Research UK and the head of policy at the Chartered Institute of Environmental Health.

Conclusions

Whilst some young people reported the physical and psycho-social benefits of sunbed use, young sunbed users were also exposed to increased risks associated with artificial UV damage. Poor salon practice, inadequate regulation and policy and continued pressure to conform to social ideals left sunbed users vulnerable to the effects of UV damage. Moreover, the research also highlighted the need for health providers to develop psychological support pathways for

young people who may be addicted to sunbeds. Prevention initiatives should take into consideration young people's ideals concerning appearance when aiming to reduce or prevent sunbed use among young people.

Declaration

The written work contained within, is my own work. This thesis has not been presented for any other degree or qualification.

Acknowledgements

This PhD thesis is dedicated to my family, Tracie, Lauren, Danielle, Josh, Millie, Mack and Zannah. Thank you to my mum for always believing in me. They are the source of my greatest happiness.

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Finally I would like to extend my thanks to the staff at the schools who participated in the research, and the young people who gave up their time to participate in the focus groups and one to one interviews.

List of Abbreviations

ASAM	American Society of Addictive Medicine
APPGC	The All Party Parliamentary Group on Cancer
25(OH)D	25 Hydroxyvitamin D
BCC	Basal Cell Carcinoma
BPG	British Photodermatology Group
CAMHS	Child and Adolescent Mental Health Service
CCG	Clinical Commissioning Group
CD	Computer Disc
CIEH	Chartered Institute Environmental Health
COMARE	(Committee on Medical Aspects of Radiation in the Environment)
CRQ	Central Research Question,
CRUK	Cancer Research United Kingdom
DH	Department of Health
DNA	Deoxyribonucleic acid
FG	Focus Group
GP	General Practitioner
HAM	Health Action Model
HBM	The Health Belief Model
HPV	Human Papilloma Virus
HSE	Health and Safety Executive
HSWA	Health and Safety at Work Act
HWB	Health and Wellbeing Board
IARC	The International Agency Research Working Group on Cancer
ICNIRP	International Commission on Non-Ionizing Radiation Protection
ID	Identification
IEC	International Electro-technical Commission
ISD	Information Services Division
JSNA	Joint Strategic Needs Assessment
kJm ²	kilojoule/square meter
LCC	Liverpool City Council

LCH	Liverpool Community Health
MHSWR	Management of Health and Safety at Work Regulations
MCCN	Merseyside and Cheshire Cancer Network
MPs	Members of Parliament
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
Nm	Nanometre
OFSTED	Office for Standards in Education
ONS	Office of National Statistics
OR	Odds Ratio
PHE	Public Health England
PHSE	Personal Health and Social Education
SAD	seasonal affective disorder
SHA	Strategic Health Authority
SCC	Squamous Cell Carcinoma
TPB	Theory of Planned Behaviour
TQ	Theory Question
TRA	Theory of Reasoned Action
TSA	The Sunbed Association
UV	Ultraviolet
UVA	Ultraviolet A (Long wave)
UVB	Ultraviolet B (Medium wave)
UVR	Ultraviolet Rays
W/m ²	Watts per Square Meter
WHO	World Health Organisation

Chapter 1. Introduction

1.1. The public health issues

Increasing incidence and prevalence of skin cancer across industrialised countries and within Europe and America has become a major health problem (Hall et al., 1999; Westerdahl et al., 2000; Diffey, 2003; Lens and Dawes, 2004; Schnieder and Kramer, 2010). The most significant contributing factor for the development of malignant melanoma skin cancer is over-exposure to ultraviolet rays (UV). In 1992 Solar UV was recognised internationally as being carcinogenic to humans by the International Agency for Research on Cancer (IARC, 1992). However, until the last decade there has been conflicting evidence about the association between artificial UV light generated from sun beds and sun lamps and the development of skin cancer (Elwood et al., 1986; Holly et al., 1987; 1995; Zanetti et al., 1988; Bataille et al., 2004). In 2009 scientific researchers from IARC raised the risk category for artificial UV to the highest category one, “carcinogenic to humans”.

Of particular concern, with growing evidence, is that some young people are placing themselves at increased risk of developing malignant melanoma skin cancer because they are exposing themselves to excessive amounts of UV rays. A specific concern in the North of England was that in Liverpool and Sunderland prevalence of sunbed use was significantly higher than other cities in a six city study (Thompson et al., 2010). Growing evidence of young people’s use of artificial UV devices and reported poor regulation and information surrounding sunbed practices may leave young people particularly vulnerable to the risk of developing malignant melanoma in the future. This is likely to have an impact on health services and overall increases in skin cancer mortality.

There have been several studies that have highlighted young people’s exposure to artificial UV, but these studies have mainly focussed on frequency of use or risk factors (Westerdahl et al., 1994; Boldemann et al., 1997; 2001; Brandberg

et al., 1998). Few studies have explored why young people use sunbeds. To begin to tackle this risk taking behaviour, we need deeper understanding of the motivations and attitudes that lead young people to initiate and continue to use sunbeds. This in turn might help us to design more effective intervention strategies to reduce or prevent sunbed use among young people. Research on sunbed behaviour could be considered a legitimate area of health concern because increasing numbers of people are being diagnosed and treated each year and yet reduced exposure to UV makes skin cancer largely preventable. Little is known as yet about the cumulative effect of artificial UV, and some young people have been reported to be using sunbeds frequently, some daily. The Sunbeds (Regulation) Act 2010 came into force on 8 April 2011. The principal purpose of the Act is to seek to prevent persons aged under-18 from using sunbeds. Businesses which offer sunbeds for use on their premises are banned from allowing persons aged under-18 to use or have access to their sunbeds and from offering their sunbeds for use by persons aged under-18. The Act includes regulation-making powers which would allow the further regulation of sunbed use and imposes on Local Authorities enforcement responsibilities. However, the act does not cover home sunbed use. Despite increased awareness amongst the health sector and the public, the sunbed tanning industry continues to promote sunbed use as a healthy behaviour. Inadequate regulations and monitoring have meant that young sunbed users will still access sunbed salons and poor practice, poor advice and limited information on screening will result in young people still being exposed to harmful artificial UV.

1.2. Aims and objectives of the thesis

This thesis presents a study which aimed to understand the motivations and attitudes that influence young people to use sunbeds. Understanding what it is like for young people to use sunbeds is important and the research reported here attempted to probe for deeper understanding about what it is like for a young person using sunbeds regularly.

Aims

The aims of the research were to explore the attitudes, motivations and experiences of young people aged 14 to 16 years living in Merseyside, in relation to sunbed use in the context of the imminent legislation. The study also aimed to use the findings to promote the development of an evidence-based local skin cancer prevention strategy for Liverpool, in an attempt to begin to tackle hazardous sunbed use by young people in the locality.

Objectives

The research objectives were:

1. To carry out a literature review of UVA exposure, sunbed use and consequences for young people and adults.
2. To explore young people's experiences and motivations for using sunbeds.
3. To understand young people's perceptions of their own health as a consequence of using sunbeds.
4. To explore how sunbeds make young people feel about their self-image and how they think others perceive them.
5. To support the development of a prevention strategy informed by the evidence from the qualitative studies.

Objective 1 was met by the conduct of a literature review, employing the methods and protocols outlined in the following chapter.

Objectives 2, 3, and 4 were met by qualitative research with young people aged 14 to 16 in schools in the North West of England. A total of 8 focus groups were carried out, together with 22 face-to-face interviews, and field diaries.

Objective 5 was met by interactive engagement with a range of stakeholders to support the development of an appropriate prevention strategy.

Below I begin with a brief overview of the historical development of tanning and the emergence of artificial UV as a way of obtaining a tanned appearance.

1.3. A brief introduction to the history of tanning and sunbed use

Having a tanned look has been a key factor in determining why people use sunbeds and the views and attitudes about appearance related ideals have changed throughout history and within different cultures. The industrial revolution between the 18th and 19th century symbolised a change in both the economic sectors of life and in social class construction. During the agricultural revolution the most valued resource was in farming and this was very labour intensive. At this time both men and women were involved in heavy manual labour. The development of new farming techniques and the introduction of heavy machinery during the industrial revolution placed less reliance upon manual labourers. As cottage industries developed, women's roles changed in order to meet the demands for new clothing, cloth and manufactured goods. For some women there were good job opportunities in industry, but others were less fortunate and lived a life of poverty. As cities began to grow, populations moved from the rural areas to the cities seeking new opportunities. In the late 18th century the economic movement also shifted towards the cities, where wealthy landowners were able to capitalise on selling and renting areas of land in industrial heartlands.

Agricultural workers spent longer hours out of doors exposed to the sun. Economic opportunities in emerging urbanised areas and greater job prospects meant that having a tan became a symbol of working on the land, which was associated with poverty and low socio-economic status, (Arthey and Clarke, 1995). By the end of the nineteenth century, having a lighter skin was still considered a sign of status and beauty. By the 1920s and 1930s, however,

there had been a complete turn-around: a tan had become fashionable and in 1928 fashion magazines such as Vogue and Harper's Bazaar were promoting the tanned appearance as a sign of wealth. This reversal of attitude towards having a tanned skin has been attributed to two major factors. First, the changing status and enhanced rights of women brought about through the suffragette movement (among other influences) was a catalyst for greater freedom for women to participate in work and physical activities outside the home – leading to greater exposure to the sun. Second, travelling abroad became easier and fashionable, but was restricted to those rich enough to afford it. Images depicting women bathing and travelling emphasised the lavish lifestyle and free time that the wealthy had to explore exotic pursuits (Martin et al., 2009). Thus, there was a paradigm shift amongst the public, in which a tanned skin became a sign of wealth and healthiness.

In 1946 the two-piece swim suit was introduced by the French designer Louis Reard at the Piscine Molitor, which was a very popular swimming pool in Paris. Micheline Bernardini a Parisian showgirl modelled the new swim suit. Reard named the swim suit the "bikini" in response to a United States atomic test that took place off the Bikini Atoll in the Pacific Ocean earlier that week. At this time Parisian fashion was influencing the rich and famous in Europe and the US, with more liberal clothing and skin exposure. This in turn may have romanticised the tanned appearance.

The first tanning bed had very little to do with getting the perfect tan. The world's first artificial UV lamp was made by a German company called Heraeus which was run by two brothers Heinrich and Wilhelm Heraeus. A researcher at Heraeus, Dr Richard Kuech first succeeded in producing high purity quartz glass from molten mountain crystal and building an industrial quartz lamp. The Heraeus brothers first developed a sunbed for medicinal purposes and it was used to promote health treatments and as a therapy for rickets and calcium deficiency. A German scientist, Friedrich Wolff, in 1960s asked Phillips to make the first tubular UV lamp and eventually canopies were added in the 1970s.

Wolff's intention was to try to improve the physical performance of athletes because he believed that UV would enhance their performance; but instead they just ended up with tans. Wolff was able to utilise this knowledge by inventing the first indoor tanning machine in 1978, which was specifically used for tanning. Indoor tanning grew in popularity throughout the 1980s and so the boom in the sunbed industry began.

Sunbeds became very popular between the 1980s and 1990s: sunbeds for hire in the home becoming very common and bright blue lights were often seen in people's bedroom windows as tanning hopefuls topped up their tans. The number of sunbed salons has continued to expand over the last two decades both in the UK and abroad. In the US the number of salon outlets outnumbers the number of McDonalds and Starbucks in sixteen major cities (Hoerster et al., 2009). In 2009 The UK South West Public Health Observatory conducted a survey to investigate the geographical distribution of sunbed outlets across the UK. The highest prevalence rates occurred in areas of greater deprivation. There are thought to be around 5,350 outlets in the UK but this number is likely to be much higher due to poor registration and the current inability to identify all salons. Salons are established in fitness centres, beauty parlours, hairdressers, and traditional salons. There is also anecdotal evidence that some sunbed salons are used for laundering money, and so they open and close frequently. Due to a lack of regulation it has been very easy for sunbed salons to open up and close, in order to be reopened under another name a few days later. Changing cultural and social views of sun tanning and social ideals about having a tanned appearance has generated positive views about having darker skin and this has also been attributed to looking 'healthy'. Access to sunbeds has enabled people from all over the world to obtain a tanned look by using artificial UV devices. These devices are cheap, convenient and accessible and young people have been able to access them. Opinion is now changing and the International Agency Research Working Group on Cancer (IARC) has upgraded artificial UV to category I carcinogenic to humans. In addition, increasing skin

cancer incidence has stimulated governments across the world to consider prevention strategies, including regulatory and legislative changes. This problem might be considered even more problematic for young people if legislative changes do not help to reduce overall exposure as the cumulative effect of solar and artificial UV could have the potential to further escalate skin cancer incidence over time.

1.4. Structure of the chapters in this thesis

The thesis is presented in eight chapters. Chapter one sets the scene for the public health importance of this research and provides an overview of the aims and objectives. Chapter two presents the literature review of sunbed use in relation to risk, motivation and experiences of young people.

Chapter three restates the research objectives and then explains the research approach and methods. This chapter includes a rationale for the approach adopted and ethical issues, before going on to describe in detail the study design, methods of data collection and conduct of the data analysis.

Chapters four to seven then present the findings of the qualitative interviews and focus groups with young people, organised around the major themes that emerged from the analysis. Chapter eight, the concluding chapter, provides a discussion of the key findings, and considers the limitations and strengths of the research. This chapter also provides my personal reflections on the research process and approach taken.

Chapter 2. Literature Review

2.1. Conduct of the review

This literature review summarises and critiques the available evidence relating to the risks associated with the use of sunbeds and other artificial tanning devices such as sun showers and sun lamps. It also aims to articulate the extent of sunbed use amongst young people and what is currently understood about the reasons why young people use them and what factors affect their behaviour.

The literature review covers the following aspects.

1. A critical review of the national and international literature on the risk factors associated with sunbed use.
2. A contrast and comparison of the sociological conceptions of health and tanning behaviour.
3. A critical analysis of the sociological and medical literature and research produced on young people who use sunbeds.
4. A critical analysis of relevant policy on sunbed use and how this is conceived within the medical and public sphere.

Search strategy

A systematic search of the literature was conducted using electronic databases, journals and abstracts spanning a variety of disciplines within psychology, sociology, medicine and health sciences. Relevant articles for each search term were reviewed and references from the paper were traced and reviewed.

This iterative process was repeated until saturation of the main sources of the literature was obtained. The process used was an adaptation of Polit et al. (2001).

Steps followed within the search strategy.

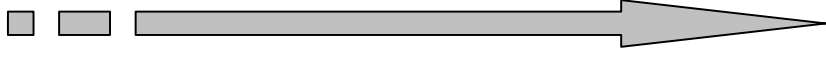
- | |
|---|
| Step 1- Identify the keywords within the subject area. |
| Step 2- Using key words to search relevant databases and literature. |
| Step 3- Screen titles and abstracts of articles identified by searches and retrieve relevant papers. |
| Step 4- Read all relevant materials and identify new references through citations. |
| Step 5- Organise material into relevant subject sections ready for analysis. |

Electronic databases searched	
Psychology Cambridge Journals online Informaworld (Taylor & Francis) MetaPress (Springer, IOS Press, etc) Nature Journals PsycARTICLES PsycINFO ScienceDirect Science Direct Scopus Web of Knowledge Wiley interscience	Sociology ASSIA Applied Social Sciences Index and Abstracts Blackwell Encyclopedia of Sociology ebrary Highwire Press (inc. OUP, SAGE) IBSS - International Bibliography of the Social Sciences Informaworld (Taylor & Francis) JSTOR National Statistics Online Sociological Abstracts

Electronic databases searched	
Medicine AMED - Allied and Complementary Medicine anatomy.tv (Primal Pictures Interactive Anatomy) CINAHL Cochrane Library Journals@Ovid Full Text MEDLINE (Ovid) - RECOMMENDED	Health Science BNI British Nursing Index and Archive ProQuest Nursing & Allied Health Source

The main search terms were refined by several pearl strings until key research articles were retrieved. The first main search item could present excessive

literature and in such case the second pearl string was combined and then the third and fourth until there were sufficient and relevant articles to review.



Main search	2 nd string pearl search	3 rd string pearl search	4 th string pearl search	5 th string pearl search
Skin cancer	Risk Young people Adolescents Teenagers Children Incidence Mortality Survival	Further literature was identified for review from key references from relevant articles		
Malignant Melanoma	Risk Young people Adolescents Teenagers Children Incidence Mortality Survival	North West England England Europe Worldwide	Further literature was identified for review from key references from relevant articles	
Tanning	Adolescents Children Young people	Behaviour Risk Dependence Body image Self esteem Attitudes Motivations	Further literature was identified for review from key references from relevant articles	
Artificial tanning devices	Adolescents Children Young people	Risk Behaviour Dependence Body image Self esteem Attitudes Motivations	Further literature was identified for review from key references from relevant articles	
Sunbeds	Adolescents Children Young people	Risk Behaviour Dependence Body image Self esteem Attitudes Motivations	Further literature was identified for review from key references from relevant articles	
Sun lamps	Adolescents Children Young people	Risk Behaviour Dependence Body image Self esteem Attitudes Motivations	Further literature was identified for review from key references from relevant articles	
Solaria	Adolescents Children Young people	Risk Behaviour Dependence Body image Self esteem Attitudes Motivations	Further literature was identified for review from key references from relevant articles	
Side effects	Sunbeds	Eye damage Ocular malignancy Psoriasis Burning Photoaging		

Risk taking behaviour	Adolescents Young people Children	Sunbeds	Further literature was identified for review from key references from relevant articles	
Tanorexia	Adolescents Young people Children	Sunbeds	Further literature was identified for review from key references from relevant articles	
Behaviour models	Theory of planned behaviour	Sunbeds Tanning	Further literature was identified for review from key references from relevant articles	
Behaviour models	Theory of reasoned action	Sunbeds Tanning	Further literature was identified for review from key references from relevant articles	
Risk behaviour +	Tanning +	Appearance Media Peers Friends Social influences Finance Addiction	Young people Adolescence Teenagers	Further literature was identified for review from key references from relevant articles
Behaviour interventions	Tanning Sunbeds	Adolescents Children Teenagers	Further literature was identified for review from key references from relevant articles	
Behaviour change	Health Risk Knowledge	Adolescents Children Teenagers	Further literature was identified for review from key references from relevant articles	
Body Dysmorphic Disorder	Tanning	Young people Teenagers Adolescents	Further literature was identified for review from key references from relevant articles	
Prevention strategy +	Skin cancer			

2.2. Risk factors associated with sunbeds

There are several risk factors associated with sunbed use. These include the development of skin cancer malignant melanoma, non- melanoma skin cancers squamous cell and basal cell skin cancer, burning, photo-aging and damage to the eyes.

Malignant melanoma skin cancer

The global incidence of malignant melanoma is increasing year upon year. In the last several decades the incidence of all skin cancers has rapidly increased in Europe and industrialised countries (Doll, 1990; Autier et al., 1994; Karlsson et al., 1998; Regil et al., 1996; Mackie, 1998; Hall et al., 1999; Westerdahl et al., 2000; Diffey, 2003). Despite increases over the last fifty years the incidence of

malignant melanoma is reported to be beginning to level off in several Western European countries, Australia, New Zealand and the USA (Erdmann et al., 2013). However, these countries still report amongst the highest incidence rates of malignant melanoma particularly in Norway and in Northern European countries (Tryggvadóttir et al., 2010; de Vries et al., 2003), in Australasia (Bulliard and Cox, 2000; Coory et al., 2006) and North America (Hall et al., 1999; Bulliard et al., 1999).

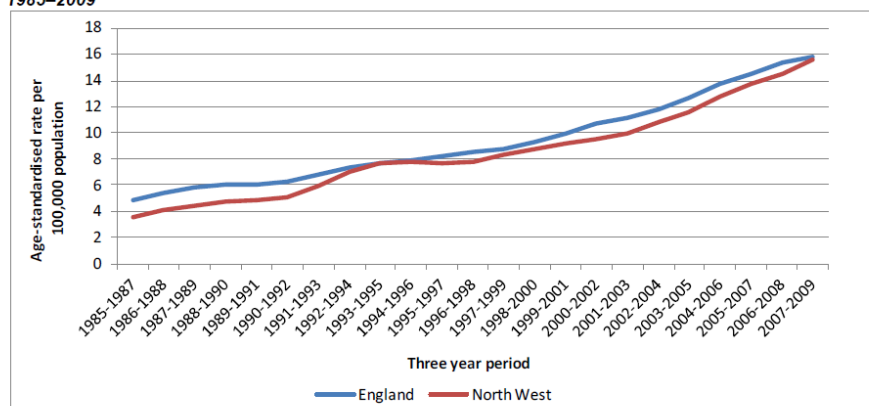
Changes in attitudes towards sun seeking behaviour has resulted in both an increased incidence of malignant melanoma (Graham and Asbjorn, 1996; de Vries and Coebergh, 2004) and a change in the morphology. The depth of the melanomas tends to be thinner at diagnosis than previously, which is an indication that the melanoma is less likely to have spread. One reason for this is that patients are being diagnosed earlier before the melanoma thickens (Coory et al., 2006; Downing et al., 2006; Mackie et al., 2007 and Montella et al., 2009). This may be occurring due to improved surveillance and earlier presentation as a result of enhanced public awareness and prevention campaigns (Bataille and de Vries, 2008). It is clear from the literature that there are very high numbers of new cases of malignant melanoma skin cancer even in those countries that show a slowing down in the year on year increase incidence rates.

One implication is that health systems will need greater resources to provide effective surveillance for cases that have been treated but are being monitored, as they are at an increased risk of developing further malignant melanoma lesions. This presents health organisations and commissioners of services with an enormous challenge in respect of implementing effective skin cancer prevention strategies as prevention and surveillance is the most effective way at halting the year on year incidence of this disease.

The highest incidence of malignant melanoma occurs in Australasia with incidence rates rising to nearly 40 persons per 100,000 populations, which is

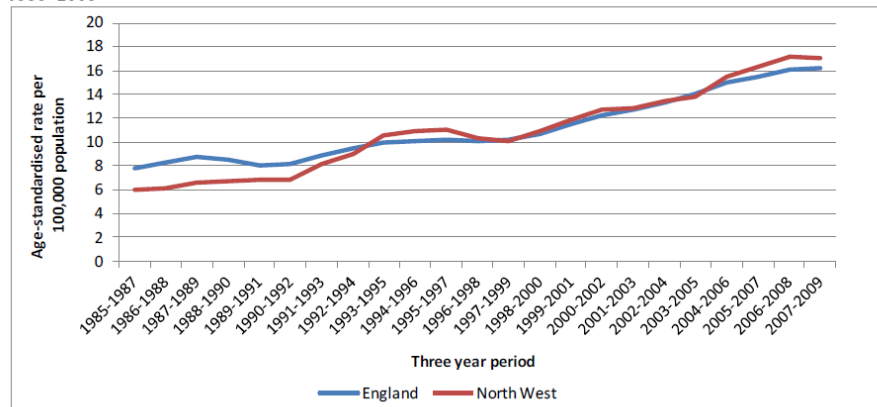
twice that of the highest European incidence (Parkin et al., 2005). There are around 48,000 new cases of malignant melanoma diagnosed each year in the European Union, with the highest rates occurring in Northern Europeans who are more likely to have fairer skin. In 2002 the European age standardised incidence rates for malignant melanoma were highest amongst Swedish and Danish males and females (Ferlay et al., 2004). In 2010 there were 12,818 new cases of malignant melanoma in United Kingdom (ONS, June 2012, ISD, April 2012, Welsh Cancer Intelligence and Surveillance Unit, April 2012 and Northern Ireland Cancer Registry, June 2012). In 2007-09, the 3-year average age-standardised incidence rate of malignant melanoma for males was 15.5 (North West Strategic Health Authority) and 15.8 (England) per 100,000 population, and for females the rate was 17.0 (North West SHA) and 16.3 (England) per 100,000 population. In the North West, malignant melanoma incidence has nearly tripled for females (Figure 2) and has increased five-fold for males (Figure 1) in the period between 1985-87 to 2007-09. The North West has experienced a similar trend to the national average but there is a greater increase in the rate of female cases. It is not understood why the North West rates are higher than the England average. It has been postulated that this could be increased sunbed use by women, but this has not been confirmed.

Figure 1: Malignant melanoma – 3-year average age-standardised incidence rates for males, 1985–2009



Source: UK Cancer Intelligence Service (UKCIS)

Figure 2: Malignant melanoma – 3-year average age-standardised incidence rates for females, 1985–2009



Source: UK Cancer Intelligence Service (UKCIS)

Despite high skin cancer incident rates, mortality rates for skin cancer are not as high as for other malignant conditions, causing around four deaths in every 100,000 people. Malignant melanoma reflects a poor relative five-year survival rate if it is not detected at an early stage (ONS, 2010). However, the 5-year relative survival rate in England and Wales has improved year on year over the last thirty years with a rate of 90% for women 81% for men. Poorer survival figures may be caused by delays in presenting to health services due to patient delay or poor clinical assessment, or variations in the effectiveness of treatment may also be attributed to this, (Thompson and Forman, 2009; Richards, 2009).

For young people, malignant melanoma is the third most common cancer for fifteen to twenty four year olds and the second most common cancer for those aged between fifteen and thirty four years, which makes skin cancer in young people a particular concern (CRUK, 2011).

Non- melanoma skin cancer

There are two other types of main skin cancers, referred to as non-melanoma skin cancers and these are basal cell and squamous cell carcinoma. In the UK the incidence of non-melanoma skin cancer accounts for approximately 84,000 new cases each year, but this type of cancer is rarely fatal and is often cured. Malignant melanoma, however, is rarer but survival rates are poorer and it

accounts for approximately 2,000 deaths per annum. In 2010 there were 2,203 deaths from malignant melanoma in the UK (ONS, 2011; ISD, 2011 and Northern Ireland Cancer Register, 2011). In respect of sunbeds Wehner et al. (2012), conducted a systematic review of the literature and a meta-analysis and concluded that indoor tanning is associated with a significantly increased risk of both squamous cell and basal skin cancer. Sunbed users who used them before the age of twenty five years had an increased risk of developing non-malignant skin cancer later in life.

Other risk factors associated with exposure to artificial UV

There are other potential risk factors that are associated with exposure to artificial UV rays such as photo-aging, burning and eye damage. The use of the term photo-aging was first presented by Kligman and Kligman (1986) when they described the visible effects of ultraviolet radiation on the skin. Chronologically aged skin has been described as atrophic in other words showing a loss of fullness over time, whereas photo-aged skin shows hyper-plasticity whereby the skin becomes more stretched due a potential protective effect and this disrupts the collagen resulting in continued collagen loss and more wrinkles (Bernstein et al., 1996). There have been very few studies in the literature that explores the relationship between artificial UV damage and photo-aging. In a German study fifty-nine individuals voluntarily started to use sunbeds and were observed over a three month period. Punch skin biopsies were taken from exposed and non-exposed skin areas which when examined showed a deletion and mutation of mitochondrial cells which is known to cause photo-aging following UVA irradiation. The authors concluded that sunbeds do induce photo-aging, (Reimann et al., 2008).

There have been a number of reports in the media of stories about people especially young people being burned on sunbeds sometimes experiencing severe pain, blistering and redness. There are numerous studies that provide evidence that young sunbed users experience skin burns as a result of using a

sunbed, (Boldeman et al., 2003; Demko et al., 2003; Lazovich et al., 2005; Calder and Aitken, 2008; Cokkinides et al., 2009; Lake et al., 2013). Using sunbeds has also been associated with other health risks such as the development of erythema or severe reddening of the skin, conjunctivitis, cataracts, blindness, pruritus, first and second degree burns, acute photosensitivity, premature skin aging, immune system dysfunction and nausea and ocular melanoma (Spencer and Ammonette, 1995; Walters and Kelley, 1987; Lichtenstein and Sherertz, 1985 and Matasurra and Amanthasawary, 2004; Vajdic et al., 2004; Levine et al., 2005).

These health risks can be very dangerous. Moreover, a lack of information and the ability to determine the strength and emissions from sunbed machines may leave sunbed users at increased risk. This is particularly alarming for younger sunbed users who are likely to be over exposed to UV damage from an early age and continued use over time may mean that the longevity of their exposure could lead to further long-term effects of UV damage.

2.3. The process of tanning and sunburn damage

Summer ultra violet light contains approximately 95% UVA and 5% UVB. UVA stimulates melanin pigment already present in the upper skin cells. It creates a tan that appears quickly but is also lost quickly and it penetrates deep into the skin layers and can affect blood vessels and connective tissue. The skin loses its elasticity and the individual can start to wrinkle. Large doses of UVA can cause premature ageing of the skin. UVB however stimulates the production of new melanin, which leads to a heavy increase in the dark-coloured pigments within a short space of time. Higher doses of UVB can cause sunburn which increases the likelihood of developing cancer. The exact mechanism of for how UVB initiates or promotes cancer is still not fully understood as the aetiology of malignant melanoma is complex. Sunbeds generally deliver ultraviolet A (320-400 nm) at dose rates to the skin two to three times those of sunlight and may deliver ultraviolet B (280-320 nm) at rates near to those of bright sunlight (Hawk,

1983). Miller et al. (1998), calculated that a typical individual who had twenty sessions a year on a sunbed will have 0.3 to 1.2 greater accumulative dose from that of the sun, and for regular sunbed users for example 100 sessions per annum the UVA dose is 1.2 to 4.7 times greater, 12 times greater than emissions from the sun.

Sunburns are usually caused by UVB (280-320 nm) which is absorbed by DNA and can result in chromosomal damage. UVA (320-400 nm) in addition to solar radiation can also come from devices such as sunbeds/sunlamps etc. UVA has longer wavelengths than UVB and thus penetrates deeper into skin. UVB is about 1000 times more effective than UVA in inducing sunburn (McKinley and Diffey, 1987) and is much more potent in inducing immediate pigment darkening (Irwin et al., 1993). It is estimated that about 19% to 50% of the solar UVA can reach the depth of melanocytes (Bruls et al., 1984), whereas only about 9% to 14% of solar UVB reaches the melanocytes. UVB is known to cause mutation in oncogenes and tumour suppressor genes (Brash et al., 1996; and Sarisin, 1999) which may lead to the development of cancer cells. UVA therefore, has the ability to create biological damage to DNA via photosensitized reactions which can destroy and mutate the DNA. A nuclear protein p53 plays a critical role in safeguarding the genome which holds the whole hereditary information contained in the cell through regulation of cell division, DNA repair and apoptosis or cell death. Damage to the DNA can inhibit these cell functions, which may also include the role in tumour suppression. Peak and Peak (1991); Schulman and Fisher (2009); Cui et al., (2007) highlight that tanning does not occur without a degree of DNA damage. This assertion places some doubt about possibility of someone having a “safe tan” whether that is induced by solar UV or artificially produced UV rays.

2.4. Ultra Violet light exposure during sunbed use

Oliver et al. (2007), carried out a survey in a Scottish Local Authority area to evaluate the extent of uptake and to examine the cancer risks from sunbeds.

The authors examined spectral measurements of UV emissions and also carried out a quantitative questionnaire for sunbed users regarding their use of sunbeds. The median cancer-weighted exposure of all 133 sunbeds was comparable to that of Mediterranean sunlight. This was a significant increase compared to 1998 data. The British standard recommends that not more than 15 kJm² effective dose is received in 1 year. Calculating each dose during each session and the total number of sessions required to reach this top dose. This can be compared to the British Photodermatology Group (BPG) recommendation of 20 sessions per year maximum (Diffey, 1990) and the Sunbed Association's 60 sessions per year maximum. 133 sunbeds were tested in 50 premises, only 17% of which complied with the British standard and were type three suitable for unskilled use. Therefore, 83% emitted higher doses than the recommended British and European standard. This may lead to an increase in potential side-effects. Tierney et al., (2012) conducted a UV spectra survey on 402 artificial tanning units in England and these doses were measured against the British and European standard (2003). The authors determined that nine out of ten sunbeds in the study emitted UV levels exceeding the maximum European standard, including one unit that emitted rays equivalent to six times that of the midday Mediterranean sun. This highlights that any exposure to sunbeds may expose sunbed users to dangerous doses of UV in most cases the dose emissions are unknown by both the user and the sunbed operators.

2.5. Risk associated with ultraviolet radiation and malignant melanoma skin cancer

There are mixed opinions in the field regarding the evidence that presents a positive or negative association between sunbed use and the risk of all skin cancers and malignant melanoma in particular. Karagas et al. (2002), conducted a population based, case– control study in the US that included 603 basal cell carcinoma (BCC) case patients, 293 squamous cell carcinoma (SCC) case patients, and 540 control subjects. They found a statistically significant association between the use of tanning devices and the incidence of non-

melanoma skin cancers. The findings were consistent with earlier indications that the use of tanning devices may contribute to the incidence of basal cell and squamous cell cancer. Faurschou and Wolf (2007) found an association between sunbed use and basal cell cancer but not for malignant melanoma; however, there may not have been sufficient lag time in which subsequent increases in incidence could occur in the proceeding decade.

Early case-control studies in Italy, the US and the UK concluded that there was insufficient evidence to associate sunbed use with an increased risk of malignant melanoma, (Elwood et al., 1986; Holly et al., 1987; 1995; Zanetti et al., 1988; Bataille et al., 2004). These studies were, however, small and the prevalence of sunbed usage in cases and controls was low, making it difficult to draw firm conclusions. A UK case control study of 413 cases and 416 controls found a significant risk association for subjects who had ten or more sunbed sessions, were young or had fair skin, (Bataille et al., 2004). The authors acknowledged that a lag time between exposure to sunbed and melanoma could have led to an underestimation of long term risk. Moreover, the total exposure time of participants was less than 20 hours of total lifetime sunbed exposure, only 9% in the case group and 11% in the control group having had more than 20 hours exposure time. Participants' ability to reliably recall their sunbed exposure may have also influenced the results in this research.

Some studies showed no associations with sunbed exposure and the risk and malignant melanoma (Gallagher et al., 1986; Holman et al., 1986). de Vries et al., (2005) in a large European case control study in France, Belgium, Netherlands and the UK concluded that there was insufficient evidence to identify a positive association of sunbed use and melanoma risk, though the authors highlight limitations of their study. These included recruitment and recall bias, possibly because of guilt or attempts to reduce self-blame. This type of bias has been found in other studies (Linn et al., 1982; de Vries et al., 2002). Other researchers, however, have identified modest positive associations with

sunbed use and the risk of developing malignant melanoma (Walter et al., 1990, 1999; Autier et al., 1994; Westerdahl et al., 1994; Chen et al., 1998; Young, 2004; Clough-Gorr et al., 2008). In a US case control study the authors found an increased risk of developing malignant melanoma among sun-lamp users under the age of 25 years compared to first use later in life, particularly if the first exposure was on earlier types of sunlamps, used before the 1970s (Chen et al., 1998). Swerdlow et al. (1988), in a Scottish stratum matched case-control study showed no risk associated with fluorescent lights at home or work, but highlighted a significant raised risk for those using sunbeds and sunlamps. Moreover, the risk was further elevated for those having used sunbeds five years before presentation. In a systematic review Swerdlow and Weinstock (1998) found that in nineteen published case control studies, six showed statistical significance associated with risk of sunbed use and malignant melanoma (Westerdahl et al., 1994; Autier et al., 1991; Swerdlow et al., 1988; Walter et al., 1990 and Adam et al., 1981).

Westerdahl et al. (2000), in a population-based, matched; case-control study from southern Sweden found a dose response between the extent of sunbed use and the risk of developing malignant melanoma. The researchers analysed 571 patients with a first diagnosis of cutaneous malignant melanoma and 913 healthy controls aged 16–80 years. A significantly elevated odds ratio for developing malignant melanoma after regular exposure to sunbeds was found, with the greatest risk occurring in sunbed users under the age of 36 years. Westerdahl et al. (1994), demonstrated that individuals younger than 36 years old who use indoor tanning devices regularly had an increased risk of melanoma 8.1 times greater than for non-users.

A prospective study in Norway and Sweden showed a statistically significant higher risk of malignant melanoma if hair was lighter, and if women had seven or more moles or birthmarks (nevi) greater than 5mm asymmetry, with a strong association with malignant melanoma after sunbed use once or twice a month

(Veierod et al., 2003). Gallagher et al., (2005) conducted a meta-analysis of 9 case control studies and one cohort study in Canada and found that there was a positive association between ever having used a sunbed and malignant melanoma. In 2007 The International Agency Research Working Group on Cancer (IARC, 2007) carried out a systematic review of the literature and the risks associated with malignant melanoma, and also concluded that malignant melanoma was positively associated with individuals having ever used a sunbed, with a 75% increased risk of developing skin cancer, compared to those never having done so. The study also identified a moderately increased risk of cutaneous malignant melanoma for young people who had used sunbeds in their teenage years. Thirteen out of the nineteen studies reviewed by the International Agency on Research in Cancer presented positive associations for “ever” use of sunbeds versus “never” use, and four studies were statistically significant, (Vieirod et al., 2003; Swerdlow et al., 1988; Walter et al., 1999) in summary they concluded that there was a significantly positive association between “ever” versus “never” use of sunbeds and risk of developing malignant melanoma. Other studies support these findings, (Stern, 2001; Wang et al., 2001; Ting et al., 2007; Clough-Gorr et al., 2008)

A significant step towards consensus amongst researchers in the field about the risk associated with sunbed use and malignant melanoma was taken by the International Agency for Research on Cancer (IARC). In 2009 IARC involved 20 scientists from 9 countries who reassessed the carcinogenic effect of radiation on humans, including UVA and UVB and referred to UV emitting tanning devices. They concluded that these devices should be raised to a category one classification for ultraviolet-emitting tanning devices from “probably carcinogenic to humans” to “carcinogenic to humans” the highest risk category (El Ghissassi et al., 2009). Earlier studies presented mixed evidence of the risks associated with artificial UV exposure and malignant melanoma but latter studies have provided more conclusive evidence of a causal association.

2.6. Perceived benefits of sunbeds

There have been a number of benefits for sunbed use reported in the literature and claims made by the Sunbed Association and the tanning industry. The main benefits cited in the literature are the use of sunbeds for increasing vitamin D levels in the prevention of disease, the treatment of dermatological conditions, prevention of sunburn and for the treatment of psychological morbidity such as seasonal affective disorder.

Solar radiation is the main cause of skin cancer but it also one of our main sources of vitamin D. The indoor tanning industry proponents use the benefits of associating vitamin D with health, to justify or promote the use of sunbeds. Vitamin D insufficiency has been associated with both an increased incidence but also poorer outcomes of a variety of cancers such as, colorectal, breast and prostate cancer and Hodgkin's lymphoma. A higher level of vitamin D has also been associated with reducing the risk of heart disease and osteoporosis (Ahonen et al., 2000; Holick, 2004; Giovannucci, 2005; Van Der Rhee et al., 2009; Krishnan and Feldman, 2011). Meta-analysis from two studies (Yin et al., 2009; Gandini et al., 2010) has shown a positive protective relationship between vitamin D and colorectal cancer.

Countries in the upper and lower latitudes have less exposure to sunlight and it has been suggested that sunbeds could provide these populations with the vitamin D levels that they require to provide a protective affect from diseases such as cancer and multiple sclerosis (Holick, 1995). The generally accepted serum concentration of 25 hydroxyvitamin D (25(OH)D) is the best measure of an individual's total vitamin D status (Thiedan et al., 2008). Thiedan et al., (2008) in a randomised controlled trial in a Danish study investigated whether sunbeds emitting UVA and only 0.5% or 1.4% UVB would increase the serum 25-hydroxyvitamin D (25(OH)D). The results in this study confirmed that only a few sessions increased the serum vitamin D levels to serum 25-hydroxyvitamin D (25(OH)D) but these levels plateaued after just a few sessions so no further

benefits were achieved. The authors did not advocate sunbeds for increasing vitamin D levels. Moreover, the increased risk of skin cancer versus the maintenance of vitamin D levels by this source may question this approach as a viable and sustainable way of increasing levels of vitamin D. Diffey (2013) in a UK study used mathematical modelling to demonstrate how modification of oral vitamin D intake during winter and spring and sun exposure in the summer could maintain adequate vitamin D levels and would be a much safer option than sunbed use. Although the modelling uses a series of mathematical principles there are some limitations to this study in that variables such as the rate of vitamin D production, age, exposure to naked skin may be difficult to measure precisely in a model like this, nevertheless, Diffey demonstrates how oral intake of vitamin D may be feasible in maintaining adequate vitamin D levels.

Other benefits cited in the literature include the treatment of dermatological conditions such as acne and psoriasis. Psoriasis is a chronic skin condition involving the overproduction of skin cells and the abnormal growth of blood vessels causing the appearance of scaly reddened skin. In a UK controlled study of UVA sunbed treatment of psoriasis demonstrated that a short course of sunbed treatment does improve psoriasis in some patient but the degree of improvement overall was small (Turner et al., 2000).

There is little evidence that the treatment of psoriasis using sunbeds is effective. There are several concerns relating to sunbeds being associated with treatment of skin conditions, firstly there may be an increase in the use of sunbed for individuals who self-diagnose. There are no controls or advice and this could lead to sustained over exposure to harmful UV rays. Secondly, this approach could be potentially hazardous in that dose emissions are not constant and different machines may emit more or less powerful UV rays, leading to increased risk of UV damage (Su et al., 2005). The longevity of use for treatment of chronic conditions such as psoriasis may expose people to potentially harmful UV rays increasing their susceptibility to develop skin cancer.

There is a place for phototherapy treatment but this should be prescribed and overseen by an appropriate medical practitioner with dermatological expertise. Young people in particular have reported that sunbeds clear their spots and this may be a concern as they attempt to access sunbeds in the form of a treatment without medical supervision or advice.

In a Swedish study by Boldeman et al. (1996), using a stratified random sampling approach 1502 students aged 14-19 were selected from 191 schools and were asked to complete a questionnaire incidental evidence showed that 77 out of 89 who reported acne had used a sunbed at least ten times during the last year, the authors interpreted this as a placebo effect. Mackay et al. (2007), reported sunbed use amongst adolescents for clearing spots.

2.7. Legislation regulating under-age sunbed use

Legislation to control sunbeds is in place in some countries such as Finland, France, Belgium, Norway, Portugal, Sweden, some states in the United States, New Zealand, Australia, Scotland England, Northern Ireland and Wales. France has robust legislation banning under-18s using artificial UV devices, but many countries fall short of banning use for under 18s. Brazil has a total ban on sunbeds for all ages.

In most developed countries efforts to implement legislative changes have been ineffective in relation to regulation of the industry or preventing minors using sunbeds (Schnieder and Kramer, 2010). An Australian study by Makin et al. (2011), attempted to review the compliance of legislation restricting under-18 sunbed use and surveyed and visited thirty salon business premises. The authors concluded that overall regulatory standards were more effective than voluntary standards to ensure compliance but suggested that there needed to be stringent monitoring of the legislation. Australian territories have either implemented a ban on sunbeds or have committed to a ban on sunbeds by December 2014 making Australia the only other country to have a total ban.

In the UK, the All Party Parliamentary Group on Cancer (APPGC, 2009-2010), as part of Britain Against Cancer, supported a private members bill in an attempt to introduce legislation banning sunbed use for under 18s. Advice about young people using sunbeds has been given by the author of this thesis to members of parliament, CRUK and peers who petitioned for this legislation to be submitted to parliament. Legislation is needed because young people had the opportunity to utilise unlimited token-operated tanning machines in the same or different salons across Merseyside. These outlets operated without any staff and indeed young people were rarely asked for proof of age and they were hardly ever given advice about the dangers of sunbeds. Sunbed operators were under no legal obligation to discourage children from using tanning equipment. This lack of regulation may have resulted in the development of a 'ticking time bomb', in relation to the future prevalence and incidence of skin cancers. The need to support legislative changes was advocated by several authors (Thompson et al., 2010; Roberts and Foley, 2010; Elwood and Gallagher, 2010).

The introduction of legislation by the parliaments of the constituent countries in the UK and the Welsh Assembly have all now legislated to prevent under-18s from using commercially operated sunbeds. Within Scotland in 2009, legislation banned the hire, sale and use of UV tanning equipment to under-18s. In 2011, the Westminster' sunbed 2010 Act came into effect. This legislation also aimed to prevent the use of commercial sunbeds by under 18s. In October 2011 the Welsh Assembly Government also introduced legislation but went further by making extra provisions and restrictions. Welsh regulations stipulated that sunbed businesses needed to ensure that any use of sunbeds in commercial properties should be supervised by a "competent supervisor" and they also banned sunbeds business in domestic premises and on the sale and hire to under-18s too. In May 2012 Northern Ireland also introduced legislation that prohibits the sale, hire and use of sunbeds to under-18s. The Northern Ireland provisions go even further and mandate the need for sunbed staff to be trained, to provide information and to promote the use of eye protection.

Sunbeds have been shown to be hazardous to health and have been categorised as harmful and carcinogenic to humans, increasing and high skin cancer incidence rates continue to affect population in Europe, Australasia and the industrialised countries. Young people have accessed sunbed and there is high sunbed use amongst adolescents.

2.8. Risk

Risk in western society is often viewed negatively and is something to be avoided. Taking unnecessary risks is often seen as careless, irresponsible and 'deviant' (Lupton, 1999). However, some individuals will embrace voluntary risk taking as a means of self-control and agency (Lupton and Tulloch, 2002). Lupton and Tulloch (2002) also emphasise the need to examine cultural differences of risk and risk-taking to enable us to understand how risk is experienced as part of everyday life. They question, for example, how social class, sexual orientation, gender, ethnicity, geographical locations and nationality might influence our perceptions and experience of risk.

Lupton describes three theoretical perspectives relating to risk: risk society, cultural/symbolic and 'governmentality'. In relation to risk society, Beck (1992) considers how western societies are shifting from the benefits of early industrialisation to a situation of late modernity, whereby the industrialisation process has created inherent risks which have been compounded by advances in technology and carry a more global risk to society. Douglas (1992) expands on the cultural and symbolic aspects of risk and shares the view that social responsibilities and expectations are based upon shared cultural beliefs which are pre-established and are nurtured within the community rather than individually. The 'governmentality' risk perspective draws upon the work of Foucault (1991) who proposed that modern societies are controlled in ways that invite citizens to be more reactive, to take more responsibility for risk and to govern their own lives through the shaping of minds through institutions like schools, hospitals and prisons.

According to the German sociologist, Ulrich Beck (1992), the world risk society is the result of the transition from first modernity to second modernity. Beck's social theory presents a set of positions. The industrial revolution marked a period of time whereby goods and wealth were generated by reducing scarcity through technological advances. Beck argues that the mass production of these goods have produced "bads" or risks and are a consequence of modernisation. Beck defines risk as "a systematic way of dealing with hazards and insecurities induced and introduced by modernization itself. Risks, as opposed to older dangers, are consequences which relate to the threatening force of modernization and to its globalization of doubt" (Beck, 1992: 21). Beck described the pre-industrial period as a time when most dangers emerged from natural risks such as floods and earthquakes etc. During the industrial revolution dangers to humans occurred largely due to pollution and Beck referred to these as manufactured risks. In late modernity contemporary risks are manufactured risks but in addition have the ability to threaten human existence such as in the cases of nuclear catastrophe, global warming, the spread of disease through experimental laboratory work, the dangers of genetically modified crop production and weapons development. Social inequalities derive from a mix of historic and contemporary risks. Beck (1992:35) states that "wealth accumulates at the top, risks at the bottom." As a consequence, the poor in the world are exposed to more risks than the wealthy. Moreover, the wealthy are likely to be better equipped in terms of income, education and power to avoid some of these risks. Beck recognised that in late modernity social influences regarding the struggle to survive the "risk society" is not class-led, rather, that risks have become more individualised and so people view social problems as shortcomings of the individual rather than any social processes (France, 2000).

Within communities social, cultural and psychological diversity plays an important role in how people approach risk and risk-taking behaviours. Bourdieu's concept of cultural capital refers to the collection of symbolic elements such as skills, tastes, clothing, material belongings, credentials, etc.

that an individual will acquire through being part of a particular social class (Bourdieu, 1986). A collective identity can be created by sharing similar cultural capital with others. However, Bourdieu recognised that cultural capital could also be a source of inequalities, as poverty and ill-health which may restrict the ability to obtain capital. There are three forms of cultural capital described by Bourdieu. These are embodied; objectified; and institutionalized. Differences in a person's accent could be considered as embodied cultural capital. Material ownership could be described as objectified and institutionalised form could refer to attainment of qualifications or professional recognition (Bourdieu, 1986). Bourdieu's social theory involves three main components, the field, habitus and capital. He described field as a set of principles where groups place particular structure and value on their social practices. Habitus is where individuals accumulate what they know and have learned and their social experience throughout their life and how they will act according to what they have learned. If an individual's habitus mirrors the values in a particular field then they will be more successful in gaining capital in that field and in turn will be able to gain more power to influence the values. This is how Bourdieu explains the development and reproduction social structure (Bourdieu, 1992). One of the key criticisms of Bourdieu's work is that he assumes that a family is functional and static and omits issues such as diversity with roles at work, sexual and gender exchange, changing family dynamics and changing cultural values (Silva, 2005).

2.9. Young people and risk behaviour

Adolescence is commonly considered as a period of transition from childhood to adulthood (Kaplan, 2004, p.1). However, this transition may vary according to the cultural context. There is inconsistency in the definition of adolescence. For example, the World Health Organisation (2001) defines adolescence as a period between 10-19 years. As well as inconsistencies in the definition, cultural differences occur within social determinants, for example, in some developing countries particularly in poorer areas in the Middle East and Africa; adolescents are exposed to cultural factors such as the practice of marriage before the age

of 18 years of age, sexual exploitation, being forced to work and being excluded from education (Temin et al., 2009). This highlights that adolescents will face varying challenges depending on their individual circumstance and social and cultural context.

Significant developmental transitions occur in adolescence and the extent of these changes is purported to be second only to changes during infancy (Lerner and Villarruel, 1994). Rapid development can be characterised by a number of competencies that adolescents acquire, for example, evolving sexuality, transition through education and coping with changes to family, peer and wider social interactions. Other challenges include the capacity to form close relationships, achieving a masculine or feminine social roles, achieving independence and the ability to develop cognitive and psychological resources in adult life (Hazen et al., 2008). This can be a very challenging period for adolescents, however, difficulties can be compounded, as inevitably there will be other complicating social challenges that adolescents will face such as family breakdown and coping with new adult relationships, exposure to risk taking behaviours, parental mental illness, drug misuse, domestic violence and neglect. Young people attempt to navigate through these challenging social and personal contexts as they move into adulthood, attempting to show that they are in control of their lives. Denscombe, (2001) in a UK study involving 15-16 year olds found that smoking was found to have symbolic significance in terms of how young people present themselves to others. The paper analyses the role of smoking in relation to self-image, self-empowerment and self-affirmation and concludes that young people may cope better within uncertainty about their identity, through smoking.

During adolescence, young people become more exposed to risk behaviours, which may predispose them towards poorer health outcomes in the future. Alternatively, risk-taking behaviour can be seen as a normal part of development, which adolescents usually grow out of when they reach adulthood

(Steinberg and Morris, 2001). In some cases, adolescent behaviour can continue into adulthood, related, for example, to mental health, violence and substance abuse (Moffitt et al., 2002). As well as risk-taking and the exploration of new experiences, the period of adolescence also involves biological changes. During puberty, hormonal changes as well as changes in brain function can result in behaviours such as sensation seeking and impulsiveness (White, 2005). Early onset of puberty has also been linked with a number of emotional problems and risk-taking such as conduct disorder, substance use and increased anxiety and stress (Costello et al., 2007).

In relation to the social context, stresses relating to social deprivation have been shown to be associated with increased offending in young people (Weatherburn and Lind, 2001). Disruption in parenting is associated with increased likelihood of young people offending. Another aspect of potential influence in risk-taking is when young people have been exposed to abuse, neglect or violence themselves during adolescence, which has been associated with an increased risk of violent offending and substance use among young people (Smith et al., 2005).

The choices that young people make, including physical activity, eating habits, and substance use, change during adolescence. During this developmental phase, health inequalities emerge or worsen and translate into continuing health problems and inequalities in the adult years. Affluence is an important predictor of young people's health. In general, cost may restrict families' opportunities to adopt healthier lifestyles and health behaviours such as eating fruit and vegetables (Richter et al., 2009; Vereecken et al., 2005; Vereecken et al., 2009) and participating in physical activity that requires the payment of a fee (Zambon et al., 2006). Access to health resources for adolescents living in low-income households is generally poorer and may result in poorer health in later life (Nic Gabhainn et al. 2009).

Socio-economic factors, strong family bonds and good communication with parents have been shown to be protective factors, enabling young people to deal with stressful situations and to cope when faced with the adverse consequences of several negative influences. They are also more likely to report positive health outcomes such as good self-rated health and satisfaction with life and reduced psychological and physical problems (Waylen et al., 2008; Moreno et al., 2009; Woodward et al., 2003). Moreover, developing strong peer relationships also has a protective factor including fewer psychological complaints. This is thought to be a consequence of developing the ability to form identity, improve self-esteem, develop social skills and establish autonomy (Zambon et al., 2010). However, peers can also have a negative impact on health behaviour - promoting drinking alcohol and smoking, for example, (Kuntsche, 2009; Simons-Morton and Chen, 2006).

Another factor that can be influential in the development of self-esteem, healthier behaviours and better health outcomes and lower smoking rates among young people is a supportive school environment, this will inevitably involve peer influences too. Schools may have an important role in reducing negative health behaviours (Vieno et al., 2004; Freeman et al., 2009; Rasmussen M et al., 2005).

2.10. Inequalities

Trends in health are very strongly linked to health inequalities, (Viner and Barker, 2005) and it has been recognised that the cultural, socio-economic and familial circumstance that young people experience will affect the life course into adulthood (Wadsworth, 1997). There are numerous factors that will influence differences in health risk behaviours such as gender, socio-economic status and ethnicity.

Gender health disparities occur due to cultural norms and practices. These cultural norms and practices often influence men and women's behaviour in society. Both gender differences and gender inequalities can lead to disparities in health outcomes and access to health care. Connell (2009) emphasised that gender is a large-scale 'social structure' not just a matter of 'personal identity'. Connell's definition of gender: "Gender is the structure of social relations that centres on the reproductive arena, and the set of practices that bring reproductive distinctions between bodies into social processes." (p. 11). It is important that we appreciate that there are differences. WHO (2008) suggests that gender differences in health are a result of both biology and social factors and that behaviour is dictated by the culture, gender norms and values that are formed by men and women.

In relation to health risk behaviour young girls are now more likely to smoke than young boys and to become regular smokers leading to adulthood (Lader and Matherson, 1991). Trends for smoking are now strongly linked with social disadvantage; moreover, there is a strong correlation with being a woman and being from a working class background. Restricted access to material resources and additional caring responsibilities has shown to be linked to cigarette smoking, (Graham, 1994).

A UK study involving 6020 pupils aged 15 to 16 years from 41 schools in England utilised an anonymous self-reporting survey to study ethnic and gender differences among adolescents in smoking, drinking and drug taking. More boys than girls reported drinking and drug taking. Girls were more likely to smoke cigarettes but boys were more likely to smoke heavily (Rodham et al., 2005). Numerous investigators have considered the role of gender in differences in risk taking behaviour. Gender and socio-economic aspects were explored by Bergman and Scott (2001) who examined the differences between adolescents' health-risk behaviours and their well-being in the UK. They found that there are gender differences in self-esteem, self-efficacy, unhappiness and worries, that

well-being and risk-taking (smoking and fighting) are linked; and that socio-economic factors affect risk behaviour and worries but have limited impact upon self-esteem. Among young adolescents, smoking was not strongly related with self-esteem, self-efficacy, past worries or happiness. However, the authors report that fighting, was not related to self-esteem, but was associated with past worries and unhappiness regardless of gender, and, for girls especially, with negative self-efficacy.

Michael and Ben-Zur (2007) investigated the relationship between social and affective factors and the risk-taking behaviour of adolescents aged 16 to 18 years. The authors concluded that risk behaviour among female adolescents was related towards relationships with parents whilst the male adolescents were related mainly towards peer group influences. McRobbie argues that there is an emergence of a new sexual contract for young women involving what she terms as 'technologies'. Within the sphere of fashion and beauty emerges a post-feminist masquerade. There has been a shift of power from dominant paternalism to a feminised consumer culture whereby, women no longer need to please men or to be attractive for men, rather that they have greater freedoms and authority in everyday life within the consumer culture (McRobbie, (2007). Another description is that of the 'working girl' that is educated and accesses the labour market and which success can be measured by marriage, having children and having a successful career. This is a balancing act and provides a significant challenge in order to achieve a state of equilibrium. The 'phallic girl' whereby the young women mimics the privileges usually bestowed upon men, such as heavy drinking, and having sexual intercourse when she pleases. She is unlikely to seek the security of marriage and motherhood. The final description is the 'global girl' that is attributed mainly to the developing world and the counterpart the 'career girl' mainly in the west are seen as independent, hard-working, and motivated. These may be viewed as strategies of 'governmentality' and discourses of neoliberalism. We can contextualise that there are conflicting pressures and demands being placed upon young people in society, whilst on

one hand young people are encouraged to take ownership of their own health on the other they are blamed for their risk taking behaviour all this in the backdrop of actually trying to negotiate their way through maturity into adulthood. Compounding these difficulties are the inherent social inequalities that persist in relation to gender, social deprivation, ethnicity and other inequalities.

There is strong evidence that ethnic origin affects health in young people particularly in relation to substance misuse (Viner et al., 2006), mental health (Bhui et al., 2005) sexual health and teenage pregnancy (Jayakody et al., 2011) and obesity (Gordon-Larson et al., 2003). Asian and Black boys and Black and Asian girls were less likely to report drinking during a typical week when compared to White participants and Asian females were less likely to report smoking compared to White females (Rodham et al., 2005). There is evidence that suggests that across different cultures young people from low socio-economic areas are more likely to engage in risk behaviour irrespective of ethnic origin (Viner et al, 2006; Hanson and Chen, 2007). These behaviours can be partly attributed to structural factors leading to deprivation but can also be associated with religious and cultural norms (Viner et al., 2006).

Popay et al., (2003) in a UK study in the North West of England explored lay understandings of the causes of health inequalities in four study localities. The researchers used both qualitative and quantitative methods and analysed 777 questionnaires. Fifty one in-depth interviews were also conducted which included a purposive sample of people from diverse backgrounds, for example, younger people, lone parents and retired people. Nineteen of these participants also completed a second interview which focussed on health inequalities. In the survey questionnaires participants had little difficulty in explaining the cause of health inequalities and went beyond individual factors to explain wider causes of inequalities such as where people live. In contrast to this, participants involved in in-depth interviews from the more disadvantaged areas were reluctant to accept

inequalities; but went on to describe in detail factors such as material wealth and material advantage and how this directly affects health inequalities. Blaxter, (1997) in earlier research also acknowledged that lay perspectives showed a distinct reluctance for people from disadvantaged backgrounds to accept inequalities between areas and social groups. In part this may be attributed to a reluctance to be labelled and can also highlight how people reveal thoughts and beliefs about their own health and that of the community for which they belong.

Social deprivation has been associated with higher health risk behaviours. In a UK longitudinal study between 1999 and 2003, of children aged 11-12 years, girls and boys from more deprived areas were more likely to have tried smoking, to be overweight and to eat a high fat diet. A clear deprivation gradient emerged for each risk factor, indicating the linear nature of the relationship and a strong relationship between adolescents engaging in behaviours carrying a cancer risk and deprivation (Wardle et al., 2003). Savage and Egerton (1997) showed how class inequality can be facilitated after examining data from a National Child Development study. This highlighted that middle-class children were more likely to score higher than disadvantaged groups on ability testing. However, they point out that even after accounting for ability advantages, boys born in advantaged social positions had more resources than girls in maintaining their class advantages. This highlighted that social advantages occur as much with cultural capital as it does with material resources.

2.11. Young people and sunbed use

If we now explore the challenges that young people experience in the context of sunbed use we can draw upon other influences and challenges that they face. Globally the use of sunbeds is popular in Northern European countries and the United States and has also increased in popularity in hotter climates such as Australia, (Paul et al., 2004; and Paul et al., 2005). In Europe and North America 15%-35% of females and 5%-10% of males aged 15-30 have used a sunbed with a greater proportion of women reporting using sunbeds than men,

(Autier et al., 1994; Oliphant et al., 1994 and Rhainds et al., 1999). Lazovich and Forster (2005) found the mean percentage of young women using sunbeds was 43% and young men 18%. A United States survey of adolescents by Demko et al. (2003), found that 27% of females and 7% of males had used tanning beds repeatedly. Exposure in ages 10-24 may be important as most sunbed users are young women 16-30 years (Westerdahl et al., 2000; Oliver et al., 2007). Adolescence and early adulthood are the most sensitive age periods for the effects of sunburn and sun bed use on melanoma risk (Veieröd et al., 2003).

Epidemiological studies indicate an increased risk of malignant melanoma if a person has more than ten sessions in a solarium per year (Autier et al., 1991; Westerdahl et al., 1994). This presents a risk to young people in that they will be exposed to UV damage at a time when their bodies are most vulnerable as they mature.

Leading organisations have attempted to promote guidance in relation to the use of sunbeds by children. The European Society of Skin Cancer Prevention and the World Health Organisation (2003) state, that ultraviolet appliances should not be used for tanning or other non-medical purposes. They also recommend that children under 18 years of age should not use sunbeds. Contrary to this guidance, national surveys in Europe have indicated that 9-16% of people use tanning appliances (sunbeds), but usage among critical age groups can be much higher, 30% or more among urban teenagers and young adults (Westerdahl et al., 1994; Boldemann et al., 1997; 2001; Brandberg et al., 1998). In Sweden, Finland and Norway the heaviest users were young adults (20- 24 years old) and in Iceland approximately 50% of people in the 16-24 years old age group use sunbeds each year. Geller et al. (2002), in a large American study in Boston using a cross-sectional design, surveyed 10,000 girls and boys aged 12-18 years of age and found that 25 per cent of 14-18 year olds were using sunbeds. Jerkegren et al. (1999), reported on sunbed use in a group of

296 Swedish students in 1999; 17% of the females and 14% of the males used sunbeds at least once a month and 11% of the total had used a sunbed in the previous year. 14% of the females and 27% of the males said that they had never used a sunbed, which means that the majority of both sexes had used one. Lillquist et al. (1994), in a New York based survey analysed a sample from 2810 residents aged 17-74 taken from the New York state departments motor vehicle file. A total of 647 men and 917 women were involved. Women and younger respondents were more likely to use sunlamps, around a third thought that sunlamps protected them from solar UV emissions and the highest sunbed users were aged between 16-24 years (28%). A survey by Banks et al. (1992), showed that a third of girls between 12 and 19 and 16% boys older than 15yrs had used a salon at least once a month. Mermelstein and Riessenberg (1992) discovered that 18.5% of girls and 7.4% boys reported using a sunbed once. Boldeman et al. (2001), in a Swedish cross sectional questionnaire of 6000 adolescents aged 13-19yrs and 4000 adults 20-50yrs found that sunbed use was twice as common in females as in males (37% versus 17%); that of all sunbed users 66% males and 73% females were under 30 years of age; and in the previous 12 months 55% reported burning in the sun or from sunbeds. Sunbed use in a Danish cross-sectional study in 2007 involving 4303 respondents aged 15-59 yrs found that 29% of Danes aged 15-59 had used a sunbed in the previous 12 months and that 59% of females and 42% males aged between 15-19 had also used a sunbed in that period (Koster et al., 2009). This literature highlights increasing sunbed use amongst younger people in European and westernised countries.

In the United Kingdom anecdotal evidence of children using sunbeds led to identified over 48 per cent of children aged 10-11 years who expressed the desire to use a sunbed, with 7% actually having used them (Hamlet and Kennedy, 2004). This study utilised questionnaires and a show of hands. This method may be criticised but nevertheless the design achieved its purpose by confirming anecdotal evidence that children were indeed using sunbeds. In

2006, Merseyside and Cheshire Cancer Network (MCCN) participated in a school sports health educational event involving eight schools across the city, including mixed comprehensive schools, a girls-only private school, a Jewish school, and two mixed sports colleges. Pupils completed a sun safe survey questionnaire as part of an education session. The session aimed to raise awareness of the dangers of over exposure to ultraviolet light. The unpublished findings reported that nearly 60% of 13 to 15 year olds had used a sunbed. A further education session in a Roman Catholic all-girls' school in 2007 mirrored these findings. In this initiative a total of 688 girls aged 11 to 15 participated in a school led survey; this showed that around 60% of students claimed to use sunbeds, with a third of girls using them more than three times a week. Only 4% of 11-12 year olds were using sunbeds but 50% asserted that they would like to use them in the future. This highlighted the need for early prevention strategies targeting younger age groups who were contemplating sunbed use.

Mackay et al. (2007) also reported high use of sunbeds in 14-16 year olds in two Merseyside mixed urban schools following a questionnaire survey involving 499 pupils. Merseyside and Cheshire Cancer Network discussed the findings of their survey with cancer policy makers and a pledge to review children's use of sunbeds was made in the English Cancer Reform Strategy (DOH, 2007). Cancer Research UK (CRUK) are strong advocates for banning under 18s from using artificial tanning devices and have led health promotional campaigns around sun safety such as their *SunSmart* programme. In 2009 CRUK was commissioned by the National Cancer Action Team, supported by the Department of Health to conduct two quantitative studies. Thompson et al. (2010), aimed to examine the national prevalence of sun bed use amongst 11-17 year olds, to ascertain if there were geographical variations and to understand how they accessed sun beds. Over 3,101 young people participated in face to face interviews across England. The second study involved interviewing 6,209 young people in six cities, including Liverpool. Out of all the cities, sunbed use was most prevalent in Liverpool, significantly higher than all

the other cities except Sunderland. The prevalence of sunbed use in 15-17 year old girls in Liverpool was 49.7% and for Sunderland 45%, a third higher than the other cities. The findings confirmed that boys were also using sunbeds, with approximately one in five having used them in Liverpool. Young people also reported using sunbeds regularly with two out of five using them at least once a week. This confirmed the high use reported by Merseyside and Cheshire Cancer Network in 2006.

The sustainability of sunbed behaviour is reinforced by the attitudes and opinions of a group with whom a person interacts, (Hillhouse et al., 1997; Keesling et al., 1987 and Wichstrom, 1994). Parental tolerance or parents using sunbeds have been positively associated with likelihood of adolescents using sunbeds (Cokkinides et al., 2002; Geller et al., 2002; Robinson et al., 1997; Lazovich et al., 2005); Cokkinides et al., 2009). Having friends who tan and parents who allow them to use sunbeds as well as parents who also use sunbeds themselves, was associated with increased likelihood of sunbed use amongst adolescents (Cokkinideas et al., 2002; Geller et al., 2002; Stryker et al., 2004). Several studies reported adolescent use linked to parents' education or income (Cokkinides et al., 2002; Demko et al., 2003; Robinson et al., 1997), while. Boldeman et al., (1997) found no correlation between indoor tanning and socio-economic factors.

In a survey conducted in Boston, Massachusetts and Minneapolis, Minnesota, Stryker et al.(2004), found that modeling (e.g. maternal indoor tanning behaviour), gate keeping cognitions (e.g., maternal concern about their adolescent tanning indoors), and gate keeping behaviours (e.g. teenagers reporting that their parent would allow them to tan indoors) were more significantly associated with adolescent indoor tanning behaviour than were maternal cognitive variables (e.g., knowledge about tanning consequences). Hoerster et al.(2007), examined the influence of parents and peers on adolescent indoor tanning using a multi-city sample. Telephone interviews were

conducted with 5274 teen-parent pairs in the 100 largest US cities. Teenagers reporting that their parents allowed them to tan indoors was the strongest predictor of sunbed use (adjusted odds ratio (OR: 5.6), whereas parents' modelling (OR: 1.2), attitudes (OR: 1.1), and concern about teenagers tanning (OR: 1.9) were also significantly but less strongly associated. Teens thinking most of their peers like to be tanned (OR: 1.7) and teens who thought that a higher perceived percentage of peers tanned indoors (OR: 1.0) were also significantly more likely to use sunbeds. The authors conclude that Interventions targeting adolescent indoor tanning should address both family- and peer related factors. Few studies in the literature were identified that explored behavioural factors related to sunbed use. One New Zealand study (Calder and Aitken, 2008) used in depth interviews and focus group interviews to explore motivations and influences and to gain a deeper understanding of why young adults use sunbeds.

Nine men and nine women aged between 18-32 years were interviewed and the study concluded that the main factor for the adopted behaviour was a disassociation with the long-term consequences of their behaviour. A lack of knowledge of perceived skin cancer risk was also highlighted. No studies have been found that investigated the attitudes and behaviours of sun bed users below 16 years of age using in-depth interviews. This presents us with a gap in the evidence base. It cannot be assumed that younger age groups will be subject to the same influences as young adults. It is necessary to explore risky behaviour and how this affects children, moreover, it is important to understand the key motivations for this activity so that we may begin to address changes in behaviour.

In order to begin to plan interventions that reduce or prevent young people from using sunbeds we must first understand their motivations for using them. We need to listen to the benefits and influences they perceive, and we need to understand what young people tell us about the support they may need to stop

using sunbeds. Murray and Turner (2004) in a study in Merseyside used semi-structured interviews with 18 (nine male and nine female) sunbed users aged between 18 and 32 years. Interview transcripts underwent Interpretative phenomenological analysis, which resulted in the emergence of several key factors. These factors were, “gaining some colour, feeling better with a tan, putting it to the back of the mind, a tan as looking healthy; I wish I never started sunbeds as they are addictive, that they can’t be good for you”. Hillhouse et al. (1997), in a United States study found predictive factors such as being in control of behaviour and that sunbathing was relaxing. Other studies have also reported relaxation as a motive for using sunbeds (Boldeman et al., 1997; Beasley and Kittel, 1997; Hillhouse et al., 1996; Mawn and Fleischer, 1993; Zeller et al., 2006). Sunbed use was also found to be influenced by appearance, peers, and receiving positive comments about the desire for a particular suntan (Mawn and Fleischer, 1993; Lilquist et al., 1994; Keesling and Friedman, 1987).

Appearance can also have a profound effect upon behavioural intentions. Boldeman et al. (1997), reported more frequent use of tanning beds amongst subjects who thought of themselves as less attractive. A cross sectional survey using a self-administered questionnaire with 163 students in a mid-west United States University found that students believed that they looked healthier with a tan and felt better about themselves (Dennis et al., 2009). Adolescents reported use of tanning to improve appearance, or for the aesthetic appeal (Spencer and Amonette, 1995; Fiala et al., 1997; Beasley and Kittel, 1997; Boldeman et al., 1997; Hillhouse et al., 1997; 2000; Amir et al., 2000; Cafri et al., 2006; Brandberg et al., 1998; Knight et al., 2002; Cokkinides et al., 2002; Sjöberg et al., 2004). Dennis et al., (2009) also reported high use of tanning beds and proposed that this behaviour is driven by a strong desire to get a tan despite being aware of the hazards. Branstrom (2004) in a Swedish study concluded that the intention to use sunbeds was associated positively with attitudes towards being tanned. People with a tan are perceived as being healthier than

those without a tan (Broadstock et al., 1992; Beasley et al., 1997; Young and Walker, 1998; Amir et al., 2000). Banerjee et al., (2008) in a United States study completed a survey of 362 men and women aged 19-23 yrs. The findings showed that men perceived women with darker tans as more attractive than those with medium or light tans, but not vice versa. Men also perceived women with dark tans as being healthier and thinner. Gaining an attractive look was reported to be a main motive for getting a tan amongst college women (Keesling and Friedman, 1987).

There are several studies that report that sunbeds have a positive effect whereby sunbed users feel that they are more attractive (Knight et al., 2002; Geller et al., 2002; Lazovich et al., 2004a; Danhoff-Burg et al., 2006; Hoerster et al., 2007; Schneider and Kramer, 2010). Miller et al., (1990) also highlighted that as well as looking healthier in the social context, having a tan boosted self-esteem, with those with dark tans reporting that it was worth taking a risk with their health in order to have beautiful skin. These people also tended to associate therapeutic benefits with having a sunbed, (Mawn et al., 1993). The effect of appearance has been reported as a primary factor in the desire to tan (Robinson et al., 1997; Miller et al., 1990). In a psychological study women wanted to achieve their ideal beauty to protect close relationships (Fiala et al., 1997).

Images in society may account for “the ideal” amongst males and females. Mass media bombards images of beautiful thin women (Garner et al., 1980) and with men who are lean and muscularity (Cohane, 2001). Tiggerman and Pickering (1996) found that women’s dissatisfaction with their body correlated with the amount of time spent on watching soap operas. Thornton and Moore (1993) discuss social comparison theory whereby individuals compare their own opinions and abilities with those of other individuals. They found that when males and females compared themselves to professional models they scored lower in self-rating scores for physical attractiveness than in controls.

Magazines portraying ideal body types often show tanned bodies. Having a tan was found to be a major factor in attractiveness (Keesling and Friedman, 1987; Miller et al., 1990; Broadstock et al., 1992; Wichstrom, 1994; Leary et al., 1997). Teenagers may ignore what they know about skin damage caused by UV because they strive to look like tanned actors and models (Gorgos, 2002). Cafri et al. (2006), carried out a cross sectional survey of 269 female undergraduate psychology students with a history of sunbathing or salon to assess attitudes, intentions and behaviours. They found that the media exerted its influence on UV exposure indirectly through appearance and reasons for tanning. Media influences create a greater value attached to a tanned appearance. The authors suggested that a programme that aims to reduce the media influence should reduce the positive valuation of a tanned appearance, which should in theory reduce risky UV exposure behaviours. Jackson & Aitken (2000) also found a significant association between media influence and the measure of tanned appearance.

2.12. Psychological effects

Another variable that has been associated with risk behaviour is sensation seeking, whereby the individual seeks, new novel and intense experiences and sensations (Zuckerman, 1994). Sensation seekers engage in activities that are exciting to them (Greene et al., 2000). Armes (2002) hypothesised that tanning was a passive behaviour, but it was in fact strongly linked to higher levels of sensation seeking behaviour and thrill seeking. Banerjee et al. (2009), studied sensation seeking, association with friends who use tanning beds, attitudes toward tanning and tanning bed use intentions in 892 US university students under 25years. The authors hypothesize that tanning is influenced more by peers with similar sensation-seeking traits; moreover, they suggested that peer attitudes may also reaffirm positive attitudes to tanning. Factors related to the teenagers' parents and peers also have been shown to predict this age-group's indoor tanning use.

A United States survey by Bagdasarov et al. (2008), measured tanning behaviour amongst 898 college students utilising a problem behaviour theory which was derived from a social psychological framework (Jessor and Jessor, 1977). The study analysed the interactions between, personality, environment and behaviour. They found no association between self-esteem and tanning bed use, but a strong correlation between positive body image and tanning use. Sensation seeking and tanning bed tendency had a positive association for girls but not boys. This means that higher levels of sensation seeking in girls were more likely to increase intention to use a sunbed.

The media influences how dissatisfied people are with their bodies (Groesz et al., 2002). Body image according to Cash et al. (1994), is influenced by two key factors: body image investment and body image evaluation. Investment relates to the amount of importance that is placed upon the cognitive and behavioural values people assign to their body and appearance. Body image evaluation, however, refers to the degree of satisfaction or dissatisfaction with body or appearance. Hargreaves and Tiggermann (2006) in an Australian qualitative study of 28 boys found that in general boys did not worry about their appearance unless trying to impress girls and had a reduced level of investment in body image. However, boys did show dissatisfaction with height and skin complexion, with muscularity being the biggest issue. Overall boys were reluctant to admit body image concerns. Girls and women were more likely to invest in their body image more than boys and men (Brown et al., 1990) and they had lower levels of satisfaction with their body image than boys or men (Thomas et al., 2000). A representative sample of 4020 Swedish adolescents using a quantitative questionnaire was conducted (response rate 65%), asking about habits in relation to sunbathing, their attitudes, knowledge, self-image and risks. Girls were less satisfied with their body image than boys and least satisfied girls used sunbeds the most. The reason cited for using sunbeds were appearance, warmth and comforting with the best predictor of tanning intention relating to

belief about body image (Brandberg et al., 1998; Hillhouse et al., 2000; Cokkininedis et al., 2002). Hillhouse et al. (2002), found that beliefs about appearance were a stronger predictor of tanning use than beliefs about health. Brandberg et al. (1998), found that people with lower body satisfaction self-image, sunbathed more than those with higher satisfaction.

Dissatisfaction with appearance can lead to more serious and pathological distress and may impede social or occupational or vocational functions. This occurs when an individual is profoundly preoccupied or dissatisfied with the way they look. Philips et al. (2006), used a baseline survey questionnaire for individuals with body dysmorphic disorder and also used a modified Yale Brown obsessive compulsive disorder Scale. Of the 200 participants 25% of 200 subjects reported tanning body dysmorphic disorder, 76% had described suicidal ideation, and 26% had attempted suicide. Body dysmorphic disorder is a common psychiatric disorder estimated to affect 0.7-1.1% of the general population, most commonly focused on skin and hair.

Several studies have shown associations between sunbed use and other types of risk taking and addictive behaviours such as smoking and substance abuse (Lazovich et al., 2004a; Wartham et al., 2005). Wartham and colleagues demonstrated a significant association between the addictive behavioural characteristics of those who use substances with those who frequently use sunbeds (Feldman et al., 2004). Zeller et al., (2006) also found that factors such as age and frequency of use correlated with difficulty quitting tanning. Kaur et al. (2006), linked UV light and pain relief, which may provide a physiological basis for dependence on opioids with tanning behaviour. The research involved the use of an opioid antagonist to induce symptoms of withdrawal in frequent tanners by use of a blockade. Symptoms such as nausea and irritation were not experienced in the infrequent tanners in this study half of frequent tanners experienced the symptoms suggesting that sunbeds may be addictive. This study was very small and only included eight participants. Moreover, some

studies have linked a biochemical mechanism for tanning dependence in respect of the release of endorphins (Cui,R et al., 2007).

The American Psychiatric Association (2000) reported that tanning may result in a form of obsessive compulsive disorder. Similarities have between tanning dependence and substance abuse has been identified by some authors (Demko et al., 2003; Lazovich et al., 2004a; Boldeman et al., 1997 and Boldeman et al., 2003). Wartham et al., (2005) found that young people using two or three substances were more likely to be indoor tanners. Zeller et al. (2006), in a US cross sectional telephone survey involving 1275 adolescents, found that around 20% of 14-17 year olds reported that they would have difficulty stopping using a sunbed. The authors suggest that difficulty in quitting is potentially consistent with other addictive behaviours.

There are other psychological and cognitive behaviour disorders such as seasonal affective disorder which may stimulate sunbed use. Hillhouse et al. (2005) theorized that frequent indoor UV tanners may be influenced by affective factors such as seasonal affective disorder and examined this hypothesis and tested with a questionnaire to 126 randomly selected female college undergraduates in the United States. Although there was a small sample the results indicated a positive relationship between frequent indoor UV tanning and seasonal affective disorder (SAD) symptoms in undergraduate women. There are clear links between psychological morbidity and sunbed use. Improved self-esteem, poor perception of body image, addictive tendencies, sensation seeking and conforming to social ideals appear to be key motivators for sunbed use. Physical rewards also appear to play some part in the addictive nature of sunbed use. There is little in the literature that explores these motivations in adolescents and non that explore in-depth if these factors also influence young people aged 14-16 years to use sunbeds.

2.13. Behaviour theory and interventions

There are numerous models and theories relating to health behavior and decision making. Many were developed for health education, public health and health promotion research. Theories can provide an explanation about how an intervention works. Social cognitive models are theoretical approaches to understanding health-related behaviour based on the assumptions that attitudes and beliefs are major determinants of behaviour. Scott et al., (2013) suggest that there are very few published studies reporting on the effectiveness of health behaviour theories in predicting indoor tanning intentions and behaviour, and conclude that most published research highlights a single construct, or small selection of constructs, rather than fitting a complete health behaviour theory to indoor-tanning.

The **health action model** identifies the social, psychological and environmental influences and focusses on two central tenets: The systems that affect behavioural intention, and the factors that determine the likelihood of the behavior being carried out. The model developed by Tones was further refined by Tones and Tilford (1994) and introduced another element, self-esteem, which is seen as the key motivation for changing behaviour. Self-esteem encompasses appearance, intelligence and physical skills and the health action model is based on the premise that people with higher levels of self-esteem and positive self-concepts are likely to feel confident about themselves and as a result will have the ability to carry through a resolve to change their behaviour. However, people with lower levels of self-esteem are likely to believe that they have less control over their fate and therefore, are unlikely to respond to a health promotion messages.

The **health belief model (HBM)** (Rosenstock, 1974) is probably the most frequently used model to explain health related decision making. The model theorizes that people's beliefs about whether or not they are at risk of a health problem or disease, and their perceptions of the benefits of taking action to

avoid it, influence their readiness to take action. This model does not, however, take account of the social influences on behaviour. Using the HBM, Greene and Brinn (2003) found that perceived susceptibility and perceived threat were significant predictors of indoor tanning intentions and behaviour. The belief that tanning is safer indoors than outdoors has also been shown to predict indoor tanning (Gordon et al., 2012).

The **theory of reasoned action and the theory of planned behaviour** attempt to take social influences into account (Ajzen & Fishbein, 1980). The latter theory was developed through investigating the relationship between attitudes and behaviour, and suggests that behavioural intention will precede and predict behaviour. A central tenet in the theory of planned behaviour is the intention for the individual to perform certain behaviour. This is an indication of how much effort someone will assert in order to carry out that behaviour. The greater the desire to perform such behaviours, the more likely it is for the behaviour to be adopted. This assumes that the behaviour itself can be subject to the will of the individual, in other words, that an individual can decide at will to perform or not perform the behaviour. There are several influences on a person's behaviour, including his/her attitude, his/ her perception of the social pressure to engage in the behaviour (i.e. subjective norm) and his/ her perception of control over performing the behaviour (Ajzen and Fishbein, 1980). Hillhouse et al., (2000) in a US study 197 college students, measured self-reported attitudes, subjective norms, behavioural control and intentions. The study confirmed the usefulness of the theory of planned behaviour when they applied the concepts of self-monitoring with appearance motivation. These factors in the theory of planned behaviour proved effective at predicting sunbed salon behavioural intentions. The results suggested that appearance-related interventions might prove effective in reducing young people's tendencies to use sunbeds. The study revealed that the best predictor of the tendency to use sunbeds was the intention to use a sunbed, which was influenced by attitudes towards obtaining a tan, subject norms and behavioural control. Those who self-monitored more

when using sunbeds were more likely to listen to the views and opinions of significant others than those who were low self-monitors. The authors suggest that self-monitoring status would be useful when targeting health promotion messages. There is also, however, the cultural context that needs to be taken into account, for example, the external influences on behaviour, the availability and access of sunbeds, affordability and the actions of those encouraging use and discouraging use.

The **theory of problem behaviour** presented by Jessor (1977), postulates that adolescent problem behaviours could be better understood if the behaviour was considered as a syndrome that is part of adolescent life. This may include risk behaviours related to drugs, alcohol, sexual promiscuity, sensation seeking such as driving fast cars and juvenile delinquency. These all form part of perceived norms and moreover, adolescents may view participation in such activity as an accomplishment of age-typical goals, maturity and peer group identity (Jessor, 1977). The literature shows tendencies for adolescents involved in one type of risk taking behaviour to also be involved in other forms of risk behaviour for example, adolescents who smoke cigarettes are also likely to use illicit drugs and use alcohol (Escobedo et al, 1997).

Intervention studies show an increase in knowledge of skin cancer but often show little effect on behavioural change. A study by Memelstein and Riesenber (1992), delivered presentations to young people aged 13 to 15 years of age in a single intervention. Knowledge of risks associated with exposure to natural UV light increased but with no intention to change in behaviour. Similar findings were identified in Kristjansson et al. (2003). This study showed an increase in knowledge but no intention to change behaviour. Similar results were found by Hughes et al. (1993), where knowledge of skin protection increased in 12 to 16 year olds but there was no difference in their reported behaviour. We know from the literature that teenagers of all ages have

a general awareness of the link between UV radiation and skin damage use (Beasley and Kittel, 1997; Kristjansson et al., 2003).

Another suggested strategy is making healthier alternatives more attractive than tanning (Hillhouse and Turussi, 2002). Beasley and Kittel (1997) in a US study found that education about UV exposure had little effect on the desire of tanning bed users to continue using sunbeds despite knowing the health risks.

Moreover, Government regulations and warnings also had little effect on users using a sunbed and the personal benefits were perceived to outweigh potential side-effects.

Livingston et al., (2003) conducted a study of 78,000 Australian children aged 7-12 years of age in 1993, 1996 and 1999. The study concluded that even a high knowledge of the risks of UV and sun protection behaviour did not lead to a change in behaviour or modify attitudes. This may be relevant to the question of why some people use sunbeds prior to going on holidays. There seems to be a belief that a sunbed will provide a base tan (Diffey, 1986; Knight et al., 2002). A study in a US study found that some adolescents believed that a tan acquired using a sunbed before a holiday would prevent subsequent sunburn, and acted as a justification for sunbed use (Cokkinides et al., 2002). Levine et al., (2005) challenge the basis for this belief, and point out that exposure to artificial UV in preparation for a holiday is counterproductive and may expose the individual to more UV damage. Sunbed use may also make users less likely to take adequate protective measures whilst on holiday because they think that the pre-holiday exposure gives them some protection. According to Murray and Turner (2004) engagement in behaviours that are considered to be risky or unhealthy are likely to relate to common tendencies to underestimate personal risk.

Research by Baker (2002) highlighted that the preoccupation with a suntan far outweighs any concerns about skin cancer and malignant melanoma. Feldman et al. (2001) found that respondents did not fear skin cancer to the same extent

as other cancers. Lamanna (2004) suggests that children and teens heavily discount the risk of death from skin cancer. These studies show that an increased knowledge or awareness does not have a significant impact upon behaviour change: interventions might be more effective if focussed on changing attitudes and behaviour, rather than knowledge alone.

It is important to understand what types of intervention have worked or not worked and why in order to try to influence hazardous sunbed use amongst young people. However, there is a scarcity of sunbed interventional studies or studies that measure the impact of prevention involving young people. Most studies only examined the effect of the intervention amongst a restricted sample of college students, who are likely to come from more privileged backgrounds than their counterparts living in more disadvantaged circumstances. The following studies demonstrated a significant reduction in sunbed use after interventions but did not involve young people under-18 years of age, (Hillhouse et al., 1999; Hillhouse et al., 2002; Green and Brin, 2003; Gibbons et al., 2005; Mahler et al., 2005; Hillhouse et al., 2008; Turrisi et al., 2008; Abar et al., 2010; Hillhouse et al., 2010).

Gibbons et al.,(2005) in an American experimental study tested UV photography to show the extent of damage to a group of college students. The study concluded that those students who viewed their own photograph reduced their sunbed use significantly up to 4 weeks later. Numbers were small in the study and it was reliant on self-reporting. It could be speculated that this type of intervention might be effective with younger people as one motivation for sunbed use amongst young people is to improve their appearance and future damage could deter or curtail sunbed use. Some empirical studies do indeed suggest that focussing on appearance-related effects of sunbeds may provide a more effective way of sustaining long term behaviour change (Hillhouse et al., 2002; 2008; Mahler et al., 2007; Moyer, 2012). These studies did not involve younger age groups and would therefore highlight the importance of more targeted age

appropriate interventional studies. From my literature review, the only intervention study using a randomised control trial involving younger people was a Danish study in which 33 schools and over 2,300 pupils aged 14-18 years participated. Sixteen schools utilised a sunbed awareness activity whilst seventeen were used as controls. Pupils interacted with an e-magazine in the intervention group. A significant reduction in sunbed use was observed following a school-based intervention on sunbeds for this age group. It did not affect attitudes to sunbed or intention to use sunbeds (Aarestrup et al., 2014).

2.14. Conclusion

Skin cancer is a major problem in the western world. Depletion of the ozone layer and a legacy of poor sun protection have led to increases in skin cancer incidence. Compounding this problem is the accumulating effect of skin damage that has arisen because of exposure to artificial ultra violet emissions and current sun tanning behaviour. Cancer incidence is increasing in western countries. Increasing evidence of the carcinogenic effect of sunbeds has led to scientists categorised artificial UV as carcinogenic to humans and therefore tighter controls are necessary to ensure that people are discouraged from using sunbeds. The use of sunbeds has increased and young females in particular are more likely to use them often hazardously. There is growing evidence that “ever” exposure to sunbeds is associated with an increased risk of developing malignant melanoma. The extent of sunbed use in young people is now better known and they are being used by under-18s and young adults. Yet poor regulation, poor advice and limited legislation have meant that young people are increasing their risk of developing skin cancer. Studies have purported high use of sunbeds in Liverpool and in other UK cities. This has prompted the introduction of legislation to ban under-18s from using sunbeds. However, little is known about the effectiveness of sunbed legislation on under-18s, and how this will impact on young people’s access to sunbeds and whether their attitude and behaviour will change as a result. There is limited qualitative research that explores why young people use sunbeds, most research studies are superficial

surveys and lack depth. There are no in-depth qualitative studies that explore why 14 to 16 year olds use sunbeds.

The introduction of legislation in April 2011 banning under-18s from using sunbeds may mean that this research will provide valuable insight into motivations for sunbed use, without the influence of legislation so in effect this research will plug a gap in the evidence base. The research should inform us of the attitudes towards sunbed legislation and the impact that this may have on young people's behaviours as a result of the legislation. The development of a prevention strategy will be paramount when affecting behavioural change but behaviour needs to be understood as young people consider the choices they make around their own health.

The high percentage of sunbed users under 18 years of age presents a potential public health problem in Liverpool and in other cities across the United Kingdom in respect of high prevalence of sunbed use. Children are using sunbeds more than the recommended adult doses, in a largely unregulated industry. Despite fairly good awareness of the risk of skin cancer amongst adolescents there is very poor understanding of the motivations or reasons why children use sunbeds; and no studies explore this risk taking behaviour in children and adolescents in depth, or what it is like for them to experience the phenomena. Therefore, an exploration of adolescents risk behaviour associated with sunbed activity is warranted, an in-depth qualitative approach should be justified because it is likely to explore these issues. Moreover, there has been little research in this field of research that involves younger adolescents.

Chapter 3. Methods

3.1. Introduction

This chapter outlines the interpretive approach adopted for this thesis concerning the attitudes and motivations of young people using sunbeds hazardously. The philosophical orientation, methodological approach and the rationale for the methods chosen to conduct the research will be explored. The literature review concluded that there has been a scarcity of qualitative literature that explored what is understood about young people's motivations to use sunbeds and what it is like for them to experience sunbed use. In order to understand this and to learn about the lived experience of young people using sunbeds a qualitative approach was taken. The approach taken is explained in detail below, before going on to describe the design and methods adopted and the conduct of the data analysis.

The research objectives were:

1. To carry out a literature review of UVA exposure, sunbed use and consequences for young people and adults.
2. To explore young people's experiences and motivations for using sunbeds.
3. To understand young people's perceptions of their own health as a consequence of using sunbeds.
4. To explore how sunbeds make young people feel about their self-image and how they think others perceive them.
5. To support the development of a prevention strategy informed by the evidence from the qualitative studies.

Objective 1 was be met by the conduct of a literature review, employing the methods and protocols outlined in the following chapter.

Objectives 2, 3, and 4 were met by qualitative research with young people aged 14 to 16 in schools in the North West of England. A total of 8 focus

groups were carried out, together with 22 face-to-face interviews, and field diaries.

Objective 5 was be met by interactive engagement with a range of stakeholders to develop an appropriate prevention strategy.

3.2. My orientation to the research

The researcher's philosophical position, political perspectives and interests will affect the research question and the methodological approach that is used. Collins (1992, p. 182) suggests that a common occurrence, and perhaps one of the most fundamental criticisms of qualitative research, is the risk of one-sidedness on the part of the researcher, who may become biased by their assumptions, world view and prejudices. However, this may also be true of quantitative researchers who are not immune from bias. Researchers will have their own subjective views, but this could be argued to be no different between qualitative and quantitative approaches. Wainright (1997) reflects on how quantitative research is not impervious to data manipulation by researchers.

The researcher needs to be open and transparent about their research interests and world views from the outset of the research process. This may be more difficult to articulate because the researcher can learn a great deal from the research process along a continuum. Doctoral students do not start their studies as the finished article and even when they graduate real academic learning may only just be starting. It is my belief that the doctoral research process has challenged my assumptions and preconceived ideas as well as my basic ideologies. My own journey through the process has redefined my views, my stance and in particular my openness to my potential biases. My original motivations to explore the attitudes of sunbed use by young people could be seen as a crusade to stop sunbed use. My initial motives arose from my career, firstly as a nurse, a role which is often viewed as biomedical and paternalistic and is fraught with ethical issues like beneficence and non-maleficence and

secondly, in a health promotion role within a Cancer Network. Local health awareness sessions in secondary schools began to highlight issues of frequent and hazardous sunbed use which was explained to me by pupils in schools in 2006 when I was supporting Liverpool Health Promotion service with health promotion activity. To some extent I had already made assumptions that sunbeds were dangerous and this cast doubt on any perceived benefits to young sunbed users. The second part of my research title positions my stance on the subject, "the development of a prevention strategy". It could be argued that the fact that I was developing a prevention strategy had already assigned my stance on the subject and therefore, there was no room for openness and impartiality. This could be seen as having a major impact on my ability to be exploratory and enquiring and to tease out genuine experience and views from participants in the research. My frank and honest consideration of my position on this subject has helped me understand and reflect upon my role within the research process. During the last five years my attitude has changed from a fixed unmoveable and passionate view about protecting young people from the hazard of sunbeds. It was the research process and my experience participating in the life views of the interviewees that has shifted me to a place of openness, where anything is possible because the experience and views of young people was the most important part of the research. My views on sunbeds have not changed but my openness to embracing the possibility that young people value sunbeds has; and moreover, that in some cases they have become dependent upon them.

To summarise, I recognised that my approach would be subjective and that I could not necessary distance myself from the subject matter, what was being observed and from inherent biases which are reflected in my interest, work status, skills and values and are likely to be value-laden. Subjectivists argue that the researcher should be encouraged to become actively involved. "Phenomenologists attempt to minimise the distance between the researcher and that which is being researched" (Hussey and Hussey 1997, p. 49).

I chose to conduct qualitative research. There are fundamental differences between qualitative and quantitative research. Quantitative methods are often seen as objective, where data is controlled and measured and whereby researchers seek to understand the causal determination, prediction and generalisation of the findings. In contrast qualitative research is viewed as attempting to gain understanding and meaning and centres on the changing dynamic of reality, obtained within the context of its natural occurrence; taking a more holistic approach and utilising analysing documents experiences and case histories. Strauss and Corbin, (1990, p. 17) broadly define qualitative research as “any kind of research that produces findings not arrived by means of statistical procedures or other means of quantification.”

3.3. The theoretical and analytical approach adopted

I considered a number of theories when deciding on my specific approach to the current research. The key elements of these orientations are summarised in (Figure 3). These methodologies overlapped to some extent with some having closer links than others. It is their emphasis and focus that distinguishes them from each other. Given this overlap, my selection of chosen orientation was made at a more intuitive level. I concluded that an interpretive approach with faithfulness towards phenomenology aligned best with my research. The following explains the rationale of my thinking in relation to grounded theory, ethnography, symbolic interactionism and phenomenology.

Figure 3: Summary of potential theoretical orientations

Theoretical Orientation	Summary
Pragmatism	Importance is placed on the ‘practical’ rather than the ‘abstract’. The value of any theory can only be judged by how well it can be applied in relation to practical needs and how well it functions in practice (Denscome, 2007).
Ethnomethodology	Focuses on how members ‘do’ social life, aiming to document how they construct and sustain social objects (Denzin & Lincoln, 2011).

Symbolic Interactionism	Biased on three premises (Flick, 2009): <ul style="list-style-type: none"> I. how we act towards ‘things’ depend on the meaning we ascribe them II. meanings are derived from social interactions between people III. these meanings are adjusted through an interpretive process
Grounded theory	(Glaser, 2005) The goal of the grounded theory approach is to generate a theory that explains how an aspect of the social world “works”. The goal is to develop a theory that emerges from and is therefore connected to the very reality that the theory is developed to explain.
Social constructionism	Stipulates that knowledge is not found or discovered but made. We develop concepts, models and schemas to make sense of experience, continually testing these constructions in the light of new information and experiences (Denzin & Lincoln, 2011).
Critical Realism	Underlined by the beliefs that (Bygstad & Munkvold, 2011): <ul style="list-style-type: none"> I. The ‘real world’ exists independent of our knowledge of it. II. we then interpret this reality III. some interpretations reflect reality better than others; there are logical ways to assess the validity of the interpretation
Phenomenology	Concerned with understanding and describing how things are subjectively experienced and interpreted by those involved (Denscome, 2007).

Grounded theory is a method of qualitative inquiry that aims to generate theory in a systematic way from empirical qualitative data (Glaser, 2005). The researcher begins with no pre-existing theory, hypothesis, or expectation of findings but rather permits a theory to emerge directly from the data, in other words the theory is grounded in the data. The aim is to describe adequately the theoretical conceptualisations of the findings. In general, individual cases are selected purposefully and not randomly. One data collection episode (usually an interview) builds on the prior collections and the conceptualisations that have been developed up to that point. The researcher gathers “thick” data and makes

the meanings of the participants explicit. The researcher continues this process until reaching “saturation” (When the researcher is not learning anything new). Using grounded theory approach did not seem like the most appropriate methodology for my research because I was not attempting to create a theory, but rather I was trying to understand the nuances and experiences from my participants. My approach was not to bracket prior assumptions but to be conscious of these biases. My orientation was therefore closer to the phenomenology perspective.

Within ethnography, researchers will accept the criticism that all observers are also participants who also reflect, interpret and give meaning to events. They will subject all data to systematic enquiry wherever doubts about explanations for events exist until they have achieved ‘understanding’ (Van Maanen, 1996). Frequently ethnographers conduct their research in the field in communities or groups, observing subjects in their everyday lives, either overtly or covertly, for extended periods of time watching what happens, listening to what is said, asking questions. ‘In fact collecting whatever data are available to throw light on issues with which he or she is concerned’ (Hammersly & Atkinson 1983, p.2). ‘The social research style that emphasises encountering alien worlds and making sense of them is called ethnography or ‘folk description’. Ethnographers set out to show how social action in one world makes sense from the point of view of another’ (Agar 1986, p.12).

The goals of both grounded theorists and ethnographic researchers are to conduct an in-depth study about the phenomenon as it occurs normally in real life (Streubert & Carpenter, 1999). Despite these similarities there are some primary differences. Whereas, the grounded theorist aims to generate theory that describes basic psychosocial phenomena and to understand how human beings use social interaction to define their reality (Chenitz & Swanson, 1986; Glaser & Strauss, 1967; Hutchinson, 1986), the ethnographers’ primary goal is to provide a thick description of the cultural phenomenon under study. The

grounded theory researcher attempts to provide a substantive theory that explains the patterns of the phenomenon under study whilst the ethnographic researcher provides a rich description of the cultural meaning of the phenomenon. My approach was less aligned to ethnographical approach mainly because my research was not conducted in the field and instead it was conducted outside the social setting in which the phenomenon occurs i.e. it was conducted in schools and not sunbed salons.

Symbolic interactionism focuses on how individuals communicate with one another, the basis of that communication, and the consequences and results of interactions. The approach focuses on everyday interactions and how people perceive and define events. The behaviours are to some extent part of the interaction and the interaction may affect people's behaviour as individuals will be constantly interpreting each interaction. Individuals will interpret situations differently; this is why two people who are part of the same interaction may explain what happened differently. Herbert Blumer (1969) set out three basic premises of the perspective:

- "Humans act toward things on the basis of the meanings they ascribe to those things."
- "The meaning of such things is derived from, or arises out of, the social interaction that one has with others and the society."
- "These meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he/she encounters."

Society is seen as socially constructed through human interpretations. People interpret one another's behavior and it is these interpretations that form the social bond and social understanding. The theory consists of the principles of language, thought and meaning. Thus individuals act according to the meanings they give to things or people, language enables people to negotiate meaning through symbols, and thought modifies the interpretation of meaning.

Phenomenology differs from ethnography and symbolic interactionism because phenomenology makes a distinction between appearance and essence. Unlike symbolic interactionism and ethnography, phenomenology does not produce empirical or theoretical observations or accounts. "Instead, it offers accounts of experienced space, time, body, and human relation as we live them" (van Manen, 1990. P184). Symbolic interactionism is also aligned as an approach to the current research. Particularly in respect of the use of language, the interpretation of the language and the meanings and interactions of the participants.

I chose to adopt an interpretivist approach, specifically the phenomenological approach as expounded by van Manen (1990, 1997) and translated into practice by Edwards and Tichen (2003). I cannot claim to have implemented the phenomenological approach in full, but rather to have drawn on the ideas and principles of the approach in developing and conducting the study. This section explains the evolution of my thinking.

Gray (2009) discusses the approaches to research as involving either deductive or inductive reasoning (i.e. beginning with or generating theory). In my study an inductive approach was taken I did not have a fully formed hypothesis to prove or disprove. Inductive-qualitative researchers analyse their data inductively. They do not set out to find data to prove or disprove hypotheses that they hold prior to their study. Their theories come from the "bottom up" rather than the "top down". The qualitative researcher's theory is grounded in the data and emerges, rather than being like a puzzle that exists and can be solved.

The theoretical stance of phenomenology is one which emphasises the meaning and discovery of the phenomena - in this case the attitudes and risk taking behaviours amongst young people who are regular users of sunbeds - leading to the development of new knowledge. Understanding and context is created by

the subjects, in other words, those being studied. Robson (2002) suggests that there are only three possible forms of study: exploratory, descriptive and explanatory. However, Maxwell (1996) added a fourth; interpretivist. This last approach will also influence the proposed research when exploring the views of the research participants and their attitudes and risk taking behaviours. Data are constructed from the viewpoint of the individual rather than being imposed by the researcher. The phenomenological approach provides a rich and complete description of human experiences and meanings. Phenomenologists suggest that we should not study social phenomena as if they are already fixed and understood, rather, we should start from the point of the individuals being researched and begin to understand their meanings and social context through their lived experience. This may be difficult to execute however, because our own understanding and experience cannot be ignored. We already have opinions and beliefs and we may have already made assumptions. For example, my motivation to pursue this research on young people was because of my experience and knowledge of the subject, my interaction with young people in school education sessions which led me to form impressions about young people's hazardous use of sunbeds. This was not a single situation but made up of a series of historical experiences that I had locked in my memory bank. No process was undertaken; these impressions influenced my initial desire to want to support legislation to ban sunbeds for under-18s. Through a reflexive process and iterative explorations of the data and understanding how using sunbeds feels for young people, my once concrete stance on sunbed bans has now been turned upside down and I am now less certain about how I feel about sunbed legislation. To some extent my uncertainty may provide evidence that I have achieved the "bias balance". In other words, I have moved from a point of absolutism to one of openness; gained through the process of research.

There are different orientations of phenomenology. Brentano (1838 - 1917), provided the basis for phenomenology and was known as the 'father of phenomenology'. Brentano first stressed the 'intentional nature of

consciousness' or the 'internal experience of being conscious of something' (Holloway, 1997, p. 117). The German philosopher who really established the contemporary phenomenology was a student of Brentano, Edmund Husserl (1859 - 1938). Husserl and his student Martin Heidegger (1889 - 1976), introduced the concept of "Being there" and the dialogue between a person and their world. Husserl described phenomenology as the study of human phenomena without considering questions of their causes, their objective reality, or even their appearances. The aim of phenomenology is to study the phenomena including how it is experienced, lived and valued, consciously and cognitively. A key concept is inter-subjectivity: Husserl believed that we have to bracket out our beliefs and assumptions and we should suspend our belief in the objective world. This is important as a potential bias placed on the interview techniques and the interpretation of the results within this type of approach could be influenced by preconceived ideas or judgments.

Alfred Schutz (1899 - 1956), went further than this, describing inter-subjectivity as, where the actors involved construct their life world by discovering what is going on in another person's mind through consciousness and communication. He suggested that there are no hard facts, only interpretations; and that the facts are inter-subjectively constructed. Schutz (1954) felt that the actors constructed social phenomena based upon free will and the sharing of motives, relationships and human expectations. Schutz argues that concepts should emerge in the same way as individuals adjust to the plethora of idiosyncrasies and insights that make up the human experience. He describes how the social scientist acts like the disinterested observer. The interaction of the researcher is extremely important; the role of the disinterested observer enabling prior knowledge or judgements to be bracketed out. Schutz also refers to the process of adaptation and learning from the experience of the social phenomena. The research process however, is yet another interaction that the observed may use either for reflection, justification and self-analysis. It would not be the intention of the phenomenological researcher to impart judgement, knowledge or

personal views, but the act of research itself cannot be subtracted easily from the life world experience of the observed. In a sense research is part of the social experience. Moreover, from a hermeneutic phenomenological stance, bracketing is viewed as impossible and the researcher's bias and assumptions are seen as part of the interpretive process, so that the researcher can revisit their own position and how this relates to issues being researched (Annells, 1996).

Philosophical assumptions and researchers' beliefs and attitudes are invariably connected and embedded in how we think. This involves understanding the researcher's stance toward ontology (the nature of reality) and epistemology (how the researcher knows what he or she knows). There are conceptual differences between ontology (the nature of reality) and epistemology (the views of what is determined as legitimate knowledge and truth). Guba and Lincoln (1994) claim that epistemology addresses fundamental questions about how we know what we know? What can account as legitimate knowledge? What is truth? The theoretical system which is grounded in philosophical principles is known in the sociological literature as methodology, with each methodology having its own set of systems and theories and preferred tools and techniques used in scientific inquiry. There are fundamental differences between qualitative and quantitative paradigms in respect of ontology and epistemology. Moreover, there are also differences and similarities that exist between ontology and epistemology in respect of phenomenology and hermeneutic phenomenology. Whilst Husserl focussed more on the epistemological question about the relationship between the object of the study and the knower, Heidegger focussed more on the ontological question of the nature of reality and how it exists in the world. Heidegger saw bracketing as impossible as he did not believe that one could disconnect with the relationship between the phenomena being studied and the researcher's individual historical experience. This view can be supported when we think about how the researcher provides his or her

personal reflections on the topic or on their observations during the gathering and interpretation of the research data.

The work of Husserl highlighted the importance of focussing on the individual's understanding of their experience. Merleau-Ponty (1945), Satre (1943) and Heidegger (1927) developed this concept further. They suggested that people exist in a lived world showing how an individual involvement in their own experiences affects those experiences. The process of hermeneutics is an iterative one based on the concept of the hermeneutic circle, visiting and revisiting the data and looking at both the broader aspects of the data as well as the individual parts. Heidegger (1927) developed the concept and saw the hermeneutic process as cycles of self-reference. Gadamer (1975) conceptualised this as an iterative process and suggested that the researcher will bring some assumptions to the text.

For the purpose of this thesis research, the ideas and principles of hermeneutic phenomenology (van Manen (1990) have been drawn upon to investigate the experiences and views of young people who use sunbeds regularly. The fundamental reason for my orientation to hermeneutic phenomenology is with respect to my belief that bracketing out assumptions, previous knowledge and experience is unrealistic. However, the researcher should be conscious of this. Acknowledging that I had preconceived ideas and assumptions about the sunbed use and young people allowed me as the researcher to become more conscious of my own role within gathering the data; and with the interpretation and analysis of that data. This is a conscious attempt to reduce bias through acknowledgement of what already exists. Having said this I am also sympathetic towards the notion of bracketing as the essence of this is about gaining understanding from the research subject(s). However, if you attempt to bracket out prior knowledge it raises the question about how an individual will know whether their own hidden assumptions and interpretations have not been

influenced by their sub-consciousness. Openness comes from recognising that as a researcher I had already listened to lived experience of young people's sunbed use prior to starting my thesis. It was important to remain faithful to what was articulated by young people during the data collection and interpretation and analysis and not just what I believed was being said.

Van Manen, (1990) has developed a framework for hermeneutic phenomenological research which involves a basic methodological structure of a dynamic interplay among six research activities:

- (1) turning to a phenomenon which seriously interests us and commits us to the world;
- (2) investigating experience as it is lived it rather than as it is conceptualized;
- (3) reflecting on the essential themes which characterize the phenomenon;
- (4) describing the phenomenon through the art of writing and rewriting;
- (5) maintaining a strong and oriented pedagogical relation to the phenomenon;
- (6) balancing the research context by considering parts and whole (van Manen, 1990, p. 30-31).

(1) Turning to a phenomenon which seriously interests us and commits us to the world.

The phenomenon of young people using sunbeds hazardously is deeply worrying. It requires commitment to understand this phenomenon within this chosen field of research. This type of research requires passion and desire to understand the motivations of young people using sunbeds. There have been times when policy makers have not listened to calls about the potential problem with young people using sunbeds within the political and health fields. Changes in behaviour will not occur unless we understand the phenomena as lived by those young people engaging in the practice of sunbed use. Van Manen describes phenomenological research as being "given over" to a quest or task to make sense of an aspect of human existence.

(2) Investigating experience as it is lived rather than as we conceptualize it.

Merleau-Ponty, cited in van Manen,(1990, p. 32) suggested that this "means re-learning to look at the world by re-awakening the basic experience of the world" It means that on one hand the researcher will "stand in the fullness of life in the midst of living relationships and shared situations". On the other hand it means that the researcher actively explores the category of lived experience in all its modalities and aspects". This in part means enabling young people to describe their experiences in different situations, within groups, with peers and during one-to-one in-depth interviews so that they may affirm their experience as they live and understand it.

(3) Reflecting on the essential themes which characterize the phenomenon.

"Phenomenological research, unlike any other kind of research, makes a distinction between appearance and essence, between the things of our experience and that which grounds the things of our experience" (van Manen, 1990, p. 32). Research texts will need to be organised in terms of structure and meaning. The four existentials of lived space, lived body, lived time, and lived human relation (van Manen, 1990, p. 101), offer a reflective ground for exploring the text generated from conversations. Close reflection is needed to determine whether a theme is an essential or an incidental theme. Essential here means that the text cannot be detached from the theme as without it the theme will not make sense or will lose meaning.

(4) Describing the phenomenon through the art of writing and rewriting.

The art of writing and rewriting brings meaning to the surface. "Phenomenology is the application of logos (language and thoughtfulness) to a phenomenon (an aspect of lived experience), to what shows itself precisely as it shows itself" (p. 33). It is a process of interpretation through reflection? "To write is to measure our thoughtfulness" (p. 127). Understanding the use of sunbed by young people will be an on-going process of writing, revealing, observing, pondering, and then

rewriting allowing for further iterative attempts to reflect about what has been captured exploring deeper and deeper into the text to discover its depth.

(5) Maintaining a strong and oriented pedagogical relation to the phenomenon.

It is important to remain true to the objective of the research through deeper understanding and probing and not allowing oneself to become superficial. To remain grounded in the "taken for granted" means that the researcher will be remained orientated to phenomenological research.

(6) Balancing the research context by considering parts and whole.

Gadamer (1960-1998) understood hermeneutics as a process of co-creation between the researcher and participant, in which the very production of meaning occurs through a 'circle' of readings, reflective writing and interpretations. The use of a reflective journal is one way in which a hermeneutic circle can be engaged, moving back and forth between the parts and the whole of the text (Heidegger, 1927-1962).

3.4. Purpose of the study

Little is understood about the reasons why young people use sunbeds. The literature review highlighted several key issues as to why this needs to be better understood. Malignant melanoma skin cancer is potentially fatal, and is increasing each year, sunbeds are known to be carcinogenic to humans through ultra violet emissions, young people are using them frequently, and a lack of regulation means that young people are put even further at risk because they may be using sunbeds in a hazardous way without sufficient information on safe practices, such as limiting the time and intensity of exposure, using protective goggles and providing clearer information about the risks of sunbeds . The introduction of legislation banning under-18s from using sunbeds will have an impact on young people using sunbeds, but these impacts have not been thoroughly explored. Most of the research on sunbeds focusses on adult sunbed use and in the main the approaches have been quantitative. There is a gap in the research that focusses on understanding young people's sunbed use

and importantly there are very few qualitative studies. There has been little in the way of qualitative research that seeks to understand why young people use sunbeds despite a good awareness of the risk factors, particularly about the risk of developing skin cancer. The main body of literature is quantitative and there is limited literature about the factors that may influence sunbed use. There are no qualitative research studies that I am aware of that utilised focus groups and in-depth interviews to explore why young people aged between 14 and 16 years of age use sunbeds, and the motivating factors that influence their decision making process. In order to plan effective strategies targeted at reducing sunbed use in young people we must first understand what type of interventions may be more effective, and to understand this we must listen to what young people feel about the phenomenon from their view point, we need to appreciate what it is like for them within their social and cultural contexts and what it means to be a young person coping with influences, motivations and pressures of the modern world. The second part of my research aims to develop a skin cancer prevention strategy. Part of this strategy focusses on sunbed use amongst young people and the local implementation of an evidence based approach to reduce hazardous sunbed use amongst young people. This research provides a unique opportunity for using emerging research findings from my research to influence the development of a local strategy. In affect the research will be informing and guiding local action and interventions. The research and its findings have become embedded within the prevention strategy.

3.5. Study design

The study design was mixed methods qualitative research, which included focus groups and in-depth interviews. The final stage was the development of a prevention strategy, informed by the qualitative research and literature review.

3.6. Methods

Rationale for methods chosen

There were several research options for investigating the attitudes and motivations of young sunbed users. However, the methods had to complement the methodological orientation of phenomenology. Previous research in the field of sunbed use has focused on quantifying behaviours and attitudes but few studies have explored the meanings and nuances behind these behaviours. Many of the studies have been quantitative questionnaires and online surveys and few studies have used in-depth one-to-one interviews to explore the attitudes and motivations for sunbed use; and none include the age range 14 to 16 year of age. Quantitative methods may provide a statistical result but won't necessarily provide any understanding about the reasons why people engage in certain behaviours or the rationale for it. It is more difficult to extricate any depth of understanding by using quantifiable methods because the questionnaires are likely to be pre-determined and do not facilitate exploratory approaches. Within qualitative research methods using focus groups and or in-depth interviews it was hoped that young people would be able to express meaning and provide clarity and understanding about what influenced and motivated their behaviours.

For my research approach I employed multiple methods to study the same phenomenon and this can often be referred to as triangulation (Loiselle et al., 2007). Individual in-depth interviews are the most widely used qualitative data collection method (Nunkoosing, 2005). Although viewed as a generic data collection method individual interviews can be structured, semi-structured or unstructured depending on the the philosophical orientation. There has been less research on triangulation within qualitative methods than there has between qualitative and quantitative triangulation (Lambert et al., 2007). There have been different reasons for combining interviews and focus groups within research. However, It was important for me to recognise that the two methods are different and may produce different types of data. There are also

advantages and disadvantages of using both methods and these needed to be considered.

In-depth interviews allow for the probing of more depth with the participant than focus groups do. The interaction for focus group participants may vary between having no interaction to around ten minutes whereas, in-depth interviews encourage a one-to-one dialogue for much longer than that; approximately thirty to sixty minutes in some interviews. There is greater opportunities for the researcher to ask follow-up questions with in-depth interview participants than in focus groups because in the group situation the interviewer has to manage any interruptions and the views of all participants and give opportunities for other group members to participate, trying to avoid the domination of the discussions by one member of the group. Using one-to-one in-depth interviews as a single method would not however, have allowed for the effects of the group dynamic and the subsequent finding that following focus group participation four young people reported that they had stopped using sunbeds. Participants said that they valued the chance to speak to peers in an informal focus group.

From a pragmatic perspective, using both methods allows participants who are less willing to be involved in the one-to-one interviews to participate in focus groups and vice versa; allowing further opportunities for participants to become involved in the research (Taylor, 2005). Another reason for using both methods has been cited as an attempt to gain greater data completeness and confirmation (Adami, 2005). My rationale for using both focus groups and in-depth interviews was three-fold. Firstly I wanted to gain general impressions through the group dynamic. Secondly I wanted to observe behaviours within the group during discussions, observing how young people reacted to each other, their interactions and their body language. Thirdly, I wanted to utilise in-depth interviews to probe for deeper understandings than was possible in the focus groups, and without interruptions from other group members. An added benefit stemming from the use of the focus groups was that I gained the trust of participants in a non-threatening environment, leading to eight of the focus

group members subsequently volunteering for one-to-one interviews. I believe, therefore, that having the focus groups prior to the in-depth interviews was advantageous as it provided an opportunity to build the necessary trust.

It could be argued that I may be capturing data twice. However, I did not choose to conduct both methods to enhance the reliability of my findings, rather I was hoping to discover different types of data being presented through discussion to understand broad opinions of groups of young people. It was not my intention to test reliability of my findings, however, some similar themes emerged. What was useful was that conducting both methods provided me with the ability to listen to contradictions in what some participants said within focus groups and what they then said if they went on to have a one-to-one interview. I did not design the study with the explicit aim of comparing what a particular individual said in the group setting as opposed to when she was in a one-to-one interview context, but the opportunity arose for some comparison of this nature as the research progressed.

The explicit use of focus groups enables the collection of data and insights that may be less accessible without group interaction (Morgan, 1997). Like in-depth one-to-one interviews, participants have the ability to shape the research (Bennett, 2002). If semi-structured interviews are used then instead of interrogation, dialogue will ensue (Valentine, 2005). This type of approach also allows for observation and the interaction between participants, (Denscombe, 2010). Focus groups can also compliment one-to-one interviews; the advantages of both approaches can add new insights into group and individual opinions that may not have been revealed within one method (Hopkins, 2007) and can simulate everyday discourse and conversation. Kitzinger, (1994a) suggests that another advantage of focus groups is the ability for the author to fade into the background and allow participants to generate data as they may in everyday discussion. Lunt and Livingstone (1996, p. 96) claim two important strengths of focus groups: "Firstly, focus groups generate discussion, and so reveal both the meanings that people read into the discussion topic and how

they negotiate those meanings. Secondly, focus groups generate diversity and differences either within or between groups". Focus groups are good for generating information and collective views and understanding the meaning behind those views, and are also useful as a standalone method to explore group norms and their meanings. They are also useful when conducting a multi-method approach to explore a topic area, to clarify, challenge and extend, qualify or data collected through other methods (Gill et al., 2008). However, the group mix will always influence the collection of the data depending on factors such as age, environment, gender, personality and group dynamic. Hollander, (2004) describes how she believes that the social context, including, for example, gender and position in school, will also affect the data that are produced. The social context may affect the course of the discussion because of the potential ramifications when the focus group ends.

Morgan, (1998) suggests that focus groups should be avoided if listening to participants' views generates expectations for research outcomes to be achieved if this cannot be fulfilled, if the topic that is of interest to the researcher is not interesting for participants and if participants are uneasy with each other because they may not discuss feelings or views openly.

Recruitment and conducting the research

Research sample

Fourteen North West schools were invited to participate in the research. Initially all of these schools were based in Liverpool but due to low response, one school was subsequently recruited from Wirral. The research was conducted in schools. There are pros and cons for conducting research in school locations. Firstly the school environment is supervised by adults and teachers were readily available if required. PHSE lead teachers and the school nurse were also contactable in case any participants became upset during interviews. There was a possibility that issues around skin cancer could have been raised during the

interview and if this involved a family member there might be a possibility that the participant could become upset.

Another advantage for the school as the location was that they have to adhere to specific safe guards when allowing research in schools. Therefore, I was more assured that both the researcher and the participants were protected by the school and University research policy. I presented identification to the school administrative staff and had a valid criminal records check certificate.

Accessibility was also easier because research participants were already in the school and did not have to find the venue. This increased the chance that they would attend the focus group and interviews. There was the option to recruit young people from other areas such as youth clubs, dance schools or sports and leisure clubs which adolescents are likely to frequent. However, I felt that these alternatives may have limited access to a diverse group of adolescents. The school appeared to be the most convenient location to provide access to cross section of young people from different socio-economic backgrounds.

A counter argument against the school as a suitable location for the research is the potential for participants to feel that they cannot leave the research encounter behind and return to their lives afterwards. Since they spend considerable time in schools, the fear of revealing certain personal details may have led to constraints. This knowledge “may impose significant constraints on what young people are willing to disclose, perhaps sharpening the distinction between the ‘privacy’ of the interview with the ‘public’ nature of a focus group”, (Michell 1999, p.37).

The participants that were recruited were aged 14-15 and 15-16 years boys and girls. The reason for selecting this two age band was because previous findings from my work with young people and sunbed and sun-safety awareness had

demonstrated that there was less sunbed use amongst younger teenagers with a rise in sunbed use when they reach around 14-15 years of age. The characteristics of the schools varied (See figure 4). Some were girls only schools, other mixed. Schools with contrasting socioeconomic catchment areas were selected, characterised as low, medium or high deprivation areas. Participants were then assigned to a 'deprivation' category based on the deprivation score of the school that they attended. Participants from each of the deprivation categories were represented in the in-depth interviews and focus groups.

I did not set out to classify participants by their ethnic origin as it would have been necessary to ask each participant to define their ethnicity at the start of the focus group. It would not have been appropriate for me to assess what ethnic group they came from. However, two girls did identify themselves as Somalian, but they were non-sunbed users.

The timeline for the focus groups and in-depth interviews were very tight due to several factors. Firstly I had to ensure that there was as minimal disruption to schooling as possible, particularly around the time of pupil's examinations. Secondly, I was under some pressure to complete the interviews and focus groups before April 2011 due to the impending release of new laws which made it illegal for under-18 year olds to use and access sunbeds on commercial premises. Each of the eight focus groups within schools were completed prior to any in-depth interviews taking place in the same school. A follow-up invitation by the PHSE lead teacher was initiated for young people to participate in the individual interviews. It was not until I met the participant at the in-depth interview that I remembered that they had also been involved in the focus group. There is a potential weakness here in that I was reliant upon memory to track back to the focus group transcripts. It was therefore, inevitable that I might have missed some important data differences, contradictions and similarities. A total

of eight participants from the focus groups were also recruited to the in-depth interviews but this was happenstance and a potential limitation here is that I had not really planned for participants to opt for participation in both methods. This raised several issues. Firstly, whilst the context was different between group interviews from individual interviews I had not factored in a robust system that would clearly distinguish the same individual participating in both focus groups and in-depth interviews. This occurred because the focus groups were completed first.

A written letter was sent to each head teacher (Appendix 1); this letter explained the purpose of the research and also provided information about how the research would be carried out. Schools receive many requests to participate in research from a variety of organisations and services. The right balance has to be achieved by the head teacher, who has to make a judgement about the ability for the school to participate, whether this is in respect of the school examination timetable, capacity to accommodate or disruption to lessons, or the ethical implications of any proposed research. The head teacher is responsible for the welfare of their pupils and consideration of whether research on a sensitive subject in schools would have a detrimental effect on the school. Conversely the school might have been viewed favourably because they are collaborating with researchers to prevent harm to their students with what they generally understand is a dangerous past time.

Following principle agreement from the head teacher a follow-up telephone conversation was initiated with each of the schools Personal Health and Social Education lead teacher (PHSE) to explain why we wanted to conduct the research. PHSE leads support the delivery of health and social health aspects of the national education curriculum within schools. The PSHE education programme is a non-statutory part of the school education curriculum. There are two new non-statutory programmes of study at Key Stages 3 and 4: personal wellbeing, and economic wellbeing and financial capability. The programmes of study are based on the “Every Child Matters” (DH, 2004)

outcomes and build on the existing frameworks and guidelines in these areas. Most schools choose to teach PSHE because they find their pupils benefit from learning how to manage their feelings, build positive relationships, lead healthy lifestyles and become financially capable. As such, PHSE leads are expert in managing sensitive issues with young people and it was felt that they were best placed to coordinate the recruitment and to provide any support for participants if it was required. They also provided a single contact to enable the smooth organisation of the research interviews and focus groups. Informal visits were arranged to explain the research process to the PHSE leads prior to the schools agreeing to participate. This also gave the school the opportunity to ask questions.

Seven schools responded positively but two schools were unable to recruit enough pupils to participate in the research. The schools included an all-girl comprehensive school, an all-boy comprehensive school, and an all-girl Roman Catholic school, a mixed-gender school within a highly deprived area and a mixed-gender school from an area in Liverpool with a high ethnic representation. The research evidence suggests that there is a higher use of sunbeds by girls and this is one of the justifications for involving a greater number of girls participating in the research. Another reason for the higher participation of girls was that boys were very reluctant to participate and were less likely to agree to be interviewed.

The next challenge was to inform the decision making of both students and their guardian or parent. Further potential areas of concern needed to be addressed. Both sunbed users and non-users were involved in the focus groups but the one-to-one interviews stipulated in the inclusion criteria that the participant would have been using sunbeds regularly. This may have been a potential barrier in that parents may not have wanted to disclose that their child uses sunbeds in fear of how they may be perceived by others. Signing a consent form may be an acknowledgement of potential failure to prevent their child from

participating in risky behaviour. It may also be the first time that a parent was aware that their child had used a sunbed.

A consent form for focus groups (Appendix 2) and a participant information sheet (Appendix 3) was provided to the potential participants. For the one-to-one interviews the consent form (Appendix 4) specified that participants in the research had to be sunbed users only. A one-to one- participant information sheet was also provided (Appendix 5). It was made very clear to the potential participant and the parent that they could withdraw from the research at any time without being disadvantaged in anyway.

For this study, young people aged between 14 and 16 years of age from schools in Merseyside were recruited to take part in a total of 8 focus groups and 22 face-to-face interviews.

Focus groups

Figure 4. Characteristics of the focus groups

Focus Group	School description	Girls				Boys				Total FG	Socio economic background of school
		14/15yrs		15/16yrs		14/15yrs		15/16yrs			
		User	Non user	User	Non user	User	Non user	User	Non user		
FG1	All Girls' comprehensive school. Mixed sunbed users and non-users aged 14-15 girls	5	6							11	Medium deprivation
FG2	Mixed comprehensive. Mixed sunbed users and non-users aged 15-16 girls/boys			5	3			2	2	12	High deprivation
FG3	Mixed comprehensive Sunbed users 14-15 girls	12								12	High deprivation
FG4	Roman Catholic Girls' school Sunbed users 15-16 years girls			8	4					12	Low deprivation

FG5	Roman Catholic Girls' school. Mixed users and non-users 14-15 girls	3	5							8	Low deprivation
FG6	Mixed Comprehensive College. Sunbed users 15-16 Years girls			9						9	High deprivation and high proportion of black and minority ethnic pupils
FG7	Mixed Comprehensive school. Mixed users and non-users 14-15 girls	6	4							10	High deprivation and high proportion of BME pupils
FG8	Roman Catholic Boy's college Boys aged 15-16						2	6		8	Medium deprivation
Total		26	15	22	7	0	0	4	8	82	

There were eight focus groups within the five schools, approximately eight to ten pupils per group, segmented into two age categories 14-15 years or (Year 10) and 15-16 year olds (Year 11). The rationale for separate year focus groups was to help reduce any constrained views because of peer influence, particularly for younger students, who might have felt intimidated by the older girls. Focus groups also included sunbed users only or mixed users and non-users and mixed or same sex groupings, this enabled research observations to be noted capturing the dynamic between the different groups.

There were pre-planned questions to prompt discussion during the interviews for both the in-depth interviews and the focus groups. Cultural probes were also used; images of celebrities who had a tan or darker skin and also a pale celebrity. Other probes included advertisements or statements that appear in the windows of salons, such as, two for one offers, sunbeds re-tubed. These were shared with participants and they were asked for group feedback. This enabled them to explore their attitudes and opinions. Two research assistants supported the focus group sessions but only one research assistant at a time supported the lead researcher. The assistants were both females and had

experience working with young people. It was felt that having a female helping to facilitate the focus group would help to put female informants at ease. The assistants understood that their role was to help facilitate the focus groups to support the research lead. Both assistants had up to date criminal record bureau checks.

Through observation there was a sense that young people enjoyed engaging in discussions about whether sunbed use was beneficial to them or not. Several group members were interviewed on a one-to-one situation and revealed how the discussion group had made them reflect upon their own behaviour and how they had reduced or stopped using sunbeds as a consequence of the focus group discussions. Interestingly two groups fed back at the end of the focus group meeting that they wanted to do more focus group work for other areas of school activity. One respondent said, "Why can't we do more of this type of discussion in school, I think we would well benefit from more lessons things like this".

One-to-one Interviews

Semi-structured interviews provided a degree of flexibility whilst maintaining a focus on the research objectives and conceptual and theoretical questions. This method also allowed for clarity and affirmation and enabled the interviewer to reduce the chance of poor data quality because there was opportunity to ensure that the questions and prompts were understood. It also encouraged the researcher to listen to the informant's perspective, in his or her own words, face to face. The individual in-depth interview allows the interviewer to delve deeply into social and personal matters, whereas the focus group interviews allows interviewers to get a wider range of experience but, because of the public nature of the process, prevents delving as deeply, into the individuals views (Chilban, 1996; Johnson, 2002; Rubin and Rubin, 2005).

Figure 5. Characteristics of the in-depth interview participants

Interviewees	Pseudonym	Females	Females	Males	Males	Socioeconomic background of participant's school
		Age group	Age group	Age group	Age group	
		14/15yrs	15/16yrs	14/15yrs	15/16yrs	
1	Britney		Y			High deprivation
2	Chloe		Y			High deprivation
3	Andy				Y	High deprivation
4	Ellen	Y				High deprivation
5	Rosie	Y				High deprivation
6	Anna	Y				Low deprivation
7	Lauren		Y			Low deprivation
8	Jordan		Y			Low deprivation
9	Camile		Y			Low deprivation
10	Alexis		Y			Low deprivation
11	Gemma		Y			Mixed
12	Jammie		Y			Mixed
13	Danielle		Y			Mixed
14	Erin		Y			Mixed
15	Catherine		Y			Mixed
16	Abbey		Y			Mixed
17	Amy		Y			Mixed
18	Charlotte		Y			Mixed
19	Mandy		Y			Mixed
20	Stephen				Y	High deprivation
21	Craig				Y	High deprivation
22	Josh				Y	High deprivation
Total of the breakdown		3	15	0	4	
Total number of participants		22				

Twenty two in-depth interviews lasting between 30 and 60 minutes were conducted with girls or boys in the two age categories who reported using sunbeds at least twenty times a year. Lofland and Lofland (1995) describe in-depth interviews as guided conversations. An exploratory approach was taken, using prompts and probes to encourage dialogue and explanation. The interviews involved young girls and boys from different ages and schools. Only schools that had consent and support from the Head teacher were considered. School Head teachers were asked to share documentation with students and parents/ guardians. This documentation included a participant lay information sheet, a participant assent form and a parental consent form. Only young

people aged between 14 and 16 years were allowed to participate in the study. Participants were reassured that there was no obligation to participate and that anonymity and confidentiality would be protected.

Research questions were carefully developed from the central research question (CRQ) and the theoretical questions (TQs) (Figure 6). From these interview questions (IQ) were created for the focus groups (Appendix 8) and the one-to-one interviews (Appendix 9). These were derived from a central research question (Wengraf, 2001). The first stage of the process was to clarify the central research question; this was essential and defined the main purpose of the study. The next stage was to define the theory questions. The last stage was to design the interview questions. These linked to the theory questions and the central research question.

Figure 6. Central research questions and theory questions

Central Research Question	
CRQ 1	What influences and motivates young people to use sunbeds?
Theory questions	
TQ1	What are young people's aspirations or key influences?
TQ2	How does using a sunbed affect self-esteem?
TQ3	How does using a sunbed affect body image?
TQ4	What are the perceived benefits of using a sunbed?
TQ5	What influences young people to use sunbeds?
TQ6	What motivates young people to use sunbeds?
TQ7	What do young people think about the risks of using a sunbed?
TQ8	How does using or not using a sunbed make young people feel?
TQ9	What approaches may help to modify young people's behaviour?

Interviewing young people

The first stage of the process was to clarify the purpose of the interviews with the participants and explain what the research was trying to find out. The goal of the interview was to explore in-depth the informant's point of view, feelings and perspectives. It was important to introduce oneself to the participant(s) and the proposed area of study. It was critical that good rapport was established with the participants, so putting them at ease. This is an essential component of

research interviews, particularly in-depth interviews. The stages of development of rapport between the interviewer and the participant have been described by some researchers and include apprehension, co-operation, exploration, and participation (Rubin and Rubin, 2005; Briggs, 1986; Miller and Crabtree, 1999).

Several issues were considered when asking the research questions. Firstly, questions were worded so that participants could not simply answer yes or no, but were more likely to expound on the topic. Ensuring participants quickly relaxed in the interviewer's company was important, as single one word answers were likely to have been used when participants were nervous. There were pre-planned questions to ask during the interviews, questions flowed naturally, and were based on information provided by the participant. It was necessary to probe further at times and to encourage the participants to open up. When answers were superficial it was necessary to return to the same question for more clarification. Several cultural probes were used including images of celebrities who were brown or white skinned. These images were used to gather feelings and attitudes towards particular types of appearance. Sunbed adverts were also shown to test reactions to messages that may encourage or deter participants. A potential weakness in the use of celebrities with varied skin colour could be that young people might have been influenced by the celebrity's success as well as their appearance. Upon reflection to gain views about skin appearance images of people unknown to participants with different skin colour would have been more effective to draw out views of skin colour. However, it was an attempt to connect with young people at the start of the data collection, to put them at ease and to generate discussion about people in the media that they may have views about.

There were smooth transitions from one topic to the next and the researcher's role was not to impart knowledge to the informant or to be judgmental in any way. It was also to interpret what was being said, as well as seeking clarity and a deeper understanding from the informant throughout the interview. Following

the focus groups, a reflective approach was used with the secondary research assistants to gain consensus on what had been observed and understood.

Preparation prior to interviews

Preparation for the interview phase was very important. Contact was made with the head teacher or PHSE lead teacher the day before the focus group or one-to-one interviews; this ensured that everyone concerned was clear about the time of the interviews, the location of the session. On the day of the focus group interviews the question prompt sheet and cultural probes were taken to the school. It was important to follow the school policy for visitors, this included: presenting evidence regarding the researcher's identity and a completed Criminal Records Bureau clearance certificates. Before any focus group or interview started it was explained to participants that any information would be kept in confidence and that no identifiable information would be shared; as pseudonyms would be used. Written consent was checked and permission to record the interviews with a digital audio recorder was obtained. It was important to introduce the researchers to the participants and a set of ground rules in the focus groups. These were developed by the participants and included, respecting each other views, not talking when other people were talking and not to interrupt each other.

One of two female assistant researchers supported each focus group session. The first research assistant was in her fifties and had experience of working with young people in her capacity as a health promotion specialist. She was acutely aware that her role was not to provide information to participants but to support the capture of data, also probing for greater clarification from the participants and also to make observations. The second researcher was much younger and she also had experience of facilitating focus groups. Both assistants helped enormously with the research and complimented each other as team. The interaction between participants and the researchers was informal and they were put at ease very easily. Having a female research assistant present with a male researcher appeared to help and balance the process. There were

concerns that young girls might not have participated in the same way with just a male interviewer. Having two people involved was very useful, because interviewing as a pair enabled the researchers to ask questions and maintain eye contact whilst the other researcher was able to prepare for the next question once the previous question had been explored fully. This made the session seem more seamless and ensured that we asked all of our questions. Written notes (i.e., field notes) were also completed and researcher's views and feelings were recorded immediately after the interview. This included any observations that were made during the interviews. Non-verbal behaviors were recorded in the field notes as they occurred.

3.7. Ethical considerations

There were four main ethical issues that were considered. These were: reducing the risk of unanticipated harm; protecting participants' identities; effectively informing participants about the nature of the study; and reducing the risk of exploitation. In respect of sunbeds we did not want to make the participants feel guilty or bad about using sunbeds. We were conscious that they may have been sensitive about their body image and self-esteem and so we needed to ensure that within focus groups, any intimidation and mocking was not tolerated. We were also conscious of the fact that some young people may have been affected by a family member having had some form of cancer, as we predicted that cancer would emerge in discussions. Participants were informed that they could leave the interviews at any time without giving a reason and they were also informed that they could discuss any issue further with the school nurse or PHSE lead if they preferred. In the unlikely event that a participant became distressed the participant's head of year would have been made aware and support would have been provided by a nominated teacher. The Doctoral lead supervisor would have also have been notified. The lead researcher and assistant researchers underwent Criminal Records Bureau advanced checks and showed these to participating school leaders. This was an essential requirement by the research ethics committee serving not only to safeguard the young people, but also the University and the researchers.

The second issue was that of the anonymity of the participants. All recordings remained on a password protected computer system based in the university, only accessed by the researcher. Following completion of the research, electronic data was transferred on to computer disc (CD) and was kept with all transcriptions which were securely stored in a locket cabinet in the university. After transfer of electronic data onto CD, electronic data was deleted from the password protected computer. Interview transcripts will be kept for ten years locked in a secure cabinet in the University department of Public Health. No information was shared outside of the interview except with supervisors. No names were present on any transcripts or documents from the focus groups and in-depth interviews; any names used following transcription were replaced with pseudonyms. No participant was able to be identified on the transcripts and any names they that they referred to were substituted with a series of xxxx. I was also careful not to include specific details about events; place names etc. because this might have been identifiable and conclusions drawn about an individual's identity should anyone connected with the schools read any quotes. Young people were interviewed within the school premises and observation points were set up so that the researcher and interviewee could be seen by teachers during the interview. This was achieved via the use of an adjoining classroom so that conversations remained confidential.

Consent was a very important consideration for this research. This was important as we needed to ensure that the research had adequate safeguards to protect the interests of young people, that they were fully informed about what the research was about and that they understood their rights in respect of discontinuing participation or not wanting to participate in the first place. It was necessary to obtain informed consent from the prospective participants, the parent or legal guardian and the Head Teacher of the school involved. It was important to acknowledge and respect young people's willingness to participate in the research. Parental consent was insufficient to justify the participation of young people in the research; I believed that their own assent was equally as

important. Assent has been described as having two categories within research involving children. The first category reflects similar reasons for attaining informed consent and includes two components, respect for autonomy and the protection of the research participant (Giesbertz et al., 2013; Beauchamp and Childress, 2009). The second category is related to engagement and includes three components, these include, empowering the individual to participate in the decision making, support for the development of the child and the last category is support for communication between the researcher and the child (Wilfond and Diekema, 2012). Assent is therefore, arguably more important for child research participants, as informed consent is agreed by parental permissions whereas assent is an autonomous decision made by the child.

Another ethical consideration was related to the offer of vouchers for participating in the research. This can be seen as a form of enticement; however, it was felt that this showed gratitude to participants for sharing their experiences and taking the time to support the research. Grady (2001) postulated that an amount of money that is not excessive, represents a gesture of respect rather than an enticement to participate in the research. Participants in my research were offered a £5 voucher for participating in focus groups and a £10 voucher for one-to-one in-depth interviews. Neither of these amounts was seen as excessive and the University's research ethics committee approved the gifting of the vouchers. The school was also offered £200 to contribute towards improving PHSE lessons.

One issue raised by the research ethics committee was the need to ensure that I had sufficient safeguards in place should a participant disclose that they identified a sign of skin cancer. It was explained to participants that if they were concerned about anything that they told me that amounted to worries about their health and wellbeing, I would advise them to see their GP and to tell their parent or guardian. I would not break their confidentiality by informing a teacher or anyone else.

3.8. Data analysis

Data analysis drew on the processes for conducting phenomenological analysis with qualitative data set out by Edwards and Tichen (2003), summarised in Figure 7, points i) to vi) ,

Figure 7. The stages of data analysis, drawing on Edwards and Tichen (2003)

Stage of data analysis	Task
i) Immersion	<ul style="list-style-type: none"> • Organising the data-set into texts • Iterative reading of texts • Preliminary interpretation of texts to facilitate coding
ii) Understanding	<ul style="list-style-type: none"> • Identifying 1st order constructs • Coding of data
iii) Abstraction	<ul style="list-style-type: none"> • Identifying 2nd order constructs researcher and analytical focus groups • Ground 2nd order constructs into sub themes
iv) Synthesis and theme development	<ul style="list-style-type: none"> • Grouping sub-themes into themes • Further elaboration of themes • Comparing themes across sub discipline groups
v) Illumination and illustration of the phenomena	<ul style="list-style-type: none"> • Linking the literature to the themes identified • Reconstructing interpretations into stories through case study examples
vi) Integration and critique	<ul style="list-style-type: none"> • Critique of themes by the researchers and externally • Reporting the final interpretation of the research findings
<i>PM added stage: Practical application of the research to inform practice</i>	<ul style="list-style-type: none"> • <i>Utilise research findings to raise policy questions and to promote action that influences local action by services</i>

In addition, I added a further stage in which I consider the practical application of the research and how this may affect knowledge, skills or policy (see final ‘PM’ box in Figure 7). This approach allowed for the systematic identification of first

order constructs which were further layered into second order constructs with my own understandings and interpretations and input from my fellow research colleagues who were involved in the focus groups. I constantly cross-checked my interpretations with transcripts from the in-depth interviews and focus groups so as to maintain closeness (or faithfulness) to the participants' constructs, grounding interpretations in the data. This strategy to maintain authenticity was suggested by Lincoln and Guba (2000). I utilised thematic analysis of focus groups and interviews to organise themes, some of which were illuminated using case studies to illustrate meaning, I also tried to maintain reflexivity throughout.

All interviews were typed verbatim for each focus group and for each in-depth one-to-one interview. A spreadsheet was developed to record the data (Figure 8). In order to facilitate my interpretation I needed set out a table to enable me to cross reference my data with field notes.

Figure 8. Example of data recording template

	RF	But sometimes they are dodgy aren't they?	StJ	10	M
80	RF	Sometimes when they have been on the looked like they have been slapped they just look red, because they have been on it that much so they look like a tomato..... <i>Non user A little provocative in tone towards sun bed users</i>	StJ	10	F
	I	So when would you particularly choose to use a sunbed <i>before a holiday</i>	StJ	10	

The first column in the table represented the number line for an individual focus group. The second column indicated whether the respondent was RF= Respondent Focus Group or a pseudonym for the in-depth interviews. I= Interviewer. The coloured column identified whether the focus group or participant was from a school in an area of deprivation= (red), mixed socio economic representation= (yellow) or affluence= (green). The penultimate column identified whether the participants where from year 10 (14 to 15 years of age) or year 11 (15-16 years of age). The final column indicated whether the participants were boys= M and blue), girls =(F and pink) or mixed =(FM and

purple). This was very useful when I was cutting data into chunks of code as I was easily able to identify the age and gender and which school participants were from; and was able to draw on any similarities. I completed one table for focus groups and one table for the in-depth interviews. I was also able to add field notes into the data and insert ideas, thoughts and observations.

Stage i): Immersion- Organising texts

Listening to audio data involving over 90,000 words was a very interesting experience. This enabled me to listen to what was said, listening for tone, and delivery of the responses. I also read and re-read text in an iterative way. This is known as *immersion* in the data (van Manen, 1997). I met with the two assistants who supported the focus groups and I added their field notes, interpretations and understanding to the data transcripts. This dialogue enabled us to reflect on the emerging ideas and interpretations. Barbour (2001) sees this approach as nurturing insight and developing thoroughness.

Stage ii): Understanding – Identifying first order constructs

The data were analysed by first order constructs. First order refers to the participants' views which were expressed in their own words in order to capture exactly what they were saying. Text was analysed line by line for key issues, facts, attitudes, motivations, contradictions or interesting view points and for potential themes as they emerged. Emerging ideas were scribbled next to text. General holistic themes emerged and detailed analysis of the text line by line was completed. This took considerable time as there was a lot of data to examine. When presenting the data on a theme that involved both focus group and in-depth interviews I had to be mindful that I could have potentially duplicated data from the same participant who had been involved in both data collection methods. I tried to reduce this risk by not including quotes from the same person twice, as far as I could recall. This is a limitation of the analysis because I was relying on memory to recall whether the same person had repeated their views during both interview and focus group contexts. It is possible that a quote may have been used inadvertently from a participant who had been involved in both methods, but the data reflected the typical views from

the groups and not that of individuals unless this was indicated. Qualitative data analysis software was considered, particularly for organizing and retrieving and manipulating the data. However, the approach that I took was to use a more organic manual process. Although there is a place for computer aided analysis, some researchers have expressed concerns about this approach suggesting that it may guide researchers in a particular direction (Siedel 1991).

I printed two copies of both the focus groups and the in-depth interview transcripts; one copy was used solely for writing ideas and emerging thoughts so that I could return to this frequently to add new thoughts. The second copy was used to cut out passages of data. In the first analysis round, I wrote down themes at the side of the transcripts. The second reading of transcripts involved me cutting out the potential theme or idea as it emerged out of the data and this was placed in an A4 envelope. The envelope was named with a broad theme. This process was completed adding envelopes for any new emerging themes and ideas until the eight focus groups were completed. Having the entire focus group data allowed me to view the participant's testimony as a whole as well as individual extracts of data.

Stage iii): Abstraction – Identifying second order constructs and grouping to create themes and sub-themes

Second order constructs were developed using my theoretical and personal knowledge of the first order abstracts. I placed emerging themes from each themed envelope onto a long length of paper which was labeled as the first order construct theme. A further layer of analysis was made and these data pieces were moved around creating sub themes. These were temporarily grouped to the sheet of paper which was then hung up in an unused room. This process continued until all the envelopes had been analysed. I then added further reflections by writing ideas and thoughts on the sheets of paper. At each stage I reflected on the original research outcomes. Stages one, two and three were repeated for the in-depth one-to-one interviews. When themes were similar large sheets were labeled and placed next to each other.

Stage iv and v): Synthesis and Illuminating and illustrating the phenomena

This stage was very exciting. In front of me in a very large room were sheets of data which had been coded and themed and sub-themed. This is where I believed my decision not to use a computer aided approach was justified. I was able to stand back from the data in what I refer to as the 'absorption stage'. I was able to revisit this room at will, reading sections and standing back from the data. I was able to cross reference similarities and link data easily. I was also able to examine responses by looking as whether particular themes emerged from schools of higher or lower deprivation, or from boys or girls or different age cohorts. I was able to write down and comment on generalised themes, anomalies and broad statements. I was also able to identify whether there were any differences between focus groups and in-depth interviews, between age groups, gender and users and non-users of sunbeds because I was able to visualise all of the data in one space being able to compare any themes that were similar and if there were differences. I was able to see this easily because of my colour coding for low, medium and high deprivation status within my data and I could also identify on each piece of data the age, gender and whether they were a sunbed user. I did not have an identifier for ethnicity.

Stage vi): Integration – Testing and refining the themes

The final stage was to review and debate the themes with the two researchers to check whether their impressions of the focus group findings represented what was found during the analysis process; they also tested my assumptions and we were able to reflect upon the literature. I reflected upon a missed opportunity as I had planned to carry out two further focus groups to test my interpretations with young people. I wanted to test out the themes and also explore their views of the sunbed regulations which were introduced after my data collection had finished. Unfortunately I was unable to complete this; and on reflection it might have added to the analysis as my interpretations. A counter argument for this approach was that using the findings to test the validity of the interpretation with new participants could have added another layer of interpretation; which might

have distorted what the original participants had actually said. There would have been inherent dangers in assuming that all young people would share the same views at that stage; as the legislation banning sunbeds for under-18s had been introduced and their views might have altered as a consequence of that legislation being in place.

Stage vii): Practical application of the research to inform practice

The final stage that I felt was important was to apply the emerging findings in policy and practice. My research aimed to explore the attitudes and motivations of young people using sunbeds hazardously, but also to develop a prevention strategy. The process of analysing the research provided me with the opportunity to reflect on the emerging findings and the evidence in the literature and this was invaluable in the process of developing the skin cancer prevention strategy. The strategy involved designing an interventional approach through multiple stakeholder participation. Service users, young people, members of the local authority and wellbeing boards, school representatives, environmental health, health professionals, parents, sunbed association representatives and schools were involved from the outset. A workshop was held to help shape this strategy. This included reviewing and sharing the evidence, understanding the data intelligence, agreeing prioritisation criteria. Prior to the workshop participants received information demonstrating the key evidence and information on cancer incidence, mortality and survival. Other findings from social marketing interventions Merseyside & Cheshire Cancer Network (2009), and regional and national initiatives were summarised and presented. Interactive posters and small focus groups were used to facilitate discussions. The strategy was developed. A stakeholder steering group was established to develop the strategy and agree the work programmes and how to evaluate the effectiveness.

Chapter 4. Results: Appearance and feeling good about oneself

This chapter reports the findings that emerged under the overarching theme of 'appearance and feeling good about oneself'. It explores the reasons participants gave for wanting to achieve a tanned appearance and how factors such as peer influence, social norms and celebrity idols affected their behaviour. It also covers how sunbeds impacted on participants' confidence and self-esteem. A commonly cited reason given for sunbed use is to enhance one's appearance. In many westernised cultures having youthful looks and vitality is very much sought after acquirement for some, and using a sunbed is perceived to be convenient way to tan. Furthermore, in countries where the weather is seasonal, a sunbed provides access to a tanned look all year round. Although a tan it is found to be attractive by some it is very much a sign of skin damage. Societal pressure to look attractive is reinforced by the media, projected by music artists, film stars, sports stars, fashion magazines and advertising. The promotion of societal ideals and the search and promise of achieving perfection can place a great deal of pressure on individuals, which can affect the self-esteem and confidence if the 'perfection' ideal is not achieved.

In the results chapters, 4,5, 6 and 7 the identities of participants have been protected. All sunbed users' names have been replaced by pseudonyms, which appear in brackets directly after each quote. This helps to identify that this data is from sunbed users.

4.1. Positive and negative impacts of a tanned appearance

Looking healthier with a tan

The majority of participants in both one-to-one interviews and focus groups felt that a tan looked healthy; comments from peers also reinforced the message that a tanned look is a healthy one. Some participants felt that positive responses to tanning from their peers mitigated against the negative side-effects

of sunbed tanning; therefore, receiving a positive response, outweighed thoughts about the potential risks associated with sunbeds.

Most girls felt that they needed to look good most of the time. They would also employ different strategies to feel more comfortable about the way they looked. This was achieved by applying make-up or by having a tanned appearance. Alexis illustrates this in the following discussion. For Alexis tanning was very much focussed upon her social interaction and the desire to look good when she was out in public participating in those social activities. The desire to always look good was a factor in the back of many young people's minds. Alexis already had olive skin which was darker than most of the participants in her school, yet she wanted to have a darker complexion.

"How would describe your normal skin colour?" (Interviewer)

"I am olive skinned." (Alexis: sunbed user, low deprivation 15-16 yrs)

"That is interesting because a lot of the girls in your group said they wanted to have olive skin and yet you have already got it." (Interviewer)

"(Laughs), yeah I tan dead easy." (Alexis: sunbed user, low deprivation 15-16yrs)

"So you have got the olive skin yet you want to be darker?" (Interviewer)

"Yeah it is err..... sometimes I look dead pale and unhealthy so I will just go on the sunbeds, but that is if I was going out though, if I weren't I wouldn't bover though." (Alexis: sunbed user, low deprivation 15-16 yrs)

*"So leaving the house or doing something social.... (Interrupts)
(Interviewer)*

"I would put make-up on just shopping with my mum to ASDA or something like that." (Alexis: sunbed user, low deprivation 15-16 yrs)

"What skin tone would you like to achieve then?" (Interviewer)

"Erm.. natural but more on the darker side. It makes you look healthier with a tan as well." (Alexis: sunbed user, low deprivation 15-16 yrs)

"So when you have a tan it makes you feel....." (Interrupts) (Interviewer)

"Better about myself." (Alexis: sunbed user, low deprivation 15-16 yrs)

When the interviewer referred to Alexis as already having olive skin she seemed to take this comment as a compliment and seemed pleased with herself. In some respects I was providing her with the positive feedback that she liked. This was very much linked to her feelings of improved self-esteem.

Darker natural look

Some girls wanted a certain look. For some the darker the better, these participants wanted to stand out in the crowd and typically they exuded confidence. For others they did not want to be singled out, they wanted to fit in with the expectations of their peers or with societal appearance ideals. Some girls did however; draw the line at what they described as fake. They did not want an orange look, which may have set them apart in a negative way. The majority of the girls wanted a more naturally tanned appearance Some preferred a darker skin tone even if they only applied tanning cream and they were not overly concerned whether this appeared streaky. Having uneven skin tones from the poor application of artificial sun tanning cream superseded their desire to not be pale. Participants used the word 'pale' on several occasions, with a clear negative connotation. This may stem from everyday use of the word, for example when you are unwell, people might tell you that you look pale and can

be used as a sympathetic but caring gesture or that you look terrible. So the word pale is linked to everyday lives often in a negative way. 'Pasty' is another description of paleness that was used by participants, also in a negative way. The dictionary definition of 'pasty' is- pale, or unhealthy looking. Both of these words were used subjectively by the young people, with what appeared to be a common understanding of what the words implied.

Other participants used colours to describe tones of skin: 'olive' was used in positive terms, as though it would be acceptable to acquire an olive tan. 'White' was used in a negative context, as unattractive, whereas 'orange' was sometimes used negatively and at other times positively. 'Orange' has been used in the media negatively to describe 'tanorexic' people who have used sunbeds or false tans excessively and look an 'unnatural' shade of orange. Some participants viewed white more negatively than orange and some did not mind being called orange. This might be because they may be associated with using sunbeds and fake tans which is something older girls would do and this might make them feel more mature. Participants also used the term 'dark complexion' to refer to someone that has skin colour somewhere on the colour spectrum between olive and brown.

Mandy's response illustrates how many of the girls wanted to have some colour and disliked paleness. In this narrative she was asked whether a tanned look was something she needed to achieve.

"Yes definitely, if you are all white and pasty you look really ill and I don't know, plain looking. But when you have a tan you look prettier. You don't need make up either so it looks more natural than being caked in loads of foundation." (Mandy: sunbed user, mixed deprivation area, 15-16)

The following narrative in Focus Group five shows girls aged 14-15 years debating the issue of 'paleness'. Two participants - one user and one non-user - spend a minute or so debating whether having a tan is better than being pale. Presented here is a section of that interaction. The sunbed user feels that a tanned look is better and the non- sunbed user presents an argument for it being personal choice.

FG5

Participant "If you have a got a tan your mates will say to you look nice but if you are pale or white they don't say anything to you...."(Non-sunbed user).

Participant "Some people look nice pale. Some people suit being pale. People have different tastes." (Sunbed user).

Participant "If you saw someone who had been on the sunbeds stood next to someone who had not been on them and they were really pale, which one would you say looked nicer? you would say the sunbed one wouldn't you?" (Sunbed user)

Participant "No not really coz some people suit being pale." (Non-sunbed user).

Most girls seemed to be dissatisfied with multiple issues rather than with just the paleness of their skin. They were also unhappy about their body weight, their hair and their clothes. Chloe illustrates the typical responses recorded in the interviews.

"Erm I would like to be skinnier err and my hair to be longer I don't know, and to be a bit more darker skinned but not too much because I don't like it to be too dark, I would rather be more natural." (Chloe: sunbed user, high deprivation, 15-16yrs)

Fake tan was less appealing

All participants felt that applying fake tan cream was high maintenance; they felt that it took too much effort to apply the cream regularly. They also felt that they could never apply the cream well, and therefore, they had an uneven tan which then did not look natural. They also really disliked the pungent odour. Applying artificial tanning cream was something young people did not do together, so there were fewer opportunities to interact socially when applying artificial tanning cream, unlike using a sunbed parlor, which they were able to visit with friends.

“I don’t know a lot of my friends use fake tan and it puts me off like, I sit next to one of my mates in class and every single day you will see like fake tan marks on the hands and she will stink and I will say like stop using fake tan.” (Danielle: sunbed user, mixed deprivation, 15-16)

“Arrhh livid proper white! Like last night because I have not been on the beds I had to put false tan on my legs and my face is just white, coz I died my hair and I just look proper pale and now my legs have just gone orange. I mean proper orange and it does not go with my face so I have had to pull my socks right over my knees.” (laughs). (Jordan: sunbed user, low deprivation 15-16 yrs)

Young people are generally dissatisfied with a fake tan but will resort to it if they cannot get to use a sunbed. They would use fake tan because of their dissatisfaction with a pale complexion. Paleness was seen as less attractive to both boys and girls. They did however, acknowledge that some pale people suit being pale. Danielle explained passionately that no girl would want to be paler than a boy. Yet she claimed that tanning was for her own benefit and not to be more attractive to boys.

“No girl wants to be like paler than a boy but I don’t have sunbeds to impress boys. I do it to feel better for myself.” (Danielle: sunbed user, mixed deprivation, 15-16)

Gemma expressed her loathing of paleness, yet she somehow recognized herself that it was not logical to be so vehement against pale skin. Gemma referred to first impressions, and that she was likely to judge people by their appearance until she got to know them. She used the phrase “make my skin crawl”. This emphasized her loathing for paleness. This was not a typical view of participants but girls who were more likely to use the sunbeds more regularly were more likely to have a stronger dislike to paleness.

“You know if I liked them (girls she did not know) it would not make a difference what skin colour they were at all. I just think seeing people that you don t know I think, oh, she is really pale. I was watching erm a programme with my friends the other day and there was this girl who was really, really pale, my skin was crawling because I couldn’t understand why she was that pale it sounds stupid because I know that it is a ridiculous thing to say.” (Gemma: sunbed user girl, mixed deprivation, 15-16 yrs)

The following narrative is an interactive discussion with Focus Group Four which is an all girls’ school aged 15-16 years in a low deprivation area. In this passage the girls discuss teasing about paleness all participants are sunbed users but one or two have not been on a sunbed for several months and this interaction highlights teasing amongst the girls.

Interviewer “Do you say boys have nothing to do with it or a little.”

Participant “In my life nothing but could do to a girl oh you are proper livered you like I have done it to lads.

Participant “Use all say it to me all the time these all say it to me.”

- Participant* "That is because you are proper pale."
- Participant* "So."
- Participant* "I have said it to lads a few times like you need to go on a bed you but I have only been messing around."
- Interviewer* "So is that mickey taking!"
- Participant* "Yes."
- Interviewer* "If someone says that to you or girls who are little bit paler and they say you look proper livered how would you feel?"
- Participant* "I would ignore them wouldn't bother me, it is not what everyone else thinks I look like it is what I want to look like."
- Participant* "Doesn't bother me either coz I know I am white, I have always been white and I am not going to change my skin colour coz a lad or someone else wants me to."
- Interviewer* "How did it make you feel when you said you all you call me pale."
- Participant* "I hate it, it does my head in. I used to be actually quite tanned olive coloured skin then I went white and I don't know why I hate being white I would rather be like a Spanisly colour like dead brown like that not pure black like."

Sunbed use to clear spots

From the in-depth interviews, the four boys who were interviewed mentioned the use of sunbeds to clear spots and improve their skin complexion. Andy believed that clearing spots gave him more confidence.

"How did your spots affect you?" (Interviewer)

"Yeah it made me feel really bad they are not really nice to look at and they made me so self-conscious. I did not come into school, they were

that bad I would go on the sunbeds and then they went.” (Andy: sunbed user, high deprivation, 15-16yrs)

*“So for you getting rid of your spots gave you back....”(Interrupts).
(Interviewer)*

“Confidence.” (Andy: sunbed user, high deprivation, 15-16yrs)

Some participants during the focus groups interviews explained how they were being advised to use sunbeds to clear their acne by their own family doctor. This advice was reflected in other one-to-one interviews and focus groups.

“It was the doctor who said that the only way to get rid of my skin condition was off UVB light sunbeds or sun showers. So mum started taking me”. (Erin: sunbed user girl, mixed deprivation, 15-16)

FG5 *“My spots clear up after I have been on them. If I have not been on for a while the spots come back out. I have got to go to the doctors today to get spot cream. My doctor may tell me to go back on the beds when I see him.” (Sunbed user girl, 14-15, low deprivation).*

It was not understood why the sunbed users laughed. The participant in this focus group was fearful of her spots returning.

Celebrity influence

It was clear from the focus groups that young people felt that they wanted to be more attractive and a benchmark for some was with celebrities. However, they were reluctant to use the word attractive in reference to themselves, this may be due to a lack of confidence or a feeling that they would appear over-confident. Most, but not all, of the celebrity idols met with the majority of the young

persons' ideals about how to look. They would be tanned, slim, attractive, natural looking and talented. Some young people did not see beauty as a necessary trait for an idol but they did admire it.

During the interviews three photographic images of popular celebrities were used to gauge participants' reactions. These included the singer Nicola Roberts from a successful girl band called "Girls Aloud". Nicola Roberts has a pale complexion, with fair hair and is a sun safe and anti-sunbed campaigner. I also showed them an image of Katie Price a celebrity model who used sunbeds and who has had a lot of cosmetic surgery. The final image was of Ronaldo the dark skinned Portuguese football idol and pin-up. These probes helped to encourage views about what young people thought about skin colour. Participants felt that celebrities did influence their positive association with having a tan. Lauren described girls aspiring to have the perfect body that was socially acceptable. Celebrity idols may have influenced the way young people wanted to look and this created pressure for girls to achieve and maintain that image. All of the young girls interviewed felt that they had to aspire to celebrity idols but denied that they tanned for other people. They were very clear that any motive for tanning was their choice and for their own satisfaction and not for others. Young girls were likely to be dissatisfied with how they looked and acknowledged that in spite of aspirations to look like attractive celebrities they were more likely not to achieve these goals. The following quotes were typical of responses from the girls.

FG4 "Yeah, yeah everyone wants to be like someone, no one is happy with themselves, everyone wishes that they could look like a celebrity, every girls does." (Sunbed,user, girl, 15-16, low deprivation)

FG3 "...most celebrities females you don't really see them as pale they are always orange, fake tans or sunbeds or going on holiday, so

because you don't see most girls like that in the media we may think that that is the ideal girl and that is what every girl should look like, but in reality they look like that girl as well..(Points to pale image of celebrity)". (Sunbed,user, girl, 14-15, high deprivation)

Lauren described how young people wanted to look like celebrity ideals and pointed out that the media could identify faults even in the most beautiful of idols. The fact that these beauties had faults emphasised the need for young people to constantly strive to look better. If cellulite, loose skin, stretch marks etc. can happen to 'perfect people' then young people felt that they almost had to try even harder to maintain a perfect image.

"It is body image because they want to be tanned and have the perfect sculpted body and want to be tanned to match their outfit when they go out." (Lauren: : sunbed user, low deprivation, 15-16 yrs)

"Where does the desire to look like that come from?" (Interviewer)

"Celebrities the way like some of them are great, but magazines pin point cellulite or something and flaws, but everybody has got them and there is nothing wrong with them. So girls think oh my gosh I don't want to look like that I don't want that to happen so they go out of their way to make themselves.... or even try to make themselves look better." (Lauren: sunbed user, low deprivation 15-16 yrs)

Lauren felt that celebrities are a benchmark for acceptance and that even celebrities receive criticism, she emphasized that there is pressure to always strive to look her best. Amy also talked about setting goals and aspiring to achieve the same image as her idol. This may have been a positive step for her or pressure to conform to what young people view as attractive. There was a tendency for girls to set goals to aspire to the image that they want. Their goals

were often unrealistic but they strived to look better. Amy typically described how she set goals to achieve her desired image.

“I want to be like that, as well as looking up to them you will want to look like them. In the end you will aim to do things to become them. You see a girl in a magazine and you think she is amazing and you say right I have 6 months to turn myself into her that is what you do, well, you try anyway.” (Amy: sunbed user, mixed deprivation, 15-16)

Some participants liked the image and skin colour of celebrities, this was the main attraction. They described wanting to look like these celebrities. They liked their clothes, their figures and their skin complexions. The success of their idols also attributed to the positive image that these celebrities were portraying, which made the overall image attractive to young people.

“I like Adrianna Lima she is a model, she is very tanned she uses sunbeds. They are the main attraction, the tanned ones (celebrities). (Britney: sunbed user, high deprivation, 15-16yrs)

Whilst Britney’s response was more typical, she also acknowledges that paler celebrities looked good but her preference was with the tanned idols.

“Do you think the tanned idols are more attractive?” (Interviewer)

“Not necessarily there are fabulous ones like Nicola Roberts she is the unique one off ‘Girls Aloud’ member, because she is pale and stands out, but mainly when you are younger you want to look tanned.” (Britney: sunbed user, high deprivation, 15-16yrs)

Girls who used sunbeds the most and who were most dissatisfied with the way they looked said they wanted to look more like the models who had had cosmetic surgery, who used sunbeds and were not naturally dark skinned. For

example, four girls liked the image of Katie Price; this particular celebrity is known to use sunbeds, she has also had repeated breast enhancements, teeth veneers and facial Botox and she appears on television regularly in biographical programmes and reality television shows. Most participants in the focus groups and the majority of those in the one-to-one interviews felt that the image that this celebrity model portrayed was healthy but “fake”. Although young people preferred darker skin or the “natural look” they also disliked the “fake look” or “Barbie Doll” appearance. They perceived this image as cheap and unappealing.

FG8 “Katie Price ...I don’t know, I like the more natural ones ...she is just so fake, she looks plastic...she is just so orange and that is totally fake.” (Non-sunbed user,boy, 15-16, mixed deprivation).

In contrast to this fake look, girls explained that they liked naturally darker celebrities. Celebrities from mixed race backgrounds were the ones who were most admired. This may go some way to explain the attraction to the natural look. Their idols were naturally darker and they admired their image as well as their success. To some extent they may have also associated success with having darker skin.

FG2 “I think people like Nicole Scherzinger (Pussy Cat Dolls pop group) I like the way she is dead brown, people look at her and think oh, I wanna be the same colour because it looks nice being tanned.....(response from another sunbed user) Yes, but the difference is she is naturally like, exotically tanned and people are just trying to copy her but they are tanning in the wrong way if that makes sense.” (Sunbed users, girls, 15-16, high deprivation)

Some of the boys said that they also preferred the more naturally tanned celebrities and they found them more attractive. They did however dislike the images of celebrities who looked like “Barbie dolls”; they suggested that women

who had a lot of cosmetic surgery and extreme looking tans were likely to be less intelligent and this image was not as appealing to boys.

“There are only a few though like Madonna and Katy Perry they are nice (Referring to pale celebrities). It is probably not all just about the tan, Katie Price is attractive and is tanned but I don’t like her because she is a bimbo....she is plastic, fake they should be pretty and tanned but should have something upstairs too ..(laughs).” (Josh: sunbed user, high deprivation, 15-16)

4.2. Improving self-esteem and confidence

Tanning to increase self-confidence

Girls referred to increased confidence following a sunbed and tanned look. Charlotte was from an all-girls’ school from a middle social class. She talked about how her confidence increased because she had a tanned appearance after using sunbeds, the emphasis was put upon looking good and looking healthy.

“I felt better, I felt browner, even after the first time. When I came off I felt a lot better about myself. ...it makes me feel happy... like more confident, this is important to me it makes me look nicer and healthier, I feel better and more confident with myself” (Charlotte: sunbed user, mixed deprivation, 15-16)

Several participants talked about needing to have a tan as part of their overall image and described how not having a tan would leave them feeling less confident. Some participants felt an enormous weight had been lifted from their shoulders being darker, rather than having to worry about getting a tanned appearance with make up or false tan. Gemma illustrates how most girls felt about their increased confidence.

"I think it makes me feel more confident with myself because I am quite pale. It gives me a bit of extra confidence. It goes better with clothes and stuff if you are brown, like..... If you are not tanned and you wear blue or red then you looked washed out, but if you have a tan it looks better because your skin tone matches.....I feel better, it clears my skin and makes me feel more confident with myself, so having that confidence makes me feel more pretty when I am tanned." (Gemma: sunbed user, mixed deprivation, 15-16 yrs)

Danielle described a certain amount of pressure. She felt constrained by the need to conform to a certain image or look, and that it required a lot of time and effort. She intimated that she was stressed by this, explaining that this was a burden and talked about being brown as a "weight off your shoulders", which could have indicated a great deal of worry and pressure was being self-managed. Danielle had tried fake tan but also felt that the effort to apply it was too great. The sunbed became an easier option for her.

"You feel more confident, you want to do more things because you don't have to put as much effort in making yourself go out and stuff and it is a weight off your shoulders." (Laughs). (Danielle: sunbed user, mixed deprivation, 15-16)

Some young people explained that they felt positive physical affects from using a sunbeds, feeling fresh and revived. Britney was in year 11 in a school in a deprived area. Using a sunbed and achieving a tanned look also made her feel confident and physically better.

"..the main reason is for the attraction and I reckon it makes me feel confident, like nowadays you would not go to a party without a tan, that is like no way, you have GOT to have tan on, coz you do feel a bit like, sometimes we feel yuck and when you haven't even got false tan on you

feel arrrh.....I FELT GREAT you feel really nice and fresh, you feel well confident, really confident and it does clear your skin and as soon as the wind hits me I feel like a superstar, I don't know I felt that I looked nice.”
(Britney: sunbed user, high deprivation, 15-16yrs)

Chloe explained the importance of feeling good about herself. An increase in her self-confidence not only enhanced her mood but it also affected the degree in which she engaged socially and at school.

“Well for instance when you don't feel good about yourself your whole day is down, but if your think you look nice then that makes everything else feel nice, do you know what I mean? If you feel that you don't look nice you won't feel confident in speaking to other people. When you feel down you are moody, when you think you look good you are happy and joyful and you want to do things...and stuff.” (Chloe: sunbed user, high deprivation, 15-16yrs)

Positive comments and improved self-esteem

Many participants in both focus groups and in depth interviews felt that they had to be tanned. Young people spoke about how receiving positive comments and attention was a major factor in improving young people's self-esteem. Positive comments about skin colour also reinforced the views that a tan was a good thing and comments referring to looking well also extended to being healthy and looking healthy. The use of the word 'healthy' is often used in society to compliment someone who has returned from a holiday with a tan. “You look healthy, have you been away on holiday?” or “you look well”. Perhaps it is a conversation starter, or individuals wanting to express kindness by passing compliments, nevertheless it is a common dialogue and one that was reported by the participants in this study.

“Yeah like having darker hair and just going out and stuff. And I suppose when people comment how nice you look when you are tanned it makes you feel good.” (Jammie: sunbed user, mixed deprivation, 15-16yrs)

“yeah, people say you look tanned today or you look nice and stuff like that and that makes you feel better, when you are really pale people also say oh, you look really ill today and I think great.” (laughs). (Abbey: sunbed user, mixed deprivation, 15-16yrs)

Three out of the four boys who were interviewed reported that positive attention and comments made them feel better about themselves. Craig enjoyed the positive attention and said that this made him want to continue to use sunbeds.

“You do get positive messages from people like your skin looks good and that you look healthy.....When you get compliments you are bound to like that aren't you? so that makes you want to carry going on them.” (Craig: sunbed user, high deprivation, 15-16yrs)

“If your skin looks good and you have a tan too, people say, ‘oh you look healthy or have you been away’, so that kind of makes you feel good about yourself.” (Steve: sunbed user, high deprivation, 15-16 yrs)

Andy was concerned about his negative body image partially due to being overweight and because he had spots. Andy was less clear than some of the other young people about his motives for using sunbeds. He said he used sunbeds to clear his spots, but he enjoyed the positive attention a tanned appearance gave him. The following excerpt highlighted the deeper psychological aspects associated with the desire to be tanned. I probed for more detail about Andy's motives for using a sunbed. For Andy there were other factors that affected his body image. During the interview Andy tried not to

let his guard down, but eventually worries about his weight emerged as a motivating factor for his desire for a tan.

Andy's case study: Excerpt from Andy's interview reflecting wider issues of self-esteem

"In what way do you become sad, can you tell me more about that?"

(Interviewer)

"I just get anxious about getting spots and the way I look to people you know what I mean? At this age you worry about what you look like I suppose don't yeah!" (Andy: sunbed user)

"Do you get any physical feelings?" (Interviewer)

"I get, like stroppy with my body, almost like your just dragging your body around, you feel better when you are on them, it does a lot for my confidence using a sunbed." (Andy) "How long do you think you will continue to go them for? For example when your spots stop?"

(Interviewer)

"I don't know it sounds stupid but I think, if I think there is something wrong with me and I go to the Drs and he says there is something wrong with me then I think that is when I will stop...but like I want to stop..... if I can get rid of my spots I would stop using them." (Andy)

"It is hard for you isn't it because you say if you come off the beds you may get spots back?" (Interviewer)

"Yes I can either get spots and be ratty and miserable or I can go on them." (Andy)

"You explained that getting spots gets you down but you also mention the way you look can sometimes bothers you-----can you tell me what you mean?" (Silence for about 5 seconds) (Interviewer)

"Well ---(shifts uncomfortably) it's the way you look isn't it I am not the smallest of people like." (Andy)

"So are you saying that your size affects you?" (Interviewer)

"Yeah a bit." (Andy)

"So you have a lot more worries and anxieties then?" (Interviewer)

"mmm." (pause). Andy

"Does going on a sunbed help you to not worry so much about your weight?" (Interviewer)

"...(pause).....I suppose it does yeah, well it probably makes me feel less conscious about my weight when my skin is clear, I don't know why but it could be the way I feel coz I have no spots. I don't know I just feel slimmer." (Andy)

"You feel slimmer!" (Interviewer)

"Yeah it kind of stops you thinking so much about it, coz if you have a dead spotty face and you feel bad about that and you are over-weight you are like a geek aren't yeah? But, if you look good with your skin's clear it doesn't matter as much do you understand me like...I don't.... it just does." (Andy)

Both positive and negative comments from friends and families effected young people. They spoke about how sometimes friends teased them or even intimidated them. In some extreme cases this teasing bordered on bullying. Britney is in year 11, she felt that having a sunbed improved her self-esteem. Her self-esteem was partially low because of comments and sometimes playful taunts from both boys and girls and also because she was expected to have brown legs by her dance teacher. This type of teasing was commonly experienced by sunbed users. Boys who were non-sunbed users were likely to tease girls about their pale legs and sunbed users who were girls were more likely to tease girls who were pale non- sunbed users.

Britney's case study: Excerpt from interview reflecting teasing and intimidation

"I do a lot of dancing so my teacher says, get your legs tanned. The main attraction is tanned legs in the school all the boys tend to go oh you have got white legs so you really do want to have tanned legs." (Britney: sunbed user)

"Does that happen a lot with lads?" (Interviewer)

"Yeah, all the time." (Britney)

"What do they actually say to you?" (Interviewer)

"Eeeee.. you've got white legs and they pull your socks down.....so..." (Britney)

"So can that be quite intimidating?" (Interviewer)

"Yeah, so girls think they have to wear tights or get a tan so these lads are knocking your self-esteem." (Britney)

"So if they say that and you have white legs, how does that make you feel? (Interviewer)

"To tell you the truth I try to ignore them. I say, you know what it is nice to be natural sometimes because some girls are really over the top and are orange, or wear tights, I don't get affected by them but some of my mates do." (Britney)

"Do you get positive comments when you use the sunbeds?" (Interviewer)

"Yeah you do get comments like you are nice and brown, you look shiny." (Britney)

"You were talking about self-esteem before does that lift you? (Interviewer)

"Yeah it lifts your self-esteem right up and influences you to use the sunbeds again." (Britney)

During focus groups eight, boys referred to being pale as being undesirable and negative. They joked about how pale one celebrity was. This is the type of teasing girls raised during the focus groups. Whilst this was seen by boys as playful banter, for girls it affected their self-esteem.

*“What about this photograph of Nicola Roberts?” (Pale pop singer)
(Interviewer)*

FG8 “She is too pale, she needs to go on the beds.(Boys all laugh).....“yeah she gives Casper a run for his money.” (boys all laugh again. Casper is a cartoon ghost character). (Non-sunbed user boy 15-16, mixed deprivation).

4.3. Acting out social roles

Girls under pressure not to be pale

Young people spoke about how difficult it was to go to a party or friends gathering without being pressured to look good. They discussed how girls tried to compete to look their best, but that they were unlikely to admit that they had gone to great lengths to look good. Danielle’s comments reflect the feelings of many of the young girls who used sunbeds. She felt very self-conscious, it felt almost like she had put herself under tremendous pressure to look good and feel comfortable.

“So if you were going to a party and you did not have the chance to use a sunbed how would you feel going to that party?” (Interviewer)

“I would feel really pasty and conscious of looking too pale and stuff and that people would think I was too pale, so I would want to go home and put more make-up on or something like that.” (Danielle: sunbed user, mixed deprivation, 15-16)

Feeling relaxed and pampered

Young people also described positive physical effects after using sunbeds. They spoke about the physical benefits that they received from the sunbed experience. Erin felt relaxed and pampered. Many of the participants felt that having a sunbed was their opportunity for personal time out with friends, or a place to chill out. For some the sunbed studio became a place of sanctuary. Participants felt dopey and relaxed, calm, happy and fresh. They also enjoyed the warmth of sunbeds particularly in the winter and liked the cold air hitting their faces when they left the salon.

“My mum started taking me because she started using them and I just felt dead relaxed and calm and it felt dead nice as if I had been pampered or something.” (Erin: sunbed user, mixed deprivation, 15-16)

“It makes me feel really happy, that I have been on one, but it also makes me feel really tired after, it really sleepy and stuff”. (Jammie: sunbed user, mixed deprivation, 15-16yrs)

“Using a sunbed makes you feel relaxed. You can take a little step out of your world and it has other advantages like getting a tan which makes you happier and less stressed and stuff, you get out the house a bit. Like you walk into a shop and you see other people with a nice tan, just a good feeling and it makes you feel confident.” (Danielle: sunbed user, mixed deprivation, 15-16yrs)

Feeling more mature

Participants felt more mature using sunbeds as this was often seen as an activity that their older peers, sisters or mothers did. In a sense it was seen as part of growing up and becoming a woman for some of the girls. They felt that they were more independent and had more control over their lives. Some saw using sunbeds as an example of growing up

“Well when you are young you always want to look older so by going on the sunbeds you look older and more grown up. When you are young you get treated like a baby and because I wanted to be treated older I went on the beds and do things that older people do.” (Chloe: sunbed user, high deprivation, 15-16yrs)

“Yeah you feel more grown up doing adult stuff and when you get on the beds without having to show ID it is a bit like getting served alcohol, you have achieved something in a weird kind of way.” (Craig: sunbed user, high deprivation, 15-16yrs)

4.4. Discussion

In this chapter I have tried to capture young people’s views about their appearance in relation to sunbed use and how factors like perceived physical benefits, sense of self-esteem, body dissatisfaction and confidence affected them. The following discusses how sunbed use affects young people’s ability to feel part of a society, acting out the social roles that make them feel most comfortable.

Positive and negative impacts of a tanned appearance

Looking healthier with a tan.

Young people in my research emphasised that a tanned look was a healthy look. This belief appeared to be based upon several motivational factors. Firstly: the desire to conform to social ideals often portrayed in fashion magazines and with the portrayal of a certain body type and body image of celebrity icons. Secondly, the link between positive messages about their own appearance and their body dissatisfaction and reduced self-esteem (Keesling and Freidman, 1987; Martin et al., 2009). De Souza et al., (2004) highlighted three popular beliefs that have influenced tanning behaviours, that a tan is healthy, that a tan is attractive and that tanning prior to sun exposure prevents the “undesirable effects of future exposure to the sun”.

For women the pursuit of appearance ideals can contribute to, dating, marriage, popularity and job opportunities (Snow and Harris, 1985). These may be aspirational and almost too far ahead to contemplate for some young people; in my research participants were keen to be positive and independent. However, the objectification of women by our society can become internalized by some women, resulting in negative psychological outcomes. Using Fredrickson and Robert's (1997) objectification theory, sexual objectification occurs when a woman or adolescent's body is treated like an object. This is often portrayed in the media. Women and adolescents begin to internalise society's view and eventually see themselves in the same way. Slater and Tiggemann (2002) concluded that self-objectification was present in adolescents as well as women and described how they may learn to view their own bodies as objects in which they themselves are evaluated by others based upon their appearance alone. This is reflected in my findings, some young people were fixated with their appearance with the desire to achieve a celebrity look.

Cultural ideals about appearance are communicated every day in magazines, within television and the beauty industry and by peers and family. Proponents of the sociocultural theory suggest that the media plays an important role in body dissatisfaction which results from unrealistic ideals of attractiveness (Hargreaves and Tiggeman, 2002). My research supports these findings. Young people look up to celebrity icons and these are very often likely to be aspirational characters. Nearly all the young girls involved in the one-to-one interviews and focus groups admired a successful, pretty, slim and tanned celebrity as their idol. Young girls wanted to look up to these characters and in many cases wanted to set their own aspirations and goals to emulate the image they desired. Older girls in both focus groups and one-to-one interviews said that they were influenced more by the media and celebrity icons and felt more under pressure to conform to social ideas relating to appearance than younger participants articulated.

Poor body satisfaction by participants in my research was a factor for many young people. They often appear to play down any positive attributes they may have had and instead focussed upon their own negative body image. They were more likely to focus on their idols and they would set new aspirational goals to look like them. Other researchers have found that body satisfaction decreased in girls aged 11 to 15 when they were exposed to idealized media images, (Durkin and Paxton, (2002). In this Australian experimental study they found that adolescents exposed to idealised female figures had a negative effect on body satisfaction and increased the likelihood of depression and anxiety. There is little empirical evidence in the literature however, relating to younger sunbed users. There has been a great deal of evidence to suggest that decreased body satisfaction may occur because of initial negative thoughts about body image and exposure to ideal female body ideals, (Heinberg and Thompson, 1995; Prosovac et al., 1998; Groesz et al., 2002; Kim and Lennon, 2007).

Young people who participated in the thesis research were less likely to admit that tanning made them more attractive. However, there is a large body of evidence that supports the findings that individuals use sunbeds to be more attractive. Hillhouse et al. (2000), suggest that as appearance motivation increases positive attitudes towards sunbed use as a means to look more attractive also increases, and that this is likely to have more influence on the intention to use sunbeds. There are several studies that report that people who use sunbeds think that using a sunbed has a positive effect on attractiveness (Knight et al., 2002; Geller et al., 2002; Branstrom et al., 2004; Lazovich et al., 2004a; Danhoff-Burg et al., 2006; Hoerster et al., 2007; Schneider and Kramer, 2010). Within the findings in the current research the word “attractive” may well have been internalised to lessen external views about their intention to be more attractive to others. Thus, young people may have been reluctant to admit that they looked more attractive. Greene and Brinn (2003) identified perceived attractiveness by using a sunbed was one of the strongest predictors of tanning

behaviours. Although this was not expressed in my research study, achieving a tanned appearance however enabled sunbed users to exhibit their perceived attractiveness to others without them having to actually admit this. In other words the tan was a vehicle for them to look more attractive, but this was played down as they did not want others to think that they were vain or self-indulgent.

Young people were more likely to articulate that tanning was for their own benefit rather than for the benefit of anyone else and they wanted to look good for themselves and feel good about themselves, thus, enhancing their sense of wellbeing. Girls may have found it difficult to engage with the word attractive because they may be seen by their peers as ego-centric, so they played down the word and instead talked about feeling good about themselves. This sense of wellbeing has been reported in the literature by Dissel et al. (2009).

Darker natural look

Young girls in my research wanted a “natural” tanned look and they preferred olive Mediterranean looking skin. If they already had olive skin they wanted to be darker. Most aspirational idols were of mixed race and had naturally dark skin and these were the celebrities that girls wanted to be like the most.

Young people used fake tanning products and would use them as an adjunct to their sunbed use, either to achieve a darker colour or as an emergency if they could not get to use the sunbeds. Participants did not like to apply the fake tan, they thought it was odorous and streaky and overall provided what they described as a “fake” look. These findings are not wholly consistent with a Canadian study of 12 to 16 year olds by Shoveller et al. (2003). In this study young participants felt that applying fake tan was anti-social and they were also less likely to use artificial tanning appliances and products. They preferred the natural process of the sun. However, what was consistent in both this study and my research was that young people thought that artificial tanning creams were “fake” that an unnatural look was achieved and that using artificial products may

have been “giving in” to vanity and this was not viewed as a positive outcome. Participants in my research admired and respected the natural look.

Sunbeds were being used to clear spots

Boys said that they used sunbeds to clear their skin complexion. Although young people knew the dangers of sunbeds they chose to hide behind their doctor’s advice. They claimed that they were advised by their general practitioners to use sunbeds to clear their skin. This in turn enabled mothers to support their child to use sunbeds either by accepting that this was a legitimate reason for using sunbeds or for the mother to speak to salon staff to authorise sunbed use for their child. Mothers may have trusted the advice provided by the doctor and were not likely to question this.

Improving self-esteem and confidence

In the thesis research young people’s self-esteem was increased by using a sunbed and obtaining a tan, this in turn increased their confidence. So greater satisfaction with their perceived body image or tanned appearance in this case, has improved self-esteem and confidence. This however, is a fragile state for young people to maintain as consistently achieving a tan can be difficult.

There is potential for psychological disruption such as depression, stress, obsession and acute anxiety for young people. This is particularly relevant now in the UK following the introduction of legislation banning under-18s using sunbeds as sunbed access will be more difficult. The pursuit of self-esteem has been highlighted by Croker and Park (2004) who suggest that people with higher self-esteem believe they are intelligent, popular, and attractive. They emphasized the importance of pursuing improved self-esteem can be as important as actually achieving self-esteem. They suggested that self-esteem has important motivational consequences as individuals try to feel better by trying to pursue activities that make them feel good and therefore, this can boost their self-esteem. There are likely to be inherent dangers with young people

who set self-esteem motivational goals, as they may feel that they will have failed or not achieved their goal and this may be very short term so they will fluctuate between feeling worthy or not. Dykmann (1998) explained that success at self-esteem goals not only means success and therefore improved self-worth, but failure can lead to feeling worthless.

Both girls and boys in my research said that their confidence was increased because they looked healthier or that their image was better. There are no qualitative studies that I found that showed that self-confidence was increased following sunbed use in young people. For girls a tan was also an accessory or an important part of their outfit and image, without it they felt that something was missing. They talked about a tan as being as important as hair make-up and clothing and that they would dress in colours that would complement their skin tone. Young girls explained that a tan from sunbeds was really convenient because they did not have to spend a lot of effort putting on make-up or artificial tanning cream. The sunbed tan was reliable and reduced the amount of pressure to look good or to conform to the social ideal.

Issues of self-esteem were revealed more during one-to-one interviews than within focus groups and was discussed more with older participants aged 15-16 years. This may have been because participants did not want to portray themselves as being vain, as most of the self-esteem issues were related to appearance and looking more attractive. Another possible reason for a lack of discussion about this in focus groups may have been because participants would reveal their vulnerability to their peers and this could be viewed as a sign of weakness by some.

Positive comments and improved self-esteem

One of the main motivations for using a sunbed and for improving self-esteem was by receiving positive comments and messages from other people. All

participants enthusiastically explained how they had received positive feedback from peers and family.

These positive comments were to some extent self-perpetuating and reinforced the individual's belief that their appearance was positive and therefore their self-esteem and confidence was enhanced. Participants generally understood the risks associate with sunbed use and did not see that as so important, but the desire to improve self-esteem was greater. This is consistent with the work of Banks et al. (1992), who support that body image and self-esteem is seen as a greater priority in the face of social pressure than the knowledge about long-term harmful effects of UVR.

Acting out social roles

According to some research studies social influences may be the most important predictors of tanning behaviour in adolescents (Haas 2007; Boldeman et al., 2001; Vogt Yuan 2010). Acting out the social role was important to young sunbed users in my research, but they were more affected by their own image and whether this was acceptable in society. The need for social interaction became a secondary need following personal satisfaction with body image, confidence and self-esteem.

Participants emphasized the need for social acceptance and individualism. Thompson et al. (2010), conducted a prevalence study of sunbed use of young people in England. In this study of 15-17 year olds there was a statistically higher use of sunbeds in young people from lower socio economic groups. Liverpool had the highest overall sunbed use in the study and has large areas of deprivation. This suggested a direct link with deprivation and sunbed use. However, this confirmed that individuals from socio-economic areas were more likely to use sunbeds.

Girls felt under pressure not to be pale. They felt uncomfortable in social setting if they did not have a tan or they were not concealed with make-up. This was due to a fear of being recognised as having a pale complexion. Young people felt a great sense of fear and increased pressure to not be pale and to not be seen to be pale. They would avoid social situations unless they already had a tan or fake tan or where able to apply make-up.

Young people described feeling better about themselves following sunbed use but they also experience positive physical effects. Participants using sunbeds felt more relaxed, pampered and fresh when they used sunbeds. They described a feeling of adrenaline and satisfaction after using them. This may be due to release of endorphins reported in Cui, R et al. (2007). These findings about physical benefits in my research on 14-16 year olds adds to the present research on adults, (Dissel et al., 2009; Mawn et al., 1993; Branstrom et al., (2004); Cokkinides et al., 2002; Danhoff-Burg et al., 2006).

Some sunbed users used the time on sunbeds for them to gather thoughts, to have their personal space and solitude. For others it was a social event. Young people were bored and said that they had nothing to do. Meeting up with friends and socialising together was important to them. Moreover, socialising and getting a sunbed made them feel more mature. This finding differs from Demko et al. (2003), who reported that girls who thought they were more mature were more likely to use sunbeds. In my findings it was the result of using sunbeds and the social interaction that provided young people with the feeling that they were more mature, being able to act out what their peers and older family members were doing. They were able to claim bragging rights. They saw sunbed use as a potential step in growing older, having more responsibilities and independence. This in turn added to their overall feeling of confidence and self-esteem.

Some participants in my research wanted to use a sunbed because it made them feel warm, especially in the winter. They liked the feeling of going out of the cold into a salon and then coming out feeling refreshed and happy, this has also been reported by (Brandberg et al., 1998; Hillhouse et al., 2000; Cokkininedis et al., 2002). Hillhouse et al., (2002).

4.5. Conclusion

Improving self-esteem appeared to be the main motive for young people to use sunbeds. However, young people were quick to dismiss the notion that they wanted to be attractive for others. They were more likely to articulate that appearance related benefits were internalised. They wanted others to know that they were only tanning for their own satisfaction and not for others. Positive comments from peers and family improved self-esteem and young people enjoyed the more positive responses to this.

Improved self-esteem and feelings of self-worth appeared likely to increase young people's overall confidence within their social influences. For some, there were more complex self-esteem issues to manage. Insecurities around body image and perceived social ideals played an important role and for some young people like Andy these were complex. For Andy the drive for social acceptance and poor self-esteem culminated in a need to continue using sunbeds. Addictive tendencies may have also played a part and could have had a considerable impact on his psychological wellbeing. Andy feared the introduction of legislation to ban under-18 using sunbeds, which would potentially hinder his ability to maintain the status quo for which he had become accustomed. Societal pressure to fit in also played a role. This may have also impacted on improved self-esteem because acceptance by peers was important to young people. Acting out the adult role enabled young people to gain respect, it made them appear and act more independent, autonomous and mature, and this provided them with enhanced confidence and improved self-

worth and self-esteem. For young people a tan was like a brand identity, it was a statement about how they live and fit into society.

Chapter 5: Results: Maternal, sibling and peer influences

Several studies report a relationship between sunbed behaviour in individuals and the tanning behaviour of significant role models including peers and parents. Sunbed use in the UK is fairly common practice and they are mostly frequented by adults particularly by women. Often they have been using sunbeds for several years and sons and daughters will almost certainly know that their parent is using or have used a sunbed. Young people might also be aware if older siblings are using sunbeds. As young people mature they might be tempted by or with peers to try to use a sunbed. For young people sunbed use can be viewed as one of the social norms that they are exposed to and know happens daily such as drinking, alcohol consumption and smoking. Parents will have many concerns about what risk behaviours their son or daughter is involved in and might be less worried about sunbed use because it has had relatively little negative media coverage in recent years, unlike smoking, drinking, drug misuse and sexual activity.

In this chapter I will discuss the role of mothers and siblings as potential sunbed influencers or passive supporters of sunbed use. I will highlight how the participants reported that mothers directly and indirectly influenced their sunbed use. I will also discuss how peers influence and motivate young people to use sunbeds. The data reveal the use of various strategies to coerce or trick parents to facilitate risky sunbed behaviour.

5.1. Maternal and sibling influences

Within both focus groups and one-to-one interviews mothers and sisters were reported to be a major influence on girls' sunbed use. Participants discussed how their mothers had spent years using sunbeds from an early age and had matured into adulthood having used sunbeds. Participants also explained how

their mothers continued to use sunbeds whilst their children were growing up into teenagers. Mothers' frequent use of sunbeds was described as a normal every-day activity. Sisters have also influenced younger sister's sunbed use. Older sisters appeared to influence younger siblings and were viewed as more current and "cool". Young girls said that using sunbeds made them feel more mature. Following in the footsteps of older sisters and mothers was a way of demonstrating that they were beginning to mature into independent women.

Girls said they felt more confident attending a sunbed session with their older sister. They could be sure that older sisters would look after them and advise them on how long to use the sunbeds for. Catherine used sunbeds regularly and either went with friends or her family. When she first used sunbeds she felt more confident attending with her older sister. Catherine explained that this was because her older sister was familiar with the procedures and knew the salon staff, which made it easier for her to access the sunbeds without the staff questioning her age. There were greater opportunities to attend sunbed sessions with a sister than with friends because more often than not they lived in the same household.

"The first time I went with my older sister, she knew what to do and it made me more confident to get on them....." (Catherine: sunbed user, mixed deprivation, 15-16)

"My sister encourages me, so she says oh come on, come on the sunbed with me, and my mum is not too bothered unless I get burned." (Jammie: sunbed user, mixed deprivation, 15-16yrs)

Alexis explained how her sister encouraged her to use sunbeds. She was intrigued by the sunbeds and wanted to experience them but lacked the courage to try them until her sister offered her support.

"I was scared, I did not even want to go on them, and my sister said you may just as well go on them now.... I have bought you two tokens. So I went on for 9 minutes and it was alright, so I started to go on them regularly then.... I wanted to go on them to see what it was like for the experience. My mates were going on them a lot at the time so like; I just wanted to see what it was like as well". (Alexis: sunbed user, low deprivation 15-16 yrs)

Most young people who used sunbeds said that they had simply followed in their mother's footsteps. Young people claimed that their mothers were aware that they used sunbeds, but they did little to prevent them from using them. It may have been difficult for mothers to challenge their children because they were also using sunbeds and this may have appeared somewhat hypocritical. Young people used this to their advantage, leaving little justification for them being told not to use sunbeds by their mothers. Steve and Catherine highlighted this attitude.

"My dad doesn't know (About sunbed use) but my mum does, she uses them anyway so she understands that they make you feel better about yourself. Me dad wouldn't have a clue. Me mum isn't too keen for me to go on the beds but she can't really say nothing coz she uses them too." (Steve: sunbed user)

"My mum, she uses sunbeds so can't really tell me not to use them, I will say to her, yeah but you go on them so... (laughs)." (Catherine: sunbed user, mixed deprivation, 15-16yrs)

Participants talked about how mothers disliked them using sunbeds despite using themselves. Young people felt that this was because their mothers did not want to be seen to be supporting their child's sunbed use and did not want to be viewed as a bad parent. They discussed how some mothers preferred to use

sunbeds separately to detract from any perceived external influence by them. This may indicate that mothers were aware of the dangers of sunbeds or that they knew that younger people are advised not to use them. This was highlighted in the following focus group.

FG6 “.....my mum does not like me going on them. She would rather me go on my own than with her because she does not feel like she is doing the good parent thing, she would rather me go on my own. She said she feels that she would be seen as supporting me using the sunbeds, so this way she does not lose face.” (Sunbed user girl, 15-16yrs, high deprivation).

This FG5 Group interaction illustrates how mothers who use sunbeds don't want others to know that their daughters are using them too and will try to disassociate themselves from their daughters sunbed use. All-girls' school low deprivation area aged 14-15yrs.

Participant “...my mum does not like me going on them, she would rather me go on my own than with her because she does not feel like she is doing the good parent thing she would rather me go on my own. (Sunbed user)

Participant “How old have you got to be to go on them?”

Participant “You have got to be 16”.

Participant “16!!... thought you had to be 18.” (Non-sunbed user)

Participant “You see I am a bit like you xxx, my mum doesn't want me to go on the beds, she uses them too but doesn't want anyone to know about me using em.” (Sunbed user)

Participant “My mum did not allow me I just went on. I say to my mum like you can go on them, why can't I go on them?” (Sunbed user)

Participant *“How do you get on them then if you have to be 16. Do you just say I am 16? (Non-sunbed user)*

Participant *“It is 18 now isn’t it?”*

Participant *“But they get shut down if they get caught.”*

Within the one-to-one interviews maternal influence and the influence of older sisters came across as a very strong reason for young people to start or continue to use sunbeds. This was reinforced either the role model of an older sister or the ambivalent acceptance from the mother. In the focus groups there seemed less emphasis on maternal influences, unless it was related to borrowing money for sustaining sunbed sessions. Mothers were first line support for financial hand outs for sunbeds. Most of the sunbed users within the focus groups had a mother or a sister who used a sunbed, young people explained how mothers supported their sunbed use indirectly by providing them with money to access them. In the one-to-one interviews participants explained that whilst some mothers would avoid going on the sunbed with their child some actually went on with their daughter(s). In some instances participants reported that their mothers’ influence helped them to access sunbeds easily. For example, when a mother attended with a daughter, salon staff were more likely to let younger people use the sunbeds and were less likely to question their age. Camile provided a typical response.

“No because I went with my mum they knew I was with my mum and she knows them so they didn’t ask.” I don’t go on my own, I go with my mum or one of my mates”. (Camile: sunbed user, low deprivation 15-16 yrs)

Most young people said that their mothers disapproved of them using sunbeds but they did little to stop them using them. They were rarely challenged by their mothers for using them.

“My mum and my sister use the beds and my mum keeps telling me to cut down on using them. My mum has used them for years but she only uses them if she is going to a party or a special night out. She keeps threatening that I will have old skin like her.” (Mandy: sunbed user, mixed deprivation, 15-16yrs)

Participants explained that mothers would knowingly finance sunbed use but young people had a variety of other strategies they employed in order to obtain money to use sunbeds, such as, using pocket money, dinner money or getting money off other relatives. Fathers were seen as “easy pickings” as they were less likely to ask what the money was intended for, and even if they did ask, daughters skilfully extracted money from their father’s pockets.

*“Oh I see, your mum tops the tokens up and you all use them!”
(Interviewer)*

“Yeah.” (Camile: sunbed user, low deprivation 15-16 yrs)

“What would your mum say if she found no token left because you had over used them?” (Interviewer)

“She would just pay more. My mum would let me use her course of sunbeds,” (Camile: sunbed user, low deprivation 15-16 yrs)

Gemma received £80 a month pocket money directly into her bank account, with no questions asked about what she spends money on because she managed her own spending independently. This enabled Gemma to make autonomous decisions, but could also be seen as relinquishing a degree of responsibility from her mother as it does not directly appear that she was providing handouts for Gemma to use sunbeds. Gemma’s mother knew that she used sunbeds regularly.

"I get £80 pocket money a month put into my bank on the 1st of every month so I will spend a tenner a month now on sunbeds" (Gemma: sunbed user, mixed deprivation, 15-16 yrs)

Some participants used their pocket money, dinner money or lied and said that they needed money for school. Participants usually asked their mother for money, they were often viewed as the soft touch and were more understanding when it came to issues of body image. In many of the cases mothers knew that their children were using sunbeds. If this strategy failed, fathers or grandparents could be called upon. Participants reported that their fathers were often duped into providing sunbed money to their son or daughter. Participants however, were worried about their father discovering whether they were using sunbeds, as they feared the criticism they would receive.

"My dad would have a right go of me if he knew the money was for the beds, but I just don't let on." (Jordan: : sunbed user, low deprivation 15-16 yrs)

"I use pocket money or I ask my dad for money. I just tell him it is for school and usually gives me money." (Mandy: sunbed user, mixed deprivation, 15-16yrs)

"Paid for them with my pocket money if I did not have enough pocket money I would use my dinner money." (Charlotte: sunbed user, mixed deprivation, 15-16yrs)

"I use my pocket money but I only get about £10 a week. So sometimes I have to save some of my dinner money or ask for stuff from my mum and dad. I just say I need it for school or to go out at the weekend, but instead I will go on the beds." (Craig: sunbed user, high deprivation, 15-16yrs)

Jordan was asked how she would pay for her sunbeds if her mother stopped funding her sunbed sessions. Jordan reported that her mother supported her sunbed use but she did not tell her father in fear that he would try to stop her using them. She did not appear to talk about her father in a respectful way during this discussion.

“My dad does not know....He would go mad and say what are you doing...but I don’t really care what my dad says to be honest..... I don’t take it into consideration, so I don’t care what he says.” (Jordan: sunbed user, low deprivation 15-16 yrs)

“If your mum stopped paying for your sunbed sessions and your 9 minute session went up to £10 what would you do?” (Interviewer)

“Yeah I would get it off my dad. I would say dad I need a tenner and he would not ask why. I would say it has got nothing to do with you.” (Jordan: sunbed user, low deprivation 15-16 yrs)

A few mothers directly funded sunbed sessions for their daughters. Erin’s mother paid for her sunbed sessions.

“How do you pay for your sunbed sessions?” (Interviewer)

“Well it is £30 for 90 minutes or you can go for £4 for 12 minutes.” (Erin: sunbed user, mixed deprivation, 15-16yrs)

“Do you get pocket money for that or does your mum pay for it?” (Interviewer)

“My mum pays for it.” (Erin: sunbed user, mixed deprivation, 15-16yrs)

Alexis felt comfortable attending her local salon because her mother knew the assistant in the salon where she regularly attended for beauty treatments. Alexis's mother may have directly influenced her daughter's sunbed use because Alexis reported that her mother actively assisted her to access them.

"So getting on the sunbeds was that easy? Did they ask your age or anything like that?" (Interviewer)

"No coz I used to go to a sunbed by mine, which was 10 minutes away, the woman I rang, she said how old are you? and I told her and she said alright be careful. But I have started going on the ones just down the road from mine now coz the woman in there does my nails and my eyelashes and all that, and she knows my mum and that dead well." (Alexis: sunbed user, low deprivation 15-16 yrs)

A few participants were able to access sunbed salons without a worry because their parent had a salon, a friend's parent had a salon, or the mother knew the salon owner and was able to get access to the sunbeds for their child. The network of knowing someone in the salon was a key tool that was used to make accessing salons easier for younger people.

"My mates mum owns a sunbed shop so I am used to going around to her mums sunbed place." (Rosie: sunbed user, high deprivation, 14-15 yrs)

".....I don't look 15, I look older, so if they don't let me on I get my mum to come in with me and say I am old enough to go on. If they don't let me go on I will use one that will let me." (Andy: sunbed user, high deprivation, 15-16yrs)

5.2. Influence of peers and friends

Some participants reported that they needed to use sunbeds because they felt under a certain amount of pressure from their peers. Acceptance by friends was important as they wanted to “fit in”. Chloe described how young people aspire to be like older peers because they looked up to them.

“Can you tell me what it was like the first time you used a sunbed.”

(Interviewer)

“Yeah I can remember we really looked up to people who were older than us and we see them go on the sunbeds we were only like 14 or 15 and all our mates decided that we wanted to go on them there was quite a few of us and we went together. We were scared to go in.” (Chloe: sunbed user, high deprivation, 15-16yrs)

Many of the participants talked about how their close friends influenced them to use sunbeds. Indirect influence occurred because of young people’s perception that going on a sunbed was the social norm, encouraged through media reporting, role models and celebrities. Direct influence to use the sunbed occurred through a process of coercion, encouragement, intimidation, alienation and teasing. Girls felt that they did not want to be socially isolated and to be the odd one out, because most of their friends were tanned.

“...because a lot of my other friends use them, as well you get to the point where if all of them are using them then it can’t be that bad. I am aware of the risks and stuff and I know that they are bad for you and that, it is partly the reason why I go on them less, because I don’t want to get skin cancer or anything like that. I suppose if none of my friends went on them I probably wouldn’t go on them because I would have no one to go on with; I wouldn’t want to go on one my own.” (Gemma: sunbed user, mixed deprivation, 15-16 yrs)

FG7 *“Yeah they say like, do you want to walk down? And they don’t want to go on their own so they ask you to go on them and you just do. When I am out with my mates we always end up going on the sunbeds, even if we don’t plan it we seem to always end up on the beds.” (Sunbed user girl, 14-15, high deprivation).*

Most female participants denied being under pressure from boys and insisted that they used sunbeds for their own reasons. Amy hinted at feeling internal pressure to be accepted by her friends as she felt that she needed to be more attractive. Although Amy denied feeling under direct pressure from boys she appeared to feel pressure to conform to what she believed would be the image that boys would find attractive.

“You said you get a tan for appearance is that so that you look more attractive to boys? “(Interviewer)

“Oh no... I don’t know, I do it for myself. I don’t always have the best relationships so I do it to make myself feel better, so I spend more time on myself then maybe yeah, so maybe a boy may fancy you or like you, so yeah you do it a bit because of boys but I am deadI have to have my hair done, my tan done and my nails done, so I can walk out looking nice. I have a lot of pretty friends and they are really pretty and I think feeling like the one who is not as... you have to try harder does that make sense?.... so that is how you feel about it. You want to go out in summer clothes as well and not be the pale one when everyone is brown and stuff.” (Amy: sunbed user, mixed deprivation, 15-16yrs)

For Britney she felt pressure to conform to being attractive to boys but also maintained the need to feel good about herself. Her stated motivation was to look better but the result was also to improve confidence and self-esteem.

Britney hinted about the potential pressure to get a tan to impress boys and the potential backlash if she did not conform, suggesting that she would have had to be brave to not follow the trend. Britney also described several different types of peer groups who influenced her decisions about her motivation for using sunbeds. Britney reported that she was influenced by boys because she wanted to look attractive, by friends because she wanted to fit in, and her teacher because tanned legs in dancing was seen as the norm.

“You do it for boys and yourself because you do like to feel good about yourself but when boys like nowadays the way the world is, girls have got to be attractive for boys, so they have to get a tan.....well they do in this school anyway...(laughs) ...my mates influence me a lot like if we are not doing nothing and we are bored we will go on the sunbeds or say we have been running we will go the sunbeds after so they are like, come with us. So you end up going yourself unless you are brave enough to say no, but you do actually want to go on yourself like.” (Britney: sunbed user, high deprivation, 15-16yrs)

Britney talked about dancing and she explained that it was expected that all of the girls had brown legs. This need to have tanned legs was actively promoted at dance class by her dance instructors. Girls were threatened with having to wear tan tights if they did not have tanned legs. Britney and her dance friends disliked wearing tanned tights and would choose instead, to use a sunbed or to apply fake tan.

“.... I do a lot of dancing so my teacher says get your legs tanned. You have to wear tanned tights unless your legs are dark and that is just a no, no. The main attraction is tanned legs in the school, all the boys tend to go... oh you have got white legs, so you really do want to have tanned legs.” (Britney: sunbed user, high deprivation, 15-16yrs)

Some participants made tentative references to being teased about being pale or not being as dark as some of the girls. In the following narrative Charlotte used the phrase “singled out”. This may indicate that there is a degree of intimidation and targeting of individuals by peers.

“What do you think that boys and girls or friends that you hang around with think they think about the way you look?” (Interviewer)

“I think the girls think I look normal like them and not singled out for looking pale, I think boys would find me more attractive with a tan and I would feel better, I feel like I look nicer.” (Charlotte: sunbed user, mixed deprivation, 15-16yrs)

Chloe also hinted that there may be a bit of rivalry or jealousy amongst girls which may lead to intimidation. This was not always overtly portrayed and more often than not was very subtle.

“.....girls will think that you are doing it to impress boys, but then boys won't be bothered. Some girls get jealous of each other because they are browner than others so make even more effort, they don't like it, and so they act like you don't look nice.” (Chloe: sunbed user, high deprivation, 15-16yrs)

Despite many of the participants expressing concerns about intimidation, when they were asked about how they felt about this they generally responded by saying that they were not pressured, they talked passionately about how they would decide themselves whether to use sunbeds or not.

“No I don't feel under pressure, but I think girls are always under pressure, like.... I could come into school or go somewhere without tan because I am tanned from the beds but if I have to wear it I will wear it.”

(Reference to applying artificial tan if a sunbed is not accessed) (Britney sunbed user, high deprivation, 15-16yrs)

“As I said before I don’t really listen to what other people say because I would rather have my own point of view.” (Chloe: sunbed user, high deprivation, 15-16yrs)

Boys also admitted mocking or teasing girls who were either white or what they described as fake and orange. The orange look occurred due to fake tan or persistent sunbed use in certain skin types.

Both boys and girls referred to boys using sunbeds as “gay”. This does not necessarily imply that they thought male sunbed users were homosexual. Young people tended to use the word interchangeably. The word “gay” can mean homosexual in some contexts or it can also mean that it is a little bit sissy, feminine or girly or even silly or daft. They also described sunbed use for boys as odd or unusual. In the following quotes sunbed users and focus group participants reiterated that sunbed use amongst boys appears to be becoming unacceptable. Although Steve used sunbeds, he justified his sunbed use because he claimed he used them to clear his spots and was not using them to obtain a tanned look which he felt would be unusual for a boy.

“.....I don’t think lads would go on them because of pressure from their mates. It’s a bit odd like, if they did, you would think they were a bit girly?” (Steve: sunbed user, high deprivation, 15-16yrs)

“My mates think I am gay. None of them use sunbeds anymore. They used to use them but hardly any of them go now.” (Josh: sunbed user, high deprivation, 15-16yrs)

“It is quite gay, yeah gay... Really actually xxxx speaks like he is gay, so him going on sunbeds tops it all off and he comes into school with the biggest beetroot face.” (Rosie: sunbed user, high deprivation, 14-15 yrs)

FG8 “(Boy) I don’t think a lad would go in by himself it would look a bit weird if he went in on his own. So If I was waiting for my mum after she had been on them and a lad came out I would be thinking wow there is something wrong with them.” (Non-sunbed user boy, 15-16yrs, mixed deprivation).

Participants felt that their friends did influence their decision to go on sunbeds to a certain degree. The main reason for going together was for mutual peer support. They also cited boredom as a key reason for using sunbeds. Young people talked about having limited access to any constructive social activities, they expressed sunbed use as a social act, a mutual experience that could be shared and it meant that they were able to spend time together, feeling more mature and out of the cold during autumn and winter.

FG2 “We always end up going to the sunbeds....when we are out we are just walking around and someone will say shall we go on the beds, shall we just go and we end up going like.....Some of our mates who have got nothing to do just like go and use the sunbeds rather than just sitting at home” (Sunbed user, girl, 15-16yrs, high deprivation)

“It is somewhere to go and stuff, with your mates to do something isn’t it? There is not a lot for young people to do except walking the streets getting into trouble. At least it stops us doing that, do you know what I mean like. I wouldn’t say I just go on them coz I am bored but it kills a bit of time.” (Craig: sunbed user, high deprivation, 15-16yrs)

“...We usually go in the evening there is nothing to do so it is our time to be together and get down the beds. (Mandy: sunbed user, mixed deprivation, 15-16yrs)

5.3. Discussion

Parental attitudes towards certain risk behaviours may be predictive of their offspring's behaviour and has a bearing on whether a young person adopts that behaviour in the future (Anderson et al., 2002). Previous research has indicated that parents are likely to influence their children's sunbed behaviours, positively or negatively. Positive parental attitudes towards tanning are likely to demonstrate positive correlations to sunbed use in a child. Parents also act to serve normative functions in their role as the gatekeeper for social support of their children (Biddle et al., 1980). It has been reported in the literature that the greater a parent's disapproval of a certain risk behaviour, the greater the association with a reduction in that behaviour in their child. Sargent et al. (2001), identified lower rates of smoking amongst adolescents when both parents responded negatively to the behaviour; this resulted in the child being less likely to smoke. Beck et al. (1999) found that active monitoring by parents whose children drank alcohol was likely to reduce alcohol consumption in young people. Farmer-Rodgers (2000) also reported that active parental monitoring reduced adolescent substance abuse. These researchers highlight the significant contribution that parents can make towards their children's decision making. Cokkinides et al. (2002) demonstrated that young people whose parents used sunbeds were more likely to use them themselves. This is reflected in my research as most of the regular sun bed users had a mother or older sister who regularly used sunbeds too.

Participants appeared to be directly or indirectly influenced by their mothers to use sunbeds, rather than by their fathers. Stryker et al. (2004), explored maternal and female care giver influence and found that they may have a powerful influence on their daughters sunbed use. In addition to behavioural

modelling, the greater the degree of permissiveness from the mother regarding sunbed use, the more likely their child was to use a sunbed. Young people were 4.5 times more likely to use sunbeds if their mother used them too. Hoerster et al. (2007), in a US multi-city telephone survey also found that young people were likely to model their behaviour around that of their parents. For example, if their parents were less likely to use sunbeds, the young person was less likely to use them too. Cokkinides et al. (2009), conducted a meta-analysis and found that having a parent who had tanned, significantly predicted sunbed use of 11-18 year olds. These authors found that 30%-55% of 12-18 year olds whose parents used sunbeds were also using them, compared to a rate of 6.5% for young people with non-sunbed using parents (Cokkinides et al., 2002; Magee et al., 2007).

There is evidence that young people are likely to listen to parents, model themselves on parents' behaviour and values and may limit behaviour as a result of parental disapproval. Within this research however, some mothers and older sisters influenced sunbed use in several ways. Young people aspired to be like older sisters and they were considered more of a role model than their mothers. Some young people appeared to be directly influenced by their mother or older sister, by being invited to attend by them and accompanying them to the salon. There was very little discussion about the influence of mothers and older sisters within focus group sessions but the theme occurred regularly in one-to-one interviews. Perhaps participants felt that it was more awkward to reveal that their parent used sunbeds too.

Older sisters were often described as attending with their younger sister on the first few visits until they felt confident enough to attend by themselves or with friends. However, some participants also said they first initiated attendance at the sunbed salons with their mothers. Although the literature about maternal influences and sunbed use is limited, Baker et al. (2010) indicated that young people often initiated sunbed attendance accompanied by their mother and

these attendees were also more likely to become habitual frequent sunbed users.

Some studies have shown that mother's attitudes towards tanning can have a bearing upon sunbed use. Close parental monitoring can both increase and decrease sunbed behaviour. Mothers with a positive attitude towards tanning often monitor tanning to encourage sunbed use, whilst those with a negative perspective of tanning, monitor to reduce sunbed activity with their daughters (Baker et al., 2012). Young people who perceived that their parents would allow them to use a sunbed were 5.6 times more likely to have used a sunbed compared with those who perceived that their parents would disapprove (Hoerster et al., 2007). Maternal permissiveness is likely to be a stronger predictor of sunbed use for those young people whose mothers often show approval of sunbed use, this has been reported to be around 15 times greater than those who express disapproval, (Stryker et al., 2004; Cokkinides et al., 2009). However, this is not as straight forward as it appears since a mother may report that she disapproves of her child using a sunbed, but may indirectly endorse the behaviour by ignoring the activity, continuing to fund the sunbed sessions or by attending the salons with their child. Some young people reported that their mothers were reluctant to be seen with them at the tanning salon. They said that the reason for this was that their mother would not want to be seen supporting an unhealthy behaviour, so would discretely disassociate with this sunbed activity.

Another direct influence from mothers was that they provided funds for their child to use sunbeds. Baker et al., (2012) found that mothers, who used sunbeds frequently, were more likely to pay for their child to use sunbeds. Participants in the thesis research reported that they would either be supplied with regular cash hand-outs or they would share sunbed tokens purchased by their mothers. The supply of money may have served to reinforce positive endorsement of sunbeds by mothers to sons and daughters. Fathers also

funded sunbed use and occasionally so did grandparents; however, they were less likely to know what they were funding. Young people were often able to skilfully and tactfully safeguard against knowledge of their sunbed use from their father and manipulate him into lending them money, citing school activities, lunch and other social activities as the reason for requiring the money. The biggest fear for young people was that their father could find out. Young people felt that fathers would try to stop their sunbed activity, so they were more likely to confide in their mother, who was viewed as more understanding and who would be more likely to play the 'gate-keeper role'. However, this 'gate-keeper role' could also be manipulated by young people who would recall their mother's sunbed activity to shame them into allowing them to use sunbeds if they raised disapproval.

Some mothers knew salon owners fairly well or were networked to people known to own salon premises. Young people used this to their advantage and were able to 'shirt tail' with their mothers into sunbed establishments with less fear of being challenged about their age.

Influence of peers

Perceived norms regarding tanning and tanned skin have been shown to be significantly associated with young people using sunbeds; and girls whose friends used sunbeds and who held positive beliefs about tanning were more likely to use them too (Geller et al., 2002; O'Riordan et al., 2006; Hoerster et al., 2007 and Mayer et al., 2011). Having people around oneself with positive attitudes towards tanning has also been associated with a greater intention to use sunbeds (Branstrom et al., 2004; Lazovich et al., 2004a).

In the thesis research, young people feared social isolation and being side lined by their peers. They wanted to fit in and to be popular. Conforming to social norms may have influenced sunbed use by them attending sunbed sessions with their friends. Focus group discussions tended to reveal that the motivation

for sunbed use was for self-gratification rather than to conform to pressure from peers. However in one-to-one interviews peer influence played a crucial role in respect of listening to friend's advice, being encouraged to use sunbeds by friends, seeking opinions, being pressured to conform and receiving positive comments. One possible explanation is unwillingness in a group situation to admit to peer pressure, or to be rejected by peers.

Social rejection is a common phenomenon within schools and has been estimated at around thirty per cent (Masten et al., 2009). Social rejection has also been found to be an important factor affecting an individual's self-esteem (Scholte & Van Aken, 2006). Improving self-esteem has been highlighted as a key motivation for sunbed use within my research and is linked to body image and perceived attractiveness. Beerli and Wiesel (2012) suggest that social rejection can cause considerable psychological stress particularly amongst girls, who may be less resilient in managing social rejection. Asher et al. (2001) defined six categories of social rejection, social exclusion, social banning, coercion, physical harm, defamation and meddling. They suggested that victims were often used as scapegoats and subjected to active bantering, abuse, and harassment (McDougall et al., 2001; Malcolm et al., 2006). Participants in my research feared social isolation, not fitting in, being the odd one out, experiencing alienation or being subject to jibes and derogatory teasing and intimidation. Young people used sunbeds to mitigate against some of these social pressures. Attending with peers was a sure way to be accepted by their peer group and so using a sunbed with them did not set them apart from their main group of friends. The theme of bullying, intimidation and teasing was discussed more by girls in focus groups from schools that were from more affluent areas. Girls from schools with high deprivation did not discuss this issue as much. It is difficult to establish why there was this difference between participants from more and less disadvantaged areas, but one possibility is that participants from more affluent areas were likely to be more able to articulate effectively about these sensitive issues than those from more deprived areas.

Jaccard et al. (2005) highlighted the complexity of peer influence and perceived influence on young people in a US cross sectional research study involving 1700 students. The study focussed on binge drinking and sexual activity. The authors in this study argued that there are several confounding events and reasons why friends select each other that can affect the degree in which they are influenced by their peers for example, common interests. They discussed six areas where confounding parallel events can influence sexual activity and binge drinking. Firstly, hormonal changes may have affected the desire to become sexually active, being in a romantic relationship was more likely to have increased the likelihood of sexual activity, higher academic achievement was associated with lower levels of sexual activity, poor parental relationships was reported to increase sexual activity, less parental control and an increase in parental disapproval was shown to decrease sexual activity. Some of these parallels are congruent with what is presented in the literature and what the young people using sunbeds said. Young people used sunbeds because they wanted to appear more mature. Parental disapproval has been linked to a reduction in risk behaviours. This did not appear to be a factor that emerged in my research. In fact, young people said that the more vociferous the parents were against sunbed use, the more likely they would be to want to use sunbeds. Parental control was a factor; however, mothers knowingly allowed sunbed use or directly influenced their child by using them together or by 'turning a blind eye'. There appears to be some synergy between my research and that of Jaccard and colleagues in that, it appears difficult to disentangle what is peer influence and what are the confounding events that lead to adopting a particular risk behaviour.

Sensation seeking behaviour and body dissatisfaction may also play a role within peer influence, albeit subtly. In my research, girls wanted to tan to look attractive and to a certain extent they admitted that they were tanning to be more attractive to boys. The desire to achieve the ideal tanned image was not

only in order to be accepted by female peers but also by boys. Paxton et al. (2005), discussed how girls who wanted to be thin wanted to do so because they believed that they would conform to the thinness body ideal and the belief therefore, that they would be more attractive and accepted by boys. This is also reflected in the desire for girls to be tanned. Boys did not necessarily directly present this ideology to girls. It is inherent in everyday life, within social comparison and how celebrities and the media portray that having a tan is healthy and attractive. Hargreaves and Tiggemann (2004) and Jones (2001) reported that boys are less likely to embroil themselves in social comparison than girls. However, both girls and boys view a tan as more attractive than having pale skin, (Mackay et al., 2007).

Another aspect of peer influence is the desire to impress peers and to take risks. Banerjee et al. (2009) examined how sensation seeking contributes to the intention to use sunbeds both directly and indirectly due to interaction with peers and attitudes toward tanning bed use. The authors claim that sensation seeking enhances the intention to use sunbeds and positively motivates peers. Several studies have demonstrated an association between sensation seeking, deviant behaviour and a positive attitude towards adopting health risk behaviour (Ames et al., 1999; Yanovitzky 2005). Within my research I asked participants about their views about whether people who use sunbeds were also likely to use drugs, alcohol and other sensation seeking behaviours. Young people reported confidently and clearly that they saw no association between sunbed use and other forms of risk taking behaviours. Participant's responses may have been hindered by my presence as the researcher and could have introduced bias into the responses as they may not have wanted to disclose other forms of risk taking behaviour during the interviews.

The few boys who were interviewed tended to talk less about appearance being a motivation – to make them more attractive - and more about complexion and confidence. It was difficult to recruit boys for my research for both one-to-one

interviews and focus groups so caution must be made when presenting these results. Thompson et al. (2010), identified that about 20% of boys aged 15-17 had used sunbeds. The prevalence and popularity of sunbeds for boys appears to have changed over several years. Fewer boys appear to be using sunbeds. There is anecdotal evidence that the attitudes of boys towards sunbed use is changing. Responses from the focus groups and the all-boys focus group highlighted that sunbeds are mainly for use by girls and it has become less acceptable for boys to use them. They now risk teasing and intimidation and derogatory comments. The male informants emphasised that sunbed use by boys was thought to only be practiced by boys who were effeminate or homosexual and this may have prevented or discouraged boys from using sunbeds. Another reason was that boys would be seen to be too vain and interested in their own appearance and this was seen as a feminine or homosexual trait by boys.

Several participants cited boredom as a reason why they used sunbeds. When they were bored or had little to do they said that they would default to taking a trip to the sunbed salon together with friends. Boredom has been identified as a reason for people to use sunbeds in one previous study (Neenan et al., 2012). I could not identify boredom as a factor for sunbed use in under-18s in the literature. Although participants said that boredom was a reason to take a trip to the sunbed salon a much more important motivation was described by young people. They said that it was their time to socialise and to spend quality time with friends. Socialising has been reported to be important to young people who used sunbeds (Danof-Burg and Mosher, 2006; Schneider and Krämer, 2010; Coups and Philips, 2011).

5.4. Conclusion

There is a growing body of evidence that maternal influences may increase the likelihood and frequency of sunbed exposure amongst young people. This may indicate the need for parental or maternal-based interventions to address this

issue. Participants reported that mothers were likely to be more tolerant of them using sunbeds. Although some mothers may have disapproved of sunbed use, the majority of the mothers of the sunbed users in the thesis study also used a sunbed. This may go some way to explain why young people initiate sunbed use and sustain the activity. Fathers were said to have very little influence on sunbed use. Although sunbed users feared that their father would discover them using sunbeds mothers acted as confidants and gatekeepers. Some mothers were reported to actively use sunbeds with their daughters, whereas, others were aware of the practice but distanced themselves from their daughter's activities by not using sunbeds at the same time. Many mothers provided funds that sustained sunbed sessions for their daughters. Participants strategized to obtain further funds by duping their fathers or other close relatives or by using pocket money or dinner money.

Peers were also reported to influence sunbed use. Based on the participants' accounts, this occurred in several ways, one approach was via active encouragement and enthusiasm to explore new things together, to have some social time due to boredom or the need to relax. Another influence had a negative impact upon young people using sunbeds. This negative occurrence was due to intimidating behaviour, degrading references to being pale and direct insults or teasing. Peers also influenced sunbed behaviour through the desire to conform to what was perceived as the social norm. Looking good for friends and boys was another factor and this was also directly related to improving self-esteem and increasing confidence. Another peer related influence was that of cultural norms. For example, in order for one participant to continue her passion for dancing she had to conform to the image portrayed in the dance industry. There was a strong expectation that dancers had to have tanned legs as part of the image or outfit. Female participants expressed that their motives for tanning were mainly for their own needs and appeared reluctant to disclose that they were using sunbeds to impress male peers or to be more attractive towards them.

Chapter 6: Results: Understanding risks and the impact of salon practice

This chapter presents findings on the theme of sunbed salon practice and the perceived risks of sunbeds by the participants. The key areas of enquiry included exploring, what information was made available by salon staff to young sunbed users, what protective equipment was offered and what advice young people received regarding the frequency and duration of sunbed sessions. At the time these interviews were conducted there were no regulations in place banning under-18 year olds from using sunbeds. Moreover, there were limited powers for environmental health and Health and Safety inspectors to prosecute salon owners if they were not adhering to guidelines advising them not to allow under-18 year olds access to sunbeds. Hazardous use of sunbeds by young people may be compounded by poor salon practice. This chapter explores what information and advice young people received from salon staff about any risks, protective measures and about the general use of the equipment.

6.1. Advice from salon staff

Participants said that they rarely received information about the potential risks of sunbed use. They were very aware that sunbeds had been linked to cancer but were less aware of other side effects such as eye damage. Young people said that they were reluctant to use eye protective goggles when using sunbeds due to a lack of availability, that they were not advised to wear them or they made their own decision not to wear them. Participants reported that the main reason for reluctance to use protective goggles was because they did not want to have white patches on their eyes. This was often gestured by making a circle with the thumb and forefinger of both hands being held up to their eyes. Sometimes references were made to “Panda eyes”.

Alexis did not want to wear goggles but knew the risks to her health. She said that she was protected by covering her eyes with a towel. This highlighted the lack of knowledge and some of the myths that occurred in the absence of clear advice by salon operators. For example Alexis thought that a towel would protect her eyes from the UV rays and Steve and Britney thought closing one's eyes would have provided protection.

"You can have goggles, but I did not want to wear them in case I got white patches on my eye lids. But I normally put a towel over my face anyway at least for half of it." (Alexis: sunbed user, low deprivation 15-16 yrs)

"No I don't wear them because if you go on and come off you will have big white eyes. It is alright if you close your eyes." (Steve: sunbed user, high deprivation, 15-16yrs)

"They give you goggles but they are there but nobody uses them. I don't think I need them because I just close me eyes." (Britney: sunbed user, high deprivation, 15-16yrs)

Gemma had a different experience and was advised to use protective goggles by the staff in the salon that she attended. There were posters on display reminding users to use protective eyewear. This was not a typical response from participants.

".....you had to fill in a form and it had a load of tick boxes about how easy it is to tan and how easy it is to burn. I actually used goggles for the first time because I actually thought. I walked in and there was goggles on the side next to the sunbed and a sign saying wear goggles so I put them on and I ended up with huge white rings around my eyes so that is why I have not worn them since and I burnt my eyelids. I wore them

today because of how badly my eyelids burned last time. Because that was really painful (laughs).” (Gemma: sunbed user, mixed deprivation, 15-16 yrs).

Burning on sunbeds was a common occurrence. Ultraviolet bulbs lose their power over time and will require re-tubing periodically. Most participants reported that they were rarely told when bulbs had been changed. The extra power emitted from the newer bulbs can catch sunbed users unawares. This was often trial and error and they adopted strategies to try to prevent themselves from burning. However, when UV bulbs were changed young people often got burned badly because they had not allowed for the extra power and heat from the re-tubed sunbed. Jordan explained that she had been badly burned because she was not made aware of the UV bulbs being changed. Rosie was also not aware that the UV bulbs had been re-tubed.

“No, she did not tell us when we first went in, done my thing and I had only been on for 9 minutes and they had been re-tubed and used loads, so the power was pure hot. If I had have known I would have gone on for 6 minutes, but the girl in the thing was only about 17 so she didn’t tell us so we just got on them and xxx(friend) went on for 15 minutes I burnt and she went black (laughs).” (Jordan: sunbed user: sunbed user, low deprivation 15-16 yrs)

“At first we went on the first time and then we went on the second time and they had been re-tubed and I did not know what it was, so I went on and it was hot and that, so then I found out that is what re-tubed meant.” (Rosie: sunbed user, high deprivation, 14-15 yrs)

Participants were asked whether salon staff gave advice about skin type. People with skin types one and two are reported to be at higher risk of burning and of developing skin cancer and thus, should be advised not to use sunbeds.

People with these skin types nearly always burn and rarely tan. Some young people had little faith in salon staff and felt skeptical about whether salon operators were really interested in their welfare. Amy and Chloe felt the most strongly about this.

“Do you think that salon staff-care about your health?” (Interviewer)

“Well it is a business, it is like smoking cigarettes making loads of money and killing everyone, whereas sunbeds are making loads of money and killing everyone, that is really the same thing there are so many shops that are making money, so it’s not going to bother them when their business is going so well. That is why they don’t ban cigarettes, that’s why I don’t think they will ban sunbeds there are too many business using them.” (Amy: sunbed user, mixed deprivation, 15-16rs)

“How easy is it for you to get to use a sunbed?” (Interviewer)

“...most salons are really only trying to make a business, so they are not bothered about what is happening to young people. They don’t want to see themselves in debt if their shop is not getting the business so they want people to go on. Some salons just don’t care.” (Chloe: sunbed user, high deprivation, 15-16yrs)

FG3 “... they just say go on, they say what is your name? and how long do you want to go on for, and then you just go on. When you come out and I came out proper bright red and I said, is this normal and she went yeah.” (Disapproving looks from peers. Sunbed user, girl, 14-15yrs, high deprivation).

Participants in one focus group discussed about how local adverts in sunbed salons could coerce younger people to use sunbeds. The following response was unprompted.

FG2 *“They invite you into salons by advertising in the windows, they have writing that draws you in and words like tropical and calming and luxurious and healthy. It can be misleading really.” (Non-sunbed user, girl, 15-16yrs, high deprivation)*

6.2. Access to sunbed salons

Despite the absence of legislation banning sunbed use for people aged under-18, at the time of these interviews, there were strong recommendations for preventing under-18s from using sunbeds by the World Health Organisation and the Sunbed Association in the UK. Young people described how easy it was to access salons for sunbeds and they were rarely asked their age or denied access.

“Have you ever been questioned about using a salon?” (Interviewer)

“It depends, they ask you to fill out a form I have been to a few places one did not ask for form filling they did not give advice. The paper that you fill out I think has the effects on it but I have never read it I just wanted to get a sunbed.” (Abbey: sunbed user, mixed deprivation, 15-16)

“..... she asked if I had my passport with me, then she said had I used them before, coz I said yes and I had like tan lines and stuff she was kind of like believed that I was older.” (Gemma: sunbed user, mixed deprivation, 15-16 yrs)

All sunbed users were very clear and confident about being able to judge exposure times and frequency of exposures to sunbeds. Most participants had their own strategy that they believed was well thought out and logical. They were able to articulate how to start slowly on the sunbeds, building up to a maintenance level. None of the participants were advised by salon staff about

how often to use sunbeds or when to limit the number and duration of sunbeds sessions. Young sunbed users reported that they would make judgements based on what they thought was logical. Some young people listened to advice about sunbed duration from their mothers and older siblings.

Steve was asked about how many sessions he thought were safe. He was very precise with his strategy and the advice that he would give to others about what he viewed was safe and what he was less comfortable with.

“I reckon a couple of times a week for about 3 minutes to start with then going up to 6 minutes is ok.....Over 12 minutes 4 times a week would be too much I think... Well, I know people who use them and their skin gets burnt if they are on too long say more than 9 minutes.” (Steve: sunbed user, high deprivation, 15-16yrs)

Craig was also confident about how long he should use a sunbed and felt that 9 to 12 minutes was dangerous, but 6 minutes was ok.

“You would be best to start with 3 minutes each time until you are used to it and then move up to 6 minutes a time after a few weeks. Some people can do longer 9 and 12 minutes but I think that is dangerous.” (Craig: sunbed user, high deprivation, 15-16)

It became very clear from sunbed users that exposure time was something learned over a few sunbed experiences. Users would adjust the duration time if they had been burned previously or if they were aware that tubes had been changed. They would gauge what was about the right time for them to stay on the sunbed.

FG8 *“When my mum says she is only going on for 6 minutes for 3 minutes then that is how you learn, from word of mouth.” (Sunbed user boy, 15-16, mixed deprivation).*

Several of the participants strategized about when they used sunbeds. It became clear that the best time to attend a sunbed session was when a younger salon assistant was supervising the salon. Participants felt that they were less likely to be advised not to use a sunbed or even refused entry if a less experienced individual was supervising the salon. If young people did get refused access to sunbeds a follow up strategy would be to get a letter off the parent that provided permission; or they would ask their mother to telephone the salon in advance?”

“We went in with me mate and we were nervous like but we had been told by girls at our school when to go on coz the younger girl was on duty and she never asks your age. Even if she did I would have got a letter and forged my mum’s signature. They are not really bothered they just want to get you in and out and take your money really.” (Craig: sunbed user, high deprivation, 15-16yrs)

Erin said that her family doctor had suggested that she used sunbeds due to a dermatological condition that she had, which may have justified her use of sunbeds. Several sunbed users reported that their family doctor advised them to use sunbeds to clear skin problems. Erin’s mother acted upon the doctor’s recommendation by allowing Erin to use sunbeds, the doctor’s advice might have reinforced the acceptance by Erin’s mother for her daughter to use sunbeds. Medical support for the use of sunbeds for medical purposes could provide salon staff with the misconception that sunbeds are healthy.

“How easy is it to access the sunbeds?” (Interviewer)

“Quite easy all I have said to them is that my mum said and I have a skin condition and the Doctor said I should go on them so it has been quite

easy to get on them.... It was the doctor who said that the only way to get rid of my skin condition was off UVB light sunbeds or sun showers. So mum started taking me because she started using them and I just felt dead relaxed and calm and it felt dead nice as if I had been pampered or something.” (Erin: sunbed user, mixed deprivation, 15-16yrs)

I sensed that Erin was very keen to use sunbeds, she had told me during the interview that she wanted to have a tan because it made her look healthier and more confident. She also said that she enjoyed the effect of using sunbeds, feeling relaxed and spoilt. The doctor’s advice was the endorsement that she was seeking to justify her continued use of sunbeds. It was also easier for her mother to accept her using sunbeds. Her mother would take Erin to the sunbed salon and would go on after she had been on and not with her. Erin’s mother may have felt less burden of responsibility for her daughter because attendance at the salon in the form of medical treatment was more acceptable than a social activity.

6.3. Distancing oneself

Young people talked openly about cancer and the risks associated with sunbed use. All participants were aware that sunbed use had been linked to cancer. Some participants described a sense of responsibility, but they also felt invincible. They talked confidently about how cancer usually happened to other people and not to them.

Participants said that they did not believe the stories they had heard about sunbed use in the news or in magazines. They discussed how characters portrayed in these articles were fictional and so they detached themselves from the stories. Young people also described that it was easier to ignore something when there was less familiarity, this was because they didn’t know the person involved or because they were not connecting with the story. Chloe felt that she would be more comfortable ignoring the potential risk of cancer and

disassociated herself from those risks. She described that not being familiar with someone who got cancer would somehow make it less real, unless she knew them personally or knew of them.

“(Talking about cancer, no prompts) everyone always sees things in magazines or the tele but you think it will never happen to yourself and then you will have a shock probably if something does happen to you.” (Chloe raised a story that she had seen on television and she talked about a young girl on the television who had developed cancer)...I don’t know the girl, you think it is not real you need to see it yourself even though it is real. So that would probably stop me completely.” (Chloe: sunbed user, high deprivation, 15-16yrs)

Andy felt more concerned for his family than himself. He gauged his risks based on the assumption that since only small numbers of cancers are reported, his risk was very small. Young people in the focus groups and interviews mention that they rarely heard about people getting cancer after using sunbeds. They said that skin cancer was not very common and that even if they were to develop skin cancer it could be easily treated and they would likely to be cured.

“My sister goes on them, although she has not been on them for ages, but if she started to go on them I would go on them with her but I still wouldn’t like her going on them because it is dangerous. For me I don’t think anything is going to happen to me because you don’t really think it happens to you it is something that happens to other people....you just don’t think it is going to happen to you. I think the scientists say that only a few percent get a cancer and then you go on and you think I won’t be one of them because the amounts of people that use them...and then before you know it you are.” (Andy: sunbed user, high deprivation, 15-16yrs)

Jammie and Charlotte were from the same form group in school, they hinted at being invincible. Jammie however, acknowledged that there was a risk and that cancer could happen to her. Charlotte was more concerned with the here and now and said she did not worry about the future. The future was something that parents worried about, not children.

“It makes you think oh! It won't happen to me and stuff. That that sort of stuff doesn't happen to you, but it does.” (Jammie: sunbed user, mixed deprivation, 15-16yrs)

“I am not really bothered at the moment because I am still young, but I don't think it will happen to me.” (Charlotte: sunbed user, mixed deprivation, 15-16yrs)

Danielle also felt invincible; she thought that there were so few cases reported about young people developing cancer from sunbed use. She rationalized her risk assessment against the positive effects she received from using a sunbed and concluded that she would rather take the risk and feel good about getting a tan.

“Yeah it is sad but everyone thinks it won't happen to me, it is never me and I will just have to take the risk.....Coz it only happens to a few people so you would have to be unlucky to have that happen to you. Whereas, most people come out with a good thing from them you know! feeling good and looking good.” (Danielle: sunbed user, mixed deprivation, 15-16yrs)

One respondent who did not use sunbeds referred to her mother's past sunbed use. She explained that her sunbed use as a child had caused cancer. This respondent annoyed the sunbed users in the focus group. One sunbed user was quick to counter this respondent, suggesting that this was not a valid

statement, they implied that there were lots of risks in life and it was not always the case if you adopt unhealthy behaviours you will suffer ill health.

*FG4 “My mums mate got diagnosed the other day with skin cancer and she does not go on sunbeds or nothing and she got asked how have I got skin cancer and she said I don’t go on them anymore, and he said when you used to go on them as a kid it caused damage then .” (Non-sunbed user, girl, 15-16yrs, low deprivation)
(Continues)*

FG4 “Not everybody gets it though, my mum has been on them since she was a kid and she has not got it....It can’t happen to everyone, you could say that about everything like people could die of some stuff.” (Sunbed, user, girl, 15-16yrs, low deprivation).

In the following exchange, sunbed users and non-users argue about the risks of developing skin cancer. The girls are from an all-girls’ school and are aged 14-15yrs talking about cancer

FG5

Interviewer “I was interested that you said you did not think it was dangerous but you and the other girls mentioned the dangers. Knowing those points that were mentioned why don’t you think it is dangerous?”

Participant “It isn’t dangerous because you can get cancer and stuff of other stuff. You can get cancer but it may not be off the sunbeds, sunbeds is not the only way you can get skin cancer. How else can you get skin cancer..... if you burn too much and you get a mole on your body that goes bad. It is probably because you are burning too much, I don’t burn on

- the beds so my risk is probably less than those people who burn in the sun.” (Sunbed user)*
- Participant* *“I don’t see that so many members of my family have had cancerI wouldn’t go somewhere when I know the chance of increasing the risk of me getting cancer. I would not go.” (Non-sunbed user)*
- Participant* *“Every women on my side of my family have died of it so why would I go on the sunbeds if I have got a chance of getting it because that is not what I want.” (Non-sunbed user)*
- Participant* *“Do you all wear sunscreen on holiday?” (Sunbed user)*
- Participant* *“Yeah/ No. (Mixed responses)*
- Participant* *“Well if you don’t you are just as at much risk then aren’t you?”*
- Participant* *“You talk about getting skin cancer from other things but it is just not worth it.” (Non-sunbed user)*

Most participants said that if their family or someone close to them who used sunbeds developed cancer, it would make them stop using them.

“....how would you feel if your sister got skin cancer, would that impact on you?” (Interviewer)

“Yeah I would stop and I would tell others about it....I would tell my sister and I would stop as well.” (Jammie: sunbed user, mixed deprivation, 15-16rs)

“So are you saying that it would have to be someone close to you before you would stop using them?” (Interviewer)

“Yeah it is probably, because I have never known anyone that has got that before.” (Jammie: sunbed user, mixed deprivation, 15-16yrs)

6.4. Acting in the parent role

During the one-to-one interviews each of the participants were asked to put themselves into the position of the parent and try to imagine how they would feel if their child wanted to use a sunbed. Danielle said that she would not be happy for her child to use a sunbed but explained that she could not stop her from using them. She also said that she would not encourage her daughter to use a sunbed. In this narrative Danielle described how she might follow her own mother’s strategies to manage her daughter’s sunbed use, summed up as ambivalent but concerned.

“I wouldn’t be happy. I would cut her down to not that much, but hopefully there will be something new by then like a fake tan that does not smell and that was even and stuff.....I would not stop her from using them, I just would not encourage her to go on them.” (Danielle: sunbed user, mixed deprivation, 15-16yrs)

*“Is that different to how your mum is to you or is that? (interrupts)”
(Interviewer)*

“My mum just does not really say anything about it like... she is quite brown herself, she does not really say anything.” (Danielle: sunbed user, mixed deprivation, 15-16yrs)

Erin conceded that she could not stop her daughter from using a sunbed. In this interview she also described how she would manage sunbed use with her daughter in the same way as her mother did with her.

"If they were my age or a bit older I would not mind as long as they did not use them too often, if they were only doing it for a tan I would say no, and if they were any younger I would say no." (Erin: sunbed user, mixed deprivation, 15-16yrs)

"Do you think that is different to how your mum feels about you using them?" (Interviewer)

"Possibly but it is kind of the same because she does worry about me but there is nothing she can do." (Erin: sunbed user, mixed deprivation, 15-16yrs)

During the interview with Amy she described how thinking about acting in the parent role made her reflect on how she would manage her daughter, but she also understood how her mother felt. Amy and her mother appeared to act the same, not thinking about their own risks but worrying about others. Amy joked about going on the sunbed with her daughter in the future. There seemed almost an air of inevitability that this would likely to happen.

"You are a parent and your daughter asks to go on the beds and she is your age, what would you say? (Interviewer)

"Ok I will come with you (laughs) I don't know." (Amy: sunbed user, mixed deprivation, 15-16yrs)

"Would you be worried about her health?" (Interviewer)

"Of course you have to be, because you are protecting someone else, but when it is you don't see it like that and now you are making me think about it I can see where me mum is coming from. I know if I told her that she should not go on them she would go on em anyway so there is

nothing you can do about it.” (Amy: sunbed user, mixed deprivation, 15-16yrs)

“It is interesting when you look it from a different way isn’t it? (Interviewer)

“Yeah you got me thinking now.” (Amy: sunbed user, mixed deprivation, 15-16yrs)

In the following exchange in an all- girls’ school aged 14-15 years in an area of low deprivation discuss how they would try to deal with their child if they wanted to use sunbeds. Participants challenged each other’s views. They gave this part of the discussion considerable attention and were really engaged. The sunbed users gave me the impression that they were thinking about how they could justify their own sunbed use.

FG5

Interviewer “So what I would like you to do is think, right, you are now a parent and your son or daughter wants to use a sunbed...and they say to you I really want to go on a sunbed what are you going to do or say?”

Participant “I would not let them they are under-age.” (Non user)

Participant “I wouldn’t say no, but I would not say yes either.”
(Sunbed user)

Participant “I would say get a spray tan because you can get spray tans that are really good.” (Non-sunbed user)

Participant “I would tell her the risks what she can get off them. It is only like a tan at the end of the day, it is not worth it. (Non-sunbed user)

Participant “Like our mates mum went on it once for her holiday tan and got cancer.”

Participant "Was that off the sunbeds though?"(Sunbed user)

Participant "Well she had only ever been on it once and she got cancer." (Non-sunbed user)

Participant "There must be reason why they have an age limit though."

Participant "If they are so bad why aren't they illegal or banned....(Sunbed user)

Participant "They should be."

Participant "My mum says I should not go on them. If my daughter wanted to go on them she would go on them there is nothing you can do. I would tell her the risks and tell her I did not want her to go them. My mum said no to me but I still went on them."

Participant "I would stop her." (Non-sunbed user)

Participant "You can't physically stop her though." (Sunbed user)

Participant "I would sit her down and explain why I did not want her to use them, I just wouldn't let her use them."

Participant "You can't stop them."

Participant "My mum said no to me because of what happened to her but it is about yourself, if you want to go on them you are going to go on them." (Sunbed user)

Participant "I just hope they would listen to me."

Participant "If a parent told a child not to go some would and some people wouldn't."

Participant "No one at all does everything their mum or dads tell them to do, all you can do is advise them but if they choose to go they choose to go."

Participant "I would not personally go and take them I would sit them down and say I prefer you not to go on them. But if all her mates were going on them I could not actually stop her." (Sunbed user)

- Participant* "So you would stop your child even though you go on them?
(Non-user)
- Participant* "I am not having kids anyway so I have nothing to worry about."
- Participant* "I would just let them be pale, paleness is good I like it (Non user)
- Participant* "What if your daughter wanted to be opposite to you and wants to be brown?"
- Participant* "She can be pale anyway I would just stop her."
- Participant* "Would you go in and rag her off them?" (Sunbed user)
- Participant* "Proper rag her off, yeah." (Non-user...laughs)

Participants discussed how they would be more concerned about other people rather than themselves, especially children. Craig explained that he recognized that parents would feel responsible if their child were to be harmed by a sunbed if they had not acted to try to prevent them from using them.

"I wouldn't be happy but you can't stop them. I would probably advise them not to go on them.... I have made the decision to use sunbeds and I think my kid would make the decision to use them too, but it wouldn't stop you worrying about them. It is your own fault if you get cancer but you would be well messed up if your kid got cancer you would feel guilty that you did not stop them." (Craig: sunbed user, high deprivation, 15-16yrs)

Mandy also felt that she would feel responsible and worried if her child used sunbeds but acknowledged that it is an individual's decision.

*"Well I would not be happy but I don't think you could stop them really you would have to explain the risks and hope that they took your advice."
(Mandy: sunbed user, mixed deprivation, 15-16yrs)*

“So you use sunbeds and don’t really seem concerned about the risks too much yet you would worry more about your child - why is that?”

(Interviewer)

“I suppose, to be honest you know that they are dangerous but you try not to really think about it too much but naturally be more worried about your child coz your responsible for your own actions I suppose.” (Mandy: sunbed user, mixed deprivation, 15-16yrs)

Chloe agreed that she would not be happy if her child used a sunbed. In fact, she said she would be “disgusted”. She went on to explain that it was more difficult to have the burden of responsibility as a parent, because children should outlive their parents. Chloe claimed that she would not be bothered if she became ill as a consequence of using a sunbed. Moreover, Chloe was extremely keen to tell me on a few occasions that she was only concerned for others. This might have been because she was deflecting her risk by over-emphasizing her concern for everyone else.

“I don’t really say that I am going on a sunbed they don’t like it...because parents are more worried about their children aren't they. Like I would not want my mum to go on a sunbed all the time coz you are worried about other people more than yourself aren't you? (Chloe: sunbed user, high deprivation, 15-16yrs)

“If you are a parent how would you feel if your child used a sunbed?”

(Interviewer)

“I would be disgusted because you don’t want to be in a position when your child has cancer or being damaged, because you’re the parent you should be the one going before your child, do you know what I mean?”

They should be looking at you being ill....you would not want them to be harmed.” (Chloe: sunbed user, high deprivation, 15-16yrs)

“How do you think that is different from the way your parents feel about you then? Because you are saying you don’t want to be in the position of worrying that your child could die using sunbeds yet your parents are concerned that you are using them?” (Interviewer)

“Because I am not the parent. Then you think you’re not bothered what they think but if something happens to you, you would not be that bothered you don’t have to worry if it is yourself. You’d just get on with it, if it is yourself. Like I always say I would rather get something rather than anyone else, I don’t worry about me.” (Chloe: sunbed user, high deprivation, 15-16yrs)

6.5. Discussion

Poor compliance by less responsible salon owners could put sunbed users at greater risk due to breaches in health and safety duties. Sunbeds are currently subject to international standards which were established by the International Electro-technical Commission (IEC, 1995). Within these standards there is reference to four types of classifications of the sunbed machine. Type 4 sunbeds emit the most powerful UVB rays and should only be used for medical purposes (Gies et al., 1986). Only type 1 and 2 sunbeds should be used for tanning according to the International Commission on Non-Ionizing Radiation Protection (2003). Several national and international organisations have provided guidance about sunbed use and health and safety procedures. Under the Health and Safety at Work Act 1974 (HSWA) and the Management of Health and Safety at Work Regulations 1999 (MHSWR) the UV tanning equipment operator, must:

- assess the risks caused by your work activity including those from exposure to UV radiation;
- take measures to control, as far as is reasonably practicable, the risks;
- tell your staff the results of your risk assessment. Make sure they are trained and competent in the operation and use of any tanning equipment; and
- if you have five or more employees you must write down the main findings of the assessment.

The Health and Safety Executive's (HSE, 2009) revised guidance brings it in line with latest World Health Organisation advice and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) which makes the following recommendations. The ICNIRP highly recommends that sunbeds should not be used for tanning or other non-medical purposes and suggests that the following groups should be advised not to use them.

- People who have skin photo-types I or II;
- Children (i.e., less than 18 years of age);
- People who have large numbers of nevi (moles);
- Persons who tend to freckle;
- Individuals who have a history of frequent childhood sunburn;
- People who have pre-malignant or malignant skin lesions;
- People who have sun-damaged skin;
- Those who are wearing cosmetics. These may enhance their sensitivity to UV exposure; and
- Persons taking medications. In this case they should seek advice from their physician to determine if the medication will make them UV-sensitive.

The reports from young people in this thesis study indicate that sunbed salons did not provide adequate advice or information to the research participants who were young sunbed users. There is little advice either verbally or written that

explains how long a sunbed users should stay on a sunbed and what is the recommended number of visits to the salon. Information about risks is either non-existent or minimal. The use of protective goggles are never enforced and rarely offered and those salons that have protective eyewear available often leave them unclean or even charge extra for sunbed users to use them. There were very few examples of good practice from participants.

The Sunbed Association (TSA) attempted to improve safety amongst sunbed establishments through voluntary regulation. The TSA claims that their members provide safer services to sunbed users than non-members. Despite this, standards within salon practices vary considerably. In the absence of effective legislation and regulations there have been insufficient powers for environmental health officers or health and safety officers to impose high standards of practice. Gavin et al.(2010), conducted an observational study in Northern Ireland in 2007. The authors in this study identified serious poor practice across a range of issues including that 15% of machines used were type 4 machines, i.e. should not be used for sunbed use due to high UVB emissions. In addition, tanning machines were rarely serviced; protective goggles were seldom sanitised, and where these were available 40% of customers were charged for their use. Most salons were unable to locate operating manuals. Even TSA salons fell short of the standards, although they performed better than non-TSA salons overall.

A major concern from the thesis results is the inconsistency in the use of sunbed machines and the tube bulbs that are used and replaced. Sunbed users in this study were unaware of the dose emission from machines that they used; moreover, the machines may have varied strengths within the same salon. This could be particularly hazardous if a client uses sunbeds for the same duration on an alternative machine without knowing whether it emits a higher dose of UV. This could expose the individual to the risk of burning and skin damage. Tierney et al. (2012), conducted a UV spectra survey on 402 artificial tanning units in

England and these doses were measured against the British and European standard (2003). In order to comply with the European standard erythemal-effective irradiance should not exceed 0.3 W m^{-2} . The British standard is 0.15 W m^{-2} . One unit in the study emitted a dose of 2.52 W m^{-2} which is purported to be 6 times greater than the midday Mediterranean sun. Nine out of 10 sunbeds in the study emitted UV levels exceeding the maximum European standard.

Within the thesis research, young people were rarely informed when tanning tubes had been changed on sunbed machines. Many participants described how they had burned on sunbeds, especially when they were not informed about a tube change as newer tubes can emit greater UV power. Sunbed users may be exposed to various strength of UV emissions as well as different types of UV rays without either they or the sunbed operator knowing (Cloke et al., 2010). The exposure time that young participants spent on sunbeds varied between 3 minutes and 15 minutes. There is the potential for young people to be exposed to even higher emissions over a longer period of time. In England there have been no studies that test for compliance against the British or European standard, which further compounds the need for tighter regulations and testing of sunbed appliances for compliance. In England sunbed operators are unlikely to know whether the machines that they are using are the correct specification, neither are they likely to know whether the sunbeds are emitting doses that comply with the British or European standard. They also do not keep records of how long people use sunbeds for, so are unlikely to be able to advise users about excessive exposure times.

A further concern is regarding the number of sessions young people have a year. The World Health Organisation recommends a limit of thirty sessions in a year for adults and the Sunbed Association recommends no more than sixty sessions per annum, in line with the European standard. Most young people interviewed used a sunbed at least three times a week and over the course of a year this may exceed 150 sessions-5 times the limit of the WHO and nearly

three times that of the European standard. Moreover, they may be using machines with high specifications as well as higher doses of UV emissions. This could provide extremely high doses of artificial UV over an annual period. National guidelines recommend the use of protective eye wear in order to prevent UV penetrative eye damage occurring. Several eye conditions have been reported due to the effect of exposure to UV rays from artificial devices, such as Photokeratitis and corneal perforation (Funnel et al., 2006), macular degeneration (Costagliola et al., 2008) and ocular melanoma (Vajdic et al., 2004). There are few studies about artificial UV induced eye damage in the literature, but organisations such as CRUK and WHO recommend that eyes should be protected from artificial UV with protective goggles. Funnel et al. (2006), suggest protective goggles can provide 100% protection when used. However, very few participants in my research used protective eye wear either because they thought goggles would not be clean, they were not offered them or goggles were not made available. The majority of participants said the main reason for not wearing goggles was because they did not want white patches around their eyes. Under use of protective goggles is consistent with findings from the literature, (Mackay et al., 2007; Rhainds et al., 1999; Schneider et al., 2009; Schneider et al., 2013).

People with skin type 1 and 2 should be advised not to use sunbeds (WHO 2003). People with skin type 1 often burn, rarely tan and tend to have freckles, red or fair hair, and blue or green eyes. People with skin type 2 usually burn, sometimes tan and tend to have light hair, and blue or brown eyes. However, there are no regulations in place in England to support regular assessments of customers by salon staff; moreover, salon staff are rarely trained and therefore, would not be likely to be in a position to offer informed advice or to conduct appropriate skin type assessments. Several studies report that salon staff do not routinely check the skin type of their customers, (Boldeman et al., 2001; Cokkinides et al., 2002; Dellavale et al., 2003; Demko et al., 2003). Only one participant in the thesis research was asked about their skin type. Young people

reported that salon staff did not routinely assess customers according to what young people said, some of whom may be at further risk to the potential effects of UV devices because they were skin type 1 and 2 and were frequent sunbed users.

Most of the young people in the focus groups and in-depth interviews were aware that sunbed use was associated with the increased risk of skin cancer, yet they continued to use sunbeds. There are several aspects that young people highlighted. They said that they didn't think that they would develop cancer because they did not hear of many cases involving young people. They also said that developing cancer was more likely to happen to someone else rather than themselves. Participants also talked about thinking about the 'here and now' and not worrying about the future and appeared less concerned with the side effects and risks of sunbed use than with the benefits. According to Gibbons et al, (1995) adolescents associate a lower risk perception with behaviours that are more common, particularly amongst their peers; with the prevailing notion being that, 'They got away with it then so will I'. This disassociation with the risks was articulated by young people during both one-to-one interviews and within focus groups.

Broadstock et al. (1992); Beasley and Kittel (1997); Geller et al. (2006), all found that even where a person felt that they were at risk of skin cancer, it would have little effect on their tanning behaviour. This raises the question therefore, whether young people would alter their behaviour if an emphasis was placed upon the risk of skin cancer alone. There may be other outcomes such as aging skin, eye damage and scarring that would have greater impact on behaviour change. There has been criticism about promoting 'risky behaviours' without trying to understand the meanings and experiences that are associated with them. Several psychological theories have attempted to explain why people engage in such risk taking behaviour. For example, the Health Belief Model (HBM), (Rosenstock (1966) and the Theory of Reasoned Action (TRA),

(Fishbein and Ajzen 1975) assumed that the individual has made a considered and reasoned judgement, whether to participate in a particular activity or not. However, they are less likely to consider the social and cultural contexts within which some decisions are made (Murray and Turner, 2004). The Theory of Planned Behaviour (TPB) Ajzen (1985) represents an extension of the theory of reasoned action by adding the perceived behavioural control, i.e., how easy it is to perform the behaviour in the future through self-efficacy. Moreover, the perceived behavioural control can increase the relationship between subjective norms and has been shown to enhance attitudes towards intentions to tan because people believed they were able to control their own indoor tanning behaviour. As perceived behavioural control increases, the relationship between using sunbeds and the intention to use sunbeds becomes greater (Hillhouse et al., 2000).

The extent to which knowledge and attitudes influence decision making in young people is an important consideration. For example, the desire to have a tan now, to feel more attractive and to improve self-esteem may override the fear of developing skin cancer in the future. The immediate effect of the sunbed session may satisfy these rewards, and because the risk of skin cancer is deemed small, this may give cause to why young are able to focus on the 'here and now'. Dennis et al. (2009), also argue that tanning behaviour is related to attitudes and not just to knowledge. These authors discuss how focussing on subjective norms may provide a more effective approach to behaviour change by focussing on alternative methods of tanning, particularly if these are reflected in the behaviours of celebrities and other role models. In other words focussing on alternative results of the tanned appearance such as applying fake tan would be a less hazardous pursuit and if celebrities who influence young people are also doing this there would be more chance of success.

Perception of risk has a role in determining health protective behaviour (de Vries et al., 2003a). Peters et al. (2006), suggest that cancer protective behaviours

are influenced by how a person estimates their personal risk of developing cancer. Some researchers suggest it is not only what people think about the risks, but also what they feel about the risks that this may be strongly related to health behaviour and more influential than cognitive judgements of the likelihood of a threat to health (Janssen et al., 2011; Dillard et al., 2012).

To illustrate this point, people may be very fearful of flying, which they will undertake far less often than say riding in a car. Statistically the risks of harm or death are considerably greater in a car than an aeroplane, yet people tend to give less thought to the former. So, estimates of likelihood can be based upon what people think and feel or indeed worry about. If we were to take the aeroplane scenario further, we could examine the structure of attitudes, which have an affective, behavioural and cognitive component. The affective component may involve a person's feelings e.g. 'I am scared of flying'. The behavioural aspect affects what we do and how we act for example, 'I will avoid flying'. Finally the cognitive component will be what the person believes, e.g. I believe aeroplanes are dangerous. When we apply this analogy to young people and sunbeds the affective component may be that they feel sunbeds make them look healthy and attractive. The behavioural component would be about the attitudes they have that will affect what they do, for example wanting to get darker, so that they will use sunbeds more. The cognitive component could give rise to the belief that sunbeds are not so dangerous. Channelling efforts at the affective component of sunbed attitudes may be a more effective way of changing or altering young people's behaviour than addressing the cognitive component. Social psychologists such as Miller and Tesser (1989) and Janssen et al. (2012) have suggested that affect may be a better predictor of health behaviour than the perceived cognition. A focus on changing behaviour relating to appearance goals may therefore be more effective. Young people may be more responsive to alternatives to sunbeds such as fake tanning. However, this would need to achieve their tanning goals with the least effort; and currently young people report the application of fake tan as time consuming,

cumbersome, expensive, odourous and difficult to apply. The use of a behavioural alternative model (Jaccard, 1981) has been applied in several studies involving young people and tanning behaviour. These studies have shown how to provide alternative choices for sunbed users; the aim being to reduce the appeal of the risky behaviour and often a less risky strategy that still provides an acceptable alternative. Examples include the option to use a fake tanning alternative, or wearing clothes that will not require a complimentary tan (Hillhouse and Turrisi, 2002; Hillhouse and Turrisi, 2008).

All participants in the thesis research reported that they were aware that sunbeds were associated with skin cancer; there were some differences in appreciation of other potential risks such as damage to the eyes; but overall young people in both the focus groups and one-to-one interviews were able to recall sunbed risks. The older girls, aged 15-16 years, appeared to be using deflection and cognitive dissonance during discussions about the potential risk of developing cancer or other serious side effects, and they appeared to disassociate with cancer risks in favour of illuminating the benefits.

This raises the question as to whether disassociation with the risk factors results in cognitive dissonance amongst participants. The Cognitive Dissonance Theory was developed by a social psychologist, Leon Festinger, in 1957. This theory suggests that individuals who are experiencing cognitive dissonance are motivated to block, reduce or eliminate conflicting attitudes or beliefs in order to establish an internal equilibrium. In the case of sunbeds, when a change in behaviour is difficult to achieve a change in attitude will occur instead and young people may adjust their beliefs to justify their behaviour. This approach was consistent amongst the young people in this current study who were using sunbeds to various degrees. Some would articulate the risks comprehensively but would balance this against their belief that the risks posed little threat or that health promoters were scare mongering or making false exaggerations. They also justified the use of sunbeds by arguing that it reduced stress, helped them

to relax, improved social interactions with friends, improved their self-esteem and confidence and enhanced their physical attraction. Young people said that the benefits outweighed the potential risks, which they believed were small, and this was compounded by what they perceived as a lack of evidence. An insufficient number of personal stories about young people who had developed skin cancer linked to sunbed use created doubt about what young people were being told by health promoters.

A recent longitudinal study of cognitive dissonance amongst smokers in Canada, US, Australia and the UK concluded that beliefs can change in the respect of dissonance-reducing motivations (Fotuhi et al., 2013). Freijy and Kothe (2013) in an Australian study conducted a systematic review of dissonance-based behaviour interventions and suggested that the hypocrisy paradigm was found to be the most effective approach in inducing change across a range of behaviours. In Hypocrisy Theory (Aronson et al., 1991) individuals reflect upon their past behaviours after making a pro-social statement about their behaviour. This creates feelings of dissonance and thus the focus is on behaviour change not attitude change. Stone & Focella (2011) suggest that the most effective changes occur when participants have greater self-esteem. Whilst this approach seems appropriate in respect of changing sunbed behaviour in young people, a paradox occurs in that the act of using a sunbed was reported to improve self-esteem; and so one may question how affective this approach would be, as if self-esteem were reduced as sunbed activity was reduced, rendering this approach less affective.

Another example of dissonance that occurred was that young people detached their behaviour from that of others. Participants were asked to put themselves in the position of their parent. They were asked to express how they would feel and react if their daughter or son were using sunbeds in an exercise called 'In your parent's shoes'. Most participants in the focus groups and one-to-one interviews thought that they would try to stop their child using a sunbed and

would strongly discourage them from using them at all. Some conceded that their child would most probably follow in their own footsteps. They discussed how they would explain the risks in the hope that the child would not start using them. However, when participants explored whether the advice that their parents had given to them had altered their behaviour, most said that it had not.

Sunbed users said that their parents, particularly the mothers, were worried about them using sunbeds. Participants explained that if they were the parent they would worry a great deal about their child because they would feel responsible for their welfare. They also worried about their mothers or siblings who also used sunbeds. They said they were less worried about themselves because they don't worry about the here-and-now and the possibilities and risks were too small to be concerned about. This exercise was very challenging to the participants; they were encouraged to think about their own feelings if their child were to use a sunbed. This exercise enabled them to reflect on how they would feel if they were the parent and consequently they appeared to understand the connection about the concerns that their own parents had about them using sunbeds and were able to connect with their own worries about their children's future. Participants were able to disconnect themselves from their own goals and views and for a short while were able to understand why their parents worried about their behaviour. However, it appeared that cognitive dissonance again realigned their attitudes in favour of sunbeds as they were easily able to justify the benefits versus the risks.

6.6. Conclusions

International guidance, European and British standards for sunbed equipment, safety advice, good practice codes and self-regulation have all been largely ineffective in safeguarding young people from the hazards of sunbed use. Inadequate monitoring of the types of sunbeds, variation in emissions from sunbeds and excessive unregulated access to sunbeds has left young people exposed to dangerously high doses of artificial UV.

Poor salon practice was evident in the present study as reflected by young people's accounts and this is reflected in the literature, little or no information appeared to have been offered to sunbed users in terms of safety advice, eye protection, and avoidance by skin type, advice following re-tubing of machines, duration and frequency of sunbed use. Little attempt appeared to have been made by salon staff to dissuade young people under-18 years of age to not use sunbeds; according to their own accounts, they were rarely asked their age. Inexperienced staff were targeted as 'easy pickings' for young people to gain access to sunbed salons, they were viewed as inexperienced and less likely to think about the welfare of sunbed users.

Young people were aware of sunbed risks, especially that of skin cancer. They often distanced themselves from the risks because they felt there was insufficient evidence linking sunbed use to skin cancer. These views emerged because young people said that they did not hear about many cases of skin cancer and did not know any friends that had developed it. They did not believe stories in magazines or within health promotion literature. They viewed this threat as largely as fictional because they could not connect with the stories on a personal level and so were more likely to disbelieve the content. Participants also described feeling invincible and ignoring health messages in favour of living for the 'here and now'. The most effective avoidance and disassociation tactic employed by young people was cognitive dissonance. They were quick to counter any health risk or concern that they had about sunbed use by explaining how they benefitted in other ways such as improved self-esteem, confidence, appearance and physical rewards. When participants were asked to step into their 'parent's shoes' they were more likely to strongly oppose sunbed use and would fear for their child's welfare. They were able to understand how parents would be worried about their sunbed use but quickly slipped back into expressing cognitive dissonance. A potential approach for altering sunbed

behaviour may be by targeting affective behaviour and promoting use of artificial fake tan to achieve tanning goals.

Participants said that it was easy to access sunbeds; they reported that they were rarely asked for identification or were not asked their age. They were not routinely offered protective eye wear, or provided with any advice on skin type, duration or frequency and avoidance of burning.

Chapter 7: Results: Addiction and Stopping sunbed use

This chapter presents the findings on the theme of addiction and stopping sunbed use. These include what participants thought about stopping sunbed use, how legislation banning sunbed use in under-18's affects sunbed use and what factors will make reducing sunbed use difficult for young people to achieve or maintain.

7.1. Views about stopping sunbed use

Loss of autonomy

Several of the participants reported that they were tired of always being told that they could not do certain things. They felt any autonomous decisions in their lives were being removed and this angered several participants. Young girls wanted to feel more mature and to be left to take responsibility for their own choices and actions. One participant explained that young people want to grow up quickly and that denying access to sunbeds would take away their autonomy.

FG7 "Everything now is, you can't do this you can't do that.....do you know like you're not allowed to have a drink, you get told no to everything, you are too young to do it. So it makes everyone think, oh, I want to grow up quicker. So if they say you can't go on sunbeds that is just another thing that makes kids or girls our age want to grow up quicker"..(Non-sunbed user girl, 14-15, high deprivation).

Participants felt that actually giving back control may enable them to make their own decisions. They wanted to stop being told what they should not do. Erin talked about reduced autonomy to make choices and decisions. She felt that young people were being treated like children and she was tired of not being allowed to mature. She also hints that she was confident that she knew exactly

what she was doing she had evaluated the risks and was comfortable with her decisions.

FG7 “They have never actually brought out anything that says you can actually do this, it is always you can’t do this or that, so we will just do it to wind you up..... You should be told you can do it that is down to you. These are the benefits and these are the risks and how they affect you and all stuff like that. I am allowed but I will decide myself if you think something will go wrong you will not want to do it.” (Sunbed user girl, 14-15yrs, high deprivation).

“Again they just treat you like a little child that you are too young coz again if you know what you are doing it should be ok.” (Erin: sunbed user, mixed deprivation, 15-16yrs)

Josh was involved in one of the focus groups and refers to allowing informed choices. He talked about having the time and space to think about consequences and to make autonomous decisions.

“.....I suppose the things that people were bringing up about the future problems like skin cancer and having the time to just think about the dangers and stuff. It was good to talk about it without being told you’re not allowed to use the sunbeds. (Josh: sunbed user, high deprivation, 15-16yrs)

Responding to personal stories

Some participants felt that the harmful effects of sunbeds were less likely to affect them. They thought more about the here and now and calculated that the risk that they would come to harm would be very small. They felt that there were too few cases of skin cancer in young people. However, participants felt more connected to real stories or to case studies about young people of their own age. They felt that this was more personal and they could better relate to their

peers. This was highlighted several times during the focus group sessions. Abbey acknowledged the risk of cancer and she believed that most young people were aware of the skin cancer risk. She steers us towards thinking that there needs to be a connection with the story teller, either the same age or a frequency sunbed user.

“....the thing is most people who go on the sunbeds know the effects of cancer... maybe if someone our age had cancer like a case study and she went on them all the time and that her risk increased because of the sunbeds that would be a good example that might stop people going on it.....I don't know, most people know the effects.” (Abbey: sunbed user, mixed deprivation, 15-16yrs)

Chloe explained that personal stories were also very powerful but the reality of actually speaking to someone face to face would have more effect upon young people stopping. This was because they knew that it was real and it was not a fabricated story or “fake” media plant. She also felt that the effect on a celebrity may have a greater impact. There was some scepticism about the statistics that are used to persuade young people to stop risky behaviours, participants said that they did not believe that this information is truthful. They prefer to put their trust in something that they can judge for themselves such as a personal testimony.

“I would say speaking to someone who has been affected, a real person, coz magazines feel like fake and the tele (Television) always feels fake, because the media is so like, they lie about stuff so that you think it is fake but if you were to see it in real life you may..... there is always only negatives and the people in magazines the stories are usually people you don't know. So you don't think it is real, maybe if it did happen to a celebrity but I have not really heard of it happening to a celebrity.” (Chloe: sunbed user, high deprivation, 15-16yrs)

FG8 *“.....you are just getting facts and figures shouted out at you it can cause cancer and that, it is not real it is just numbers but if you have got someone telling you..... I went on the sunbeds and this is what happened to me, I got cancer or whatever it will hit home more wont it?” (Sunbed user boy, 15-16yrs, mixed deprivation).*

Personal experience

Earlier in the chapter young people reported how personal stories and family experiences may make them think twice about using sunbeds. One participant's cousin developed skin cancer; this prompted the young sunbed user to seek medical advice with support from her mother. This focus group consisted of younger participants aged 14 to 15 in a deprived area. This sunbed user suggested that her peers were not really concerned about their own risk and that the desire to have a darker tan and the ability to look more mature overtook the fear of any risk to themselves even when they would have had a close connection to the personal story. The impact of the experience of her cousin shocked and frightened the participant. This was personal to her and her own behavior was modified because of this. The participant made the decision herself to stop using sunbeds after regular exposure to them three times a week. It was interesting to see the intensity of other focus group participants. This story really seemed to resonate with them, and whilst it was not their own family member, their inclusion in the group discussions appeared to shock them.

FG3 *“When my cousin got skin cancer and everything it was proper scary. So I told my mum I had been using them and everything and I was proper petrified coz I had moles as well and I asked my mum to take me to the hospital and everything, in case I had skin cancer because of my moles. So I went to my doctors and he said everything was alright..... She was 19 she is 21 now so that was two years ago she got it early and got cream and stuff for it but she*

can never use sunbeds or it will just come back.” (Sunbed user, girl, 14-15yrs, high deprivation).

*“And the people that you hang around with were they frightened by it?”
(Interviewer)*

FG3 “Some of them but some of them still go on them....I have told them they can get skin cancer but they still use them they just like being brown and I think they think they look older as well because they can get on the sun beds.” (Sunbed user, girl, 14-15yrs, high deprivation).

Fear and apprehension

Participants were asked what would make them stop using a sunbed during focus groups and one-to-one interviews. Several participants highlighted how they were frightened of a film called “Final Destination 3”. The film plot involves ‘Death’ catching up to certain individuals. One scene involves a sunbed user who becomes trapped in the sunbed and burns to death. Participants said they were genuinely fearful of this possibility and many of them talked about stopping sunbed use completely, some said that they were more cautious when they returned to using sunbeds again and would check that the lid on the sunbed machine would not lock.

FG7 “I want to go on them....I am too scared, I watched Final Destination” (Non-sunbed user girl, 14-15yrs, high deprivation).

FG3 “I think a load of people stopped going on because there was a film about a sunbed...what is it called? (Group “Final destination 3”) and she dies because the sunbed over heats. And a load of people stopped going on when that first came out.” (Sunbed user, girl, 14-15yrs, high deprivation)

FG3 “Yeah someone goes on the sunbed and explodes.....I think coz I saw that I now don’t want to go on them.” (Sunbed user, girl, 14-15yrs, high deprivation).

One female participant mentioned a Channel 4 film production called the “The Truth About Tanning”, in this film celebrity girl group singer Nicola Roberts travels around Merseyside meeting young people and adults and discusses the impact of sunbeds. One participant was shocked by the amount of surgery that was required after skin cancer removal. The fear of body disfigurement was more of a concern for some than the thought of cancer.

FG5 “I watched something on the television and it was with Nicola Roberts from girls aloud and she was going around Liverpool and she was meeting loads of girls not much older than us and she went to some ladies house and she had to take some skin from her stomach to put on her head or something like that it was gross.” (Sunbed user girl, 14-15yrs, low deprivation).

Participants were suspicious of government backed information and information displayed in salons. They felt that salons were only out to make money so the messages were untrustworthy. They doubted any facts and figures. They felt that if there was sufficient evidence that sunbeds were unsafe then sunbeds would have already been banned. They describe evidence as meaning, “real people” that they can see and listen too; they were more likely to listen to people’s stories and testimonies.

FG6 “If you had evidence I would not use them (sunbeds). Bring someone in who has cancer... if you have evidence bring someone in here.” (Sunbed user girl, 15-16yrs, high deprivation).

FG8 *“I think there should be more out there about what the real risks are, so that anyone who decides to go on a sunbed like knows the risks first and are not going into it naively. If you know what I mean, so as long as people are educated about it that would help, it may even put some people off. I think a lot of people who use them don’t know the risks. They think, I will go and get a tan and that is it.” (Non-sunbed user boy, 15-16yrs, mixed deprivation).*

Other activities that young people thought might engage them were with the use of photo-sensitive aging software. This software shows UV damage below the structures of the skin. Current anti-sunbed campaigns by CRUK show faces of young people whereby half of the person’s face looks normal and the other half shows unseen damage to the skin by UV exposure. Participants were promoted for responses about this type of activity.

FG2 *“Those things that celebrities get put on their face and it shows all their freckles and damage (Photo-sensitive ageing).” (Non-sunbed user, girl, 15-16yrs, high deprivation)*

FG4 *“There should be a website where you can upload a picture of yourself and show you what you look like.” (Sunbed,user, girl, 15-16yrs, low deprivation).*

Three young people who attended the focus groups and followed up with one-to-one interviews decided to stop using sunbeds following their participation in the focus group activity. The discussions were not designed to impart any knowledge, judgements or opinions, yet these young people refer back to the focus group as the catalyst for changing their sunbed behaviour.

“I have not been on a sunbed since the last time we spoke about it in the groupErm just wasn’t bothered coz it was near to Christmas, I just got a spray tan instead....My mate is addicted to the beds and she is only my

age 16 and I can see her getting wrinkles around her mouth already and I don't want to get wrinkly by the age of 20 so....I have just stopped now"
(Alexis: sunbed user, low deprivation 15-16 yrs)

Ellen was a younger sunbed user who used them every day. She said that she was not addicted to sunbeds, and she used them mainly because she was bored. Following the focus groups she had decided to stop using sunbeds. She discussed how she would never use sunbeds again and would resort to applying fake tan instead.

"I stopped about two months ago.... Because of the thought of skin cancer, and people have been diagnosed with it, it also can give you wrinkles and can age you more." (Ellen: sunbed user, high deprivation, 14-15 yrs)

Josh had been thinking about stopping and had given it serious thought. The focus group appeared to provide time and space for young people to talk about sunbed issues and behaviour. They openly challenged each other and swapped opinions and ideas, as well as stories and anecdotes.

"I have been thinking about stopping since we talked with you at the group thing....I suppose the things that people were bringing up about the future problems like skin cancer and having the time to just think about the dangers and stuff. It was good to talk about it without being told you're not allowed to use the sunbeds." (Josh: sunbed user, high deprivation, 15-16yrs)

Within one focus group the entire group highlighted how much they valued the opportunity to discuss issues in a non-judgmental and open forum.

Thoughts about a sunbed ban

In-depth interviews were completed prior to legislation being introduced in April 2011 banning young people under-18 years of age from using sunbeds. Participants were asked how they would cope if a ban was to come into effect. Most participants felt that there would be little effect with the introduction of the legislation. They explained that accessing a sunbed would probably be more difficult, but that they would still be able to access them. They discussed how they would employ a variety of strategies in order to continue to access sunbeds. The minority of participants feared the introduction of the ban and appeared worried about how they would be able to cope. Some participants also felt upset and angry about their liberties being infringed.

“I would be really upset to begin with it, I would be really stressed out if I have been doing it for this amount of time then surely it is fine for me to carry on, but there is probably not much I could do about it until I was old enough.” (Gemma: sunbed user, mixed deprivation, 15-16 yrs)

“I would be gutted proper worried because my spots may start all over again and that will then mean I will get depressed and then it just goes mad after that. Are they doing that yeah... putting a law in?” (Steve: sunbed user, high deprivation, 15-16yrs)

Three participants in one-to-one interviews said that they would access a home based sunbed at friends or relatives houses or that they would ask their parents to buy one.

“I would get fake ID or even use a bed that someone has. My aunty has a sunbed I could probably persuade my mum to ask for me to use her sunbed.” (Steve: sunbed user, high deprivation, 15-16yrs)

Andy said that he would ask his mum to get him a sunbed as she was supportive of him using them because of his skin condition. Andy claimed that he was addicted to sunbeds and therefore, easier access may have proved more convenient for him which may have led to greater sunbed use.

“I ask my mum to buy one for home.” (Andy: sunbed user, high deprivation, 15-16yrs)

“I would probably ask my parents to get a sunbed and get them to put it in the garage or something.....I suppose I would be at more risk because I could probably use it more, it is free and it is not costing me anything.” (Charlotte: sunbed user, mixed deprivation, 15-16yrs)

“I hate it, it’s so expensive, luckily my friend has a sun shower in the bedroom and it is amazing so I will just go there all the time instead, so it is not going to affect me as much but my sunbed salon is around the corner from my house but it is expensive. I think it will cut down the amount of people going but you just get fake ID so you can go on them anyway. (Amy: sunbed user, mixed deprivation, 15-16yrs)

Most participants said that they would use fake identification in order to use sunbeds. Some would test and probe for salons that would let them use the facilities. Word of mouth from fellow peers was a good way of identifying the next salon that they could exploit. Others said they attempt to coerce staff into allowing them to use the sunbed by providing a letter off parents, sometimes these would be forged.

“I would be annoyed coz you’re not allowed to do anything anymore it is unfair that they could do that. I think I would have to get false ID or find out where they let you on. There is bound to be some dodgy place that would let you on.” (Craig: sunbed user, high deprivation, 15-16yrs)

“Are they doing that I would be gutted? That is terrible we would have to still go on the beds. They ban ciggies and people smoke, they ban alcohol and kids drink, so I am sure we can get on sunbeds somewhere. Otherwise we would just have to get fake ID and use that... they can obviously put the ban in place but people will just use fake ID or get home sunbeds.” (Mandy: sunbed user, mixed deprivation, 15-16rs)

FG3 “The first time I went for a sunbed they asked for ID and I got someone to forge it for me....I got a note to say I was 16.” (Sunbed user, girl, 14-15yrs, high deprivation)

Some sunbed users chose to access sunbeds when a younger or more junior staff was on duty, they felt that it was easier to access the sunbeds because they were less likely to be challenged about their age and that in general, and that salon staff were not likely to care about sunbed users welfare. They said that the sunbed industry was a business which was there to earn money and to possibly exploit young people.

FG5 “Like XXX don’t like letting anyone in, you can tell if they are going to let you in or not. It is the way they look. If they are dead young and common, they will say alright but if they are old I don’t think they will let you on.” (Sunbed user girl, 14-15yrs, low deprivation).

FG4 “Most of the girls are 18 or 19 years old that work there.....they don’t care. (Sunbed,user, girl, 15-16yrs, low deprivation)

“How does that make you feel?” (Interviewer)

FG4 “Good because if you look through the window and it is a young girl, you’re more likely to get on the beds.” (Sunbed,user, girl, 15-16yrs, low deprivation)

Many sunbed users within the focus groups expressed shock about the potential ban on under-18s sunbed use. Several suggested that legislation would have limited effect. Some participants felt that legislation was futile and that young people would still be able to access sunbeds if they wanted to.

FG2 “Some shops would just do it anyway, I am only 15 and I have been served with ciggies and ale before. Some people are just going to do it anyway”. (Sunbed user, girl, 15-16yrs, high deprivation)

FG8 “It will make a difference but like alcohol you will get people trying to sneak in under the radar you know what I mean? Who maybe look a bit older or maybe you will get dodgy places that turn a blind eye or whatever”. (Non-sunbed user boy, 15-16yrs, mixed deprivation).

Participants said that the current laws prohibiting the sale of alcohol and cigarettes and driving whilst using a mobile telephone have been largely ineffective and therefore, the sunbed ban will also have little effect.

*FG4 “Young people drink and smoke and a ban does not stop that.”
(Sunbed,user, girl, 15-16yrs, low deprivation)*

FG4 “I don’t believe they could stop anyone. Using you phone in your car is illegal and yet people still do it.” (Non-sunbed,user, girl, 15-16yrs, low deprivation)

7.2. Addiction and sunbed use

During one-to-one interviews and focus groups it became apparent that some participants would find it difficult to stop using sunbeds. Some of them had been

using sunbeds for three or four years. Five participants reported that they felt that they were addicted to sunbeds and explained how they would find it difficult to stop without professional help. They feared not being able to use sunbeds because they were dependent upon several types of rewards. These rewards were likely to present as either physical or psycho-social benefits. The physical effects included the “adrenaline rush” and feeling of physical satisfaction. The psycho-social reward was related strongly to improved self-esteem and issues around maintaining self-confidence.

Andy was a 15 year old who used sunbeds regularly having used them for several years. He was from a deprived area in Liverpool and had issues of low self-esteem including reduced self-confidence and concerns about spots and being overweight. All five young people who reported feeling addicted to sunbeds had very poor self-esteem. They described how not using sunbeds made them short tempered, anxious and sad. Andy is typical of these participants, he used sunbeds frequently two or more times a week and any break in his routine left him feeling stressed.

“You mentioned before that you need to use sunbeds, you said you are addicted, do you think you are addicted to them?” (Interviewer)

“Yeah, I am like... if I don't go on once through the week and at the weekend I will make sure I catch up and go on more over the next weekend. If I don't go on twice a week I will go on three the next. I just need to go on em.” (Andy: sunbed user, high deprivation, 15-16yrs)

“If you don't go on sunbeds how do you feel?” (Interviewer)

“I get dead depressed with it. It is like alcoholics with alcohol, I have just got to go on them and if I don't, I get ratty and stuff, I also get depressed and just..... sad”. (Andy: sunbed user, high deprivation, 15-16yrs)

Amy's fear of not being able to use a sunbed instantaneously made her feel like she was going pale. There was an element of dissatisfaction and insecurity if

she was not able to top up her tan. This was her 'comfort blanket', anything less than her normal routine would begin to make her anxious and less confident about her appearance.

"I think that they are really addictive as well though, like once I went on them I could not stop and I was nailing them for 4 months last year three times a week". (Amy: sunbed user, mixed deprivation, 15-16yrs)

"You talked about being addicted to them how did you feel if you could not go on them?" (Interviewer)

"Erm.. It bothers me when I don't go on the, like tonight when usually I go on a Monday, Wednesday and Friday it bothers me because you feel that you are going paler straight away when you are actually not, you just feel like you are". (Amy: sunbed user, mixed deprivation, 15-16yrs)

Further into Andy's interview he explained that it would be incredibly difficult for him to stop using sunbeds. He felt that he would require external professional support in order to control or stop his addiction.

"You see I am interested in what happens to you because you feel that you may be addicted now, how will you be able to stop?" (Interviewer)

"I think I would have to see a psychiatrist or somebody to actually help me to stop because I actually need sunbeds now. I have got to go on. I don't think the school could do anything really, people smoke and stuff get sent home and everything but it doesn't do anything. I would need more help I reckon". (Andy: sunbed user, high deprivation, 15-16yrs)

Mandy was a 15 year old frequent user of sunbeds. She also described needing support to stop using sunbeds. Mandy also talked about feeling anxious and stressed if she cannot access sunbeds. She said that her confidence in her

appearance would waiver very quickly and this would heighten her anxiety. Mandy also talked about the social aspect of her sunbed use. The desire to be around friends was important to her and she feared losing the social structure and routine that she had been acting out for so long with her friends.

Mandy's case study, aged 15: Mandy says she is addicted to sunbeds

"How would you feel if you were not able to use a sunbed during one of your regular sessions?" (Interviewer)

"I would feel quite stressed if I wasn't using the sunbeds as often as I do. If you don't use them or days go by you start to feel low and anxious. You become self-conscious and just want to be back on the beds". (Mandy)

"Would you like to stop using sunbeds one day?" (Interviewer)

"Yeah I would but I think I would find it really hard because I NEED to use them now. I would be frightened that I could not stop using them. I think I would probably need help to stop me using them now because it has been so long". (Mandy)

*"Would you describe yourself as being addicted to sunbeds?"
(Interviewer)*

"Yes they are well addictive. I suppose it depends what reasons you are going on for, I go on for a tanned look, to feel good and to spend time with my mates so I don't want to lose that. Others may only want some of these things. (5 second pause)..... I suppose you could say I was addicted to them in some way because I can't stop going on em and have been for two years". (Mandy)

Most of the boys emphasised that having spots was the reason for their excessive sunbed use and not because they wanted to be more attractive or for sociable interaction. Steve said that his original reason for going on a sunbed was to clear his spots and he feared that they may return if he did not continue

to use them. He also talked about how he enjoyed the physical feelings following sunbed use. Steve made further reference to emphasise that he was addicted to sunbeds by referring to the expression “cold-turkey”. Although Steve used humour in the excerpt below, his body language displayed feelings of real anxiety, with him shifting around his seat and nervously joking, following his staged laugh he bit his bottom lip. This indicated that he was more concerned about not being able to use sunbeds.

Steve’s case study: Steve says he is addicted to sunbeds, describing physical effects

“How do you feel if you miss a sunbed session?” (Interviewer)

“I feel anxious really, I get all sweaty and worried coz I don’t want to get my spots back. I mean you do feel good when you come off the beds you are buzzin and everything. You feel on top of the world and stuff. I don’t know it is just sound really, I can’t describe it”. (Steve: sunbed user)

“You mentioned before that you need to use the sunbeds you said you are addicted do you think you are addicted to them?” (Interviewer)

“ Yeah I am like, if I don’t go on them a couple of times a week I do get a bit twitchy like, I need to go on them...(Pauses for thought)...I get dead down sometimes it is horrible when you just feel sad you can use the beds and then it picks you right up again”. (Steve)

“Would you find it difficult to stop now?” (Interviewer)

“Yeah it wouldn’t be easy I don’t think.....I am kind of use to them now so I don’t know how I would be if I stopped using them, I would probably go cold turkey (laughs)”. (Steve)

“How would you feel if you did not use sunbeds?” (Interviewer)

“I would be gutted like... but I’m not going to stop using them so that doesn’t bother me really. I think it would be well hard for me to stop using the beds now coz I would say I was addicted to them, well when I say addicted I mean it wouldn’t kill me or anything but I would try to get on them somehow”. (Steve)

Many participants spoke about how they were not bothered about using sunbeds yet they appeared to be very much dependent upon using them. Britney reported that she was not bothered about sunbeds during her interview but later in the interview she contradicted herself describing her craving to use them.

“If they took sunbeds off the planet would you be bothered?” (Interviewer)

“No, I think I am thinking a bit different now from needing to have a tan to wanting to have a tan. I can more or less not be bothered as much. When I was using those loads and I passed the sunbeds every time I walked passed I wanted to go in and I thought this is pathetic”. (Britney: sunbed user, high deprivation, 15-16yrs)

“So how many times a year are you using sunbeds?” (Interviewer)

“Once or twice a week not routinely but when we had a party so I would go on Friday and Saturday before the party and that was it really. I don’t know why I think we all went on so I said I will go on with them but I don’t feel I need to go on the sunbeds”. (Britney sunbed user, high deprivation, 15-16yrs)

“Do you mean when you had a break?” (Interviewer)

“When you haven’t been on the sunbeds for ages and then I went on them I would then feel a need to go on them and if you have money on you or anything you will want to go on when you are not doing much..... it sounds crazy once you have been on a sunbed it is like you crave to go back on the sunbeds” (Britney: sunbed user, high deprivation, 15-16yrs)

“Are they addictive?” (Interviewer)

“Yeah very addictive”. (Britney: sunbed user, high deprivation, 15-16yrs)

Comparison between interviews and focus groups relating to addiction and dependency

During one-to-one interviews participants openly discussed their addiction or dependency for sunbeds. Young people seemed more reluctant to discuss this tendency in focus groups in which it did not appear as a major theme.

Moreover, it was only young people in the focus groups that represented the more deprived areas that discussed this addiction in the group setting, yet those addicted in the more affluent schools did not to speak about addiction. During one focus group one of the male participants discussed cravings and the desire to use sunbeds.

*FG2 “I think it is like an addiction as well, because if you have been going on for that long, it makes you feel like you have got to do it.”
(Sunbed user, girl, 15-16yrs, high deprivation)*

FG2 “It is like a craving once you have done it you can’t walk past a shop without going back on them, Can you!” (Sunbed user, boy, 15-16yrs, high deprivation)

“So it is like a craving!” (Interviewer)

FG2 “Yeah you have got to go on. Like people who try to stop smoking they can’t it is the same when you try to stop using a sunbed you can’t you have got to go on haven’t you?” (Sunbed user, girl, 15-16, high deprivation)

7.3. Discussion

This chapter presents a set of challenging dilemmas. It is difficult to rationalise how the potential effects and risks of sunbeds on young people’s health balances against what young people describe as the psychological benefits of sunbed use such as, increased self-esteem and enhanced confidence.

Legislation plays an important role in terms of young people being able to access sunbeds easily as prior to legislation banning under 18s using sunbeds in 2011 access has been left to the discretion of salon staff in the absence of clear guidance. In this chapter I will discuss what young people think about stopping sunbed use and will then describe the possible implications of the ban on young people using sunbeds.

Participants said that they felt tired of being told what they are not allowed do all of the time particularly by the government. Policy makers and politicians are continuously focussed on how to prevent young people from pursuing risky behaviour and risky endeavours and some of these behaviours may be labelled as unhealthy, deviant, anti-social and non-productive (Social Exclusion Unit, 2000; Office of National Statistics, 2004; Campos et al., 2006; Macvarish, 2010). In an attempt to gain back some margin of control, young people may continue to access risk taking behaviours due to the constraints being placed upon them. Blackman (1997) argues that these constraints inhibit the opportunity for pleasure and thus, young people can exercise their autonomy by choosing if they want, to modify their experience with the only absolute thing they can control, their own bodies. The theory of self-determination has been closely linked to autonomy. The self-determination theory defines decision making as being based upon a set of personal values and interests which determine lifestyle and choices, rather than being governed by external influences (Pavey and Sparks, 2010). Autonomy is seen to be akin to self-governance, whereby, the individual acts according to their internal values rather than external pressure or controls. Williams et al. (2006), in their longitudinal randomised trial in the US on smoking cessation concluded that facilitating autonomy-supportive interventions have been shown to increase autonomous motives for health behaviours such as smoking cessation, thus leading to increased smoking cessation success. Young people said that they wanted control of their decisions, they wanted to exercise their own judgements based on their own values after weighing up all the facts and refuted any paternalistic responses

from authority. One strategy to achieve this in the area of sunbed use is to engage more effectively with young people about the dangers and risks versus the benefits, so that they may make a choice based upon their own values and knowledge.

Responding to personal stories

Young people's personal choices and decisions were based upon the things that matter most to them, including their personal viewpoints and available information. They were clear for example about what counts for evidence. They said that they did believe statistical information or straplines and they did not listen to the views of spokespersons, however, they were more willing to accept the personal testimonies of peers their age to listen to the narration and interpret meaning from the lived experience. Evidence to young people was something that they instantly connected with and understood. Being closer to what they describe as evidence may have more influence. Many of the participants felt that they could not connect with what health providers offer to influence a change in their behavior. This was because they did not believe what they were being told. They would however, connect with personal stories from people like them, who were their age and who they thought would understand their feelings and needs better than health promoters or policy makers. The personal story adds value for them. Stories can be thought of as narratives of human experiences. Bauer et al. (2008) argue that narratives consist of personal attributes that people will respond well to, such as emotion, characters, plots and meaning. Crossley (2003) and McAdams et al. (2006), indicate that presenting personal narratives can project a sense of identity, which is important for young people in later adolescence and early adulthood (McLean et al. 2007).

Young people said that the most effective way to be more effective in providing health messages is to know who connects best with young people and in this case it would be young people themselves, who are adversely affected by sunbeds. Young people may be drawn to the stories that they can relate to,

however, these may evoke strong emotive responses, particularly if the person is known to them. Brown and Locker (2009) suggest that emotive images might trigger defensive avoidance responses and therefore may reduce the perception of risk estimates in some individuals. This suggests that there needs to be a balance between young people connecting to the health messages and careful consideration about emotive scenarios and stories.

Fear

Sunbed users and non-users from both focus groups and in-depth interviews felt that fear could either prevent young people using sunbeds or at the very least make regular users think more about what they were doing. The literature indicates that more emotionally intense message content within health promotion campaigns are more likely to evoke higher levels of fear and these tend to be more persuasive in changing attitudes (Mongeau, 1998; Lewis et al., 2013). However, evaluations of these campaigns show mixed outcomes (Hale & Dillard, 1995). One explanation which may explain these inconsistencies is due to emotive stimulus which could activate psychological defences, which function not only to control negative emotions but also might inhibit persuasion to change behaviour (Brown, 2001; Gleicher & Petty, 1992; Leshner et al.; 2009). Witte and Allen (2000) concluded that high fear and high efficacy was more effective than high fear and low efficacy which was more likely to cause an individual to exhibit defensive strategies because they view that certain health promoting goals were unachievable.

Young people in my research referred to a horror film called Final Destination 3. In this movie death follows several people whose fate is sealed and they each die in a series of tragic circumstances. In one scene an individual gets trapped on a sunbed and is burned to death. Whilst young people described this as a fictional horror, those who saw it were nearly all affected by the fear of using a sunbed afterwards. Young people were aware of the risk of skin cancer and were fearful of this happening, but placed little concern that they would get

cancer because the likelihood was so small. The chance that something could happen to them was largely ignored, but believable stories and messages that highlighted potential effects may temporarily influence young people to modify their risk taking activity.

Introduction of the sunbed ban for under-18s

The use of sunbeds has created much debate about the cancer risk associated with artificial tanning use. There was mixed evidence initially, which has now become clearer in terms of increased risks associated with the development of malignant melanoma and sunbed use. The introduction of English sunbed regulations (DH, 2010) came into effect in April 2011 and aimed to improve compliance and provided restrictions on sunbed use for under-18s. Inadequate monitoring, limitless local powers of enforcement, and the absence of clear local strategies, may leave young people at greater risk of the effects of sunbeds.

Legislation to control sunbeds is in place in some countries such as Finland, France, Belgium, Norway, Portugal, and Sweden, some states in the United States, New Zealand and Australia. France has robust legislation banning under-18s using artificial UV devices, but many countries fall short of banning use for under 18s. Brazil has a country wide ban and the different territories in Australia will have signed up to a total ban on sunbeds by 2014 with New Zealand to follow. In most developed countries efforts to implement legislative changes have been ineffective in relation to regulation of the industry or preventing minors under 18-years using sunbeds (Schnieder and Kramer, 2010).

The All Party Parliamentary Group on Cancer (APPGC, 2009-2010), as part of Britain Against Cancer, supported a private members bill in an attempt to introduce legislation banning sunbed use for under 18s in England. The parliaments of the constituent countries in the UK and the Welsh Assembly have all now legislated to prevent under 18s from using commercially operated

sunbeds. Within Scotland in 2009, legislation banned the hire, sale and use of UV tanning equipment to under -18s. They also set the benchmark for improving standards, stipulating the need for supervised sunbed use within salons and the provision of information for any user of a sunbed. In 2011, following CRUK, CIEH and others strong lobbying campaigners the Westminster' sunbed 2010 Act came into effect. This legislation also aimed to prevent the use of commercial sunbeds by under 18s. There was also the option to instigate further provisions through secondary regulations; however, this is somewhat limited. In October 2011 the Welsh Assembly Government went further and made extra provisions and restrictions. In the English 2010 Act, sunbed businesses can be staffed or unstaffed, this included coin operated sunbeds. However, the Welsh regulations stipulated that sunbed businesses needed to ensure that any use of sunbeds in commercial properties should be supervised by a "competent supervisor". This restriction therefore, excludes any unstaffed sunbed premises in Wales. Further secondary regulations were exercised to protect under 18s including, banning sunbeds business in domestic premises and on the sale and hire to under 18s too. Regulation seven prescribes the need for specific information being provided to sunbed users about safety and risks, and that UV eye protection is required. In May 2012 Northern Ireland also introduced legislation that prohibits the sale, hire and use of sunbeds to under-18s. The Northern Ireland provisions go even further and mandate the need for sunbed staff to be trained, to provide information and to promote the use of eye protection.

To summarise, in the UK there are legal requirements for the supervised use of sunbeds, with a commitment to improve training and competence of salon staff except that is, in England. The English government however, may be viewed as short-sighted as they have appeared to be reluctant to follow good examples set by the Welsh Assembly and the Northern Ireland Assembly who have implemented further regulations. England's departure from the spirit of the legislation may weaken the legislation and may encourage young people to

access unlimited exposure to such artificial UV devices. It would be particularly challenging for example, for local authority or environmental health officers to monitor compliance with the ban on under-18s using sunbeds in salons that are unsupervised? There are insufficient officers to inspect sunbed premises. Officers can act if breaches have been observed or reported but this rarely occurs. Adults are currently able to make choices about how much they use sunbeds and therefore coin operated options are still available, yet little thought has been given in the English legislation about how local authority officers are going to be able to enforce a ban on unsupervised coin operated machines. Another precursor to this incongruity is the feeble attempts from Westminster regarding a stance for ensuring that salon staff are trained and are competent when supervising sunbed use. Users need to be provided with safety advice, protective goggles and written information so that they may make informed choices. The public are being exposed to a category one carcinogen, so stricter standards should be imposed. The ban on under-18s heightens the need for adequate training in respect of ensuring that operators are acting legally and that they understand their duties, they also need to fully understand health and safety requirements and should be able to articulate these to users. Such ambivalence would not be tolerated if for example; people were allowed to handle dangerous chemicals that were carcinogenic without adequate training and competencies.

An important point to explore here is that many sunbed premises are actually unaware of the specification and dose of UV that is being emitted by their artificial UV devices. Tierney et al. (2012), in this CRUK funded study 402 sunbed units were tested for compliance with the European standard, erythemal-effective irradiance. The dose should not exceed 0.3 W m^{-2} . The values that we measured ranged between 0.10 and 1.32 W m^{-2} with a mean of $0.56 \pm 0.21 \text{ W m}^{-2}$. The authors concluded that 9 out of 10 sunbed units emitted UV levels that exceed the European standard. Sunbeds have been classified as carcinogenic to humans, young people in Liverpool are using sunbeds in greater

numbers and a local dosimetry study has also confirmed that sunbeds may be emitting one and a half times the European standard. This presents us with a situation where young people are being put at considerable risk of burning and developing skin cancer in the future. This highlights the need for tighter regulations to ensure that sunbeds are not exceeding maximum limits of UV.

Most participants did not fear the consequences of sunbeds but they did fear the ban and they worried about the effect of it. Most participants felt that they could still get access to sunbeds if they wanted to. One strategy employed was to obtain fake identification. The use of fake identification to attempt to use a sunbed is an offence and the implications do not only affect the person using the false ID but also the establishment that allows the offence to take place. For alcohol the industry has begun to try to address this issue with initiatives such as “challenge 25” and “think 21”. This has made it much more difficult for young people to buy alcohol just because they look older. However, industrious young people have now responded to this tactic by obtaining fake ID from the internet or by borrowing a friend’s ID. Young people often use a driving license, motorcycle license or a UK national identification card. Some do not realize that it is an offence under section 1 of the Forgery and Counterfeiting Act (1981) “to make false instrument with the intention to use or to induce a person to accept it as genuine”. It has been increasingly difficult for the government to restrict access to these documents as they are easily available on the internet, usually accessed from foreign-based companies. Under the Fraud Act (2006) a person including under-18s who knowingly use false ID are “liable for conviction on indictment to imprisonment for a term not exceeding 10 years or to a fine (or both)”. The ban on sunbeds for under-18s accessing a restricted area within a salon or attempting to use a sunbed makes it possible for young people to be vulnerable to further prosecution if they are found to be attempting to use a sunbed and to be using false ID.

It is debatable that the legislation will have an effect on sunbed use. Legislation in other areas has proven to be less successful. Wilson et al. (2012), conducted a systematic review of the literature on the impact of tobacco control measures on smoking cessation by in a US study, and examined over 84 research articles and concluded that there was only moderate effect on legislative restrictions, but highlighted that there was limited evidence in this area. The primary limitations of the legislation within tobacco control are the ineffective enforcement of the restrictions, (Porkorny et al., 2006; Stead and Lancaster, 2005). Young people however are able to improvise well and have been found to be more likely to obtain their cigarettes from other social sources or by non-commercial means (Catrucci et al., 2002 and Harrison et al., 2000). Gender differences have also been reported, in a study by Hublet et al. (2009), in a European collaborative cross national study of 15 year olds found that boys were more likely to smoke less than girls due to policy restrictions and the reason cited was because girls were more likely to obtain their cigarettes via social means, asking friends and older peers and family. Boys were more likely to attempt to buy cigarettes and thus may not have been as successful at sustaining the habit.

The government has recognised that commercial businesses such as drink and food manufacturers and supermarkets can influence the choices people make and they attempted to capitalise on this by introducing 'responsibility deals'. This focuses businesses and other organisations and agencies to work towards enhancing public health goals. However, Panjwani and Caraher (2013) in a recent article in press debated the responsibility deal approach, and provided evidence that it was fundamentally flawed in the expectation that the food and drink industry will take voluntarily action to put health interests above their own. Moreover, the authors suggest that the industry would benefit from their ability to influence public health strategies that may positively affect their products. This may have parallels with the sunbed industry being more involved in approaches like this. An example is the sunbed industry promoting sunbed use to obtain higher levels of Vitamin D to reduce increasing levels of vitamin D deficiency.

Whilst there is evidence to support limited vitamin D synthesis with the use of sunbeds, this position somewhat deflects the greater issue that artificial UV rays are carcinogenic. This highlights how health promoting messages could be manipulated. Legislation is not sufficient on its own although it is a useful tool; however, it requires support from other measures such as regulations. These regulations should tackle the root cause of the problem and they should be enforced.

Addiction and dependency on sunbed use

Addiction is a complex phenomenon and researchers have struggled to agree on a description to date. The word addiction was derived from the Latin verb *addicere* which meant “enslaved by” (Maddux and Desmond, 2000). In the 1980s consensus by experts in the field, addiction was defined as compulsive drug use (O’Brien et al., 2006). However, in the last decade compulsive activities such as gambling, eating, sexual intercourse, shopping and internet should also be considered as addictive behaviours have been debated (Frascella et al., 2010; Grant et al., 2010). The central precepts of addiction can include, reduced control of participation in the behaviour, repeated engagement in the behaviour despite adverse consequences, craving and desire to participate in the behaviour and strong compulsive participation (Jacobs, 2000; Protenza, 2006; Petry, 2006; Grant et al., 2007).

In 2011 the American Society of Addictive Medicine produced a Public Policy Statement (ASAM, 2011) that put forward a new definition of addiction. The new definition shifted the emphasis of addiction from that of a behavioural disorder to that of a chronic brain condition. It also asserted that a neurobiology effect of addiction involves more than just neurochemistry reward. It affects the frontal lobe which is important in inhibiting impulsive tendencies. Early exposure to addictive stimuli is purported to be a significant factor in the development of addiction. In the case of sunbed use, young people would likely to be at an

increased risk of developing addictive tendencies as the frontal lobe is still maturing.

Several studies align with the American Society of Addictive Medicine (ASAM) and support the claim that stimulation of dopamine secretion and physiological brain changes presented following functional magnetic resonance imaging scans, indicate the potential for addiction to be classified as a chronic brain disorder (Yuan et al., 2011; Zhang et al., 2011; Shapira et al., 2005; Han et al., 2010). Although samples in all these studies were small, a key aspect of the research studies was that they focus on other types of addictive tendencies such as internet use, eating disorders and gaming and not just substance related addiction which have been largely associated with previous definitions. There were no studies relating to altered brain morphology and sunbed use.

Participants in the current research described being invigorated and fresh and even euphoric following a sunbed session. There is some evidence that there may be a biochemical mechanism for tanning dependence, involving the release of endorphins (Cui, R et al., 2007). Kaur et al. (2006), linked the release of endorphins following UV exposure to that opioid effect following pain relief and hypothesised that there may have been a physiological basis for dependence with tanning behaviour. The study involved the use of an opioid antagonist to induce symptoms of withdrawal in frequent tanners by use of a blockade. Half of frequent tanners experienced symptoms such as nausea and irritation, which were not experienced by infrequent tanners, suggesting that sunbeds may be addictive. This study included 8 frequent tanners and 8 infrequent tanners. Nolan et al. (2009), following a review of the available literature concluded that in some individuals, tanning met diagnostic and statistical manual criteria for substance-related disorders. The desire to feel good physically was not the only reason cited by research participants in my research they also talked about social dependence and psychological wellbeing which was closely linked to confidence and self-esteem.

There is growing evidence of a link between sunbed use and addiction or dependency in adults. Murray and Turner's (2004) qualitative study in Merseyside interviewed sunbed users aged 18-32. One of the key findings from the study was that users described sunbed use as addictive. Heckman et al. (2008), following an online survey of 400 university students in the US identified that young adults were at risk of dependence on tanning. Other studies have shown associations between sunbed use and other types of risk taking and addictive behaviours such as smoking and substance abuse (Lazovich et al., 2004a; Wartham et al., 2005). Wartham and colleagues demonstrated a significant association between the addictive behavioural characteristics of those who use substances with those who frequently use sunbeds. Similarities between tanning dependence and substance abuse have also been identified by some authors who found that young people using two or three substances were more likely to be indoor tanners (Demko et al., 2003; Lazovich et al., 2004b; Boldeman et al., 1997; 2003). However, all participants in my research were very quick to dismiss any notion that young people who used sunbeds were also likely to participate in other risk taking pursuits.

There have been several studies relating to addictive tendencies and sunbed use involving adult participants. However, there are very few studies that have identified addiction in young people aged 14 to 16 years. Zeller et al. (2006), in a cross sectional study in the US following telephone interviews, concluded that young people between 14 and 17 years of age may be dependent on sunbed use. Moreover, those who started sunbed use under 13 years of age were more likely to report difficulty trying to quit sunbed use. Thomson et al. (2010), in CRUKs COMARE study also reported a tenuous link with addiction amongst young sunbed users in England. However the study did not report specific detail about addictive tendencies.

Young people in my research described how they believed that they were addicted to sunbeds and some of the diagnostic elements associated with it. These elements were themed by Sussman and Sussman's (2011) in their

review of 52 studies which identified addiction as, engagement in the behaviour to achieve appetitive effects, preoccupation with the behaviour, temporary satiation, loss of control, and suffering negative consequences. These elements have been reported by young people in one-to-one interviews in my research. However, caution must be taken in drawing conclusions such as addiction in my research only a few participants described feeling addicted. My research illuminates the fear of not being able to use sunbeds for those who felt that they could not stop. They were anxious about the ban preventing access and felt that they would be affected psychologically particularly referring to low mood, depression, poorer self-esteem and reduced confidence. They also acknowledge fears about the physical affect worrying that they may have withdrawal symptoms.

One of the key findings in the thesis study is that 14 to 16 year olds using sunbeds felt that they might already addicted to them. If we suppose that the young people in the current research were actually addicted to sunbeds or dependent on them then this would require a change in the way young people are diagnosed and treated. However, we need to appreciate that they may have varying pre-conceived ideas about what is addiction and what it is not. If indeed addiction through sunbed use is present then appropriate support would be required. Other forms of addiction in young people are recognised by health services and involve referral pathways for improved access to psychological therapies and support. More research is required on this topic area if we are to identify addictive tendencies amongst young people. In drug and substance misuse and alcohol addiction, services are available and child support in this area is well prescribed. The introduction of the sunbed legislation may leave young people effectively feeling “cold-turkey”; this may have an effect upon their wellbeing. Moreover, the current illegal status may prevent young people coming forward for help and support. Currently health services have no formal referral mechanism for providing support for young people addicted to sunbed use. There is a gap in services and young people may suffer unnecessarily

without specialist support services. Within the Health and Social care Act (2012) there are new legal duties which assert that, “Each clinical commissioning group must, in the exercise of its functions, have regard to the need to: reduce inequalities between patients with respect to their ability to access health services; and to reduce inequalities between patients with respect to the outcomes achieved for them by the provision of health services. Currently young people are unable to access support services relating to sunbed addiction or dependency because this phenomenon has not received such attention or sufficient evidence has not been presented. Further research is recommended in this area and appropriate psychological support services should be funded if more evidence of sunbed use emerges.

7.4. Conclusion

Participants wanted to make choices based upon information that they could understand and connect with. The most likely way young people would respond positively to alteration of risk taking behaviours would be by using personal stories that they were able to relate to. Some young people would also respond to shock tactics but it was less likely to have a sustained impact upon changing behaviour. Some young people decided to stop using sunbeds following participation in focus groups. Although only a small number of participants in my research stopped using sunbeds following focus groups, this area may warrant further research to explore the effectiveness of focus groups for altering risk taking behaviour through autonomous decision making.

The thesis research findings show how some participants feared the introduction of the sunbed legislation in England. They were worried that they would be committing an illegal act for which they were heavily dependent upon and were concerned that they would not be able to stop. This would inevitably mean that they would be breaking the law. This presents a difficult situation in that young people already feeling stigmatised will, as a result of the legislation, be left unsupported and isolated from any helpful supportive strategies. The research

highlighted that young people would continue to use sunbeds and would invest in new strategies that bypassed regulations. This included obtaining fake identification, encouraging parents to purchase a sunbed for home use, and selecting days when younger less vigilant or experienced salon staff was on duty.

As a consequence of a lack of vision by politicians, policy makers and the ineffective shortfall in regulatory monitoring and enforcement; has left young people feeling abandoned, unsupported, and angry. Enactment of the legislation banning under-18s using sunbeds is well intended, but little thought has been given to the effect that policy will have on young people, particularly those young people who are exposed to poor practice by salon staff and those who describe dependency or addictive tendencies.

Chapter 8: Discussion

This chapter illuminates some of the key results and positions them within the current debates in the field. In addition, I reflect critically on how the findings of the thesis studies have added knowledge to this area of study and describe the implications for policy and further research.

8.1. Originality

This research is the first qualitative study using both in-depth one to one interviews and focus groups to explore the motivations for 14 to 16 year olds in the UK who use sunbeds regularly. This research is unique in that the interviews were conducted prior to impending UK legislation banning under-18s using sunbeds in commercial premises. The skin cancer prevention strategy however, was developed following the introduction of the sunbed legislation. My findings indicate that young people perceived that they benefited from sunbed use. They explained how having a sunbed improved their appearance, which in turn improved their self-esteem, confidence and their ability to interact socially. Maternal and sibling influences were very strong motivating factors for initiation and continued sunbed use, with mothers directly and indirectly supporting their sons and daughters and often fund this activity. Fear of intimidation, alienation and teasing as well as positive feedback from peers was also an important motivating factor which contributed to why young people continued to use sunbeds. Salon practices were poor but both cognitive dissonance and disassociation about the risks of artificial UV exposure may have played a key role in justification for continued sunbed use. Whilst young people generally reported that they benefited physically from using sunbeds which made them feel relaxed and warm, some young people also described being addicted to them and said that they would find it difficult to stop using them. Young people also discussed how they would employ strategies to continue using sunbeds in the future, despite legislation banning under-18s.

This research has enhanced, supported and informed the development of a local skin cancer prevention strategy and sunbed risk awareness campaign and has demonstrated how research can be used to shape strategy and policy.

8.2. Discussion of key findings

The thesis studies highlighted that a key motivation for sunbed use by young people was receiving positive feedback from their peers about their appearance. This improved their perception of their body image because they felt more attractive and this in turn increased their self-esteem. Improved self-esteem boosted young people's self-confidence and thus, enabled them to fulfil their social roles with friends. They described feeling both pressure and desire to conform to overall societal acceptance, but not necessarily to conform to their peer expectations. Improved perception of attractiveness was achieved in varying degrees with some sunbed users wanting to achieve a natural tanned look and others were in pursuit of a much darker tan.

There are several studies that reported that sunbeds had a positive effect on attractiveness (Knight et al., 2002; Geller et al., 2002; Branstrom et al., 2004; Lazovich et al., 2004a; Danhoff-Burg et al., 2006; Hoerster et al., 2007; Schneider and Kramer, 2010). Most of these studies however, involved adult subjects. Two studies involved the use of telephone surveys but not in-depth exploration and these were not qualitative studies. The findings in this thesis indicated that tanning appearance was viewed as more attractive to young people and confirmed that appearance motivations relating to attractiveness increased young people's positive attitudes towards sunbed use. Moreover, young people expressed that improving self-esteem appeared to be the main motive in respect of how their appearance was perceived by peers. Participants were quick to dismiss the notion that they wanted to be attractive for others and they were more likely to articulate that appearance related benefits were internalised. Therefore, for 14 to 16 year olds obtaining a tan to look attractive improved their perception of their body image, which in turn boosted self-

esteem, and self-confidence. There are important considerations that may affect young people's psychological wellbeing as a consequence of legislative changes banning sunbed use for minors. Young people were found to be reliant on a tanned look. Concealing paleness by applying make-up for the smallest of trips to the shops for example, highlighted how important it was for young girls in particular, to be perceived by others not to appear pale. The application of fake tan is an option but this is much more expensive than a sunbed session. Participants said that they disliked fake tan but would apply it as a last resort. Preventing sunbed use through legislation may leave girls feeling anxious about how they will maintain a tanned appearance and this will have an effect on their self-esteem which could lead to reduced confidence and social isolation.

Whilst young people tended to dislike fake tan they would consider using it as an alternative to sunbed use if it was cheaper and easier to apply. This therefore requires health promotion teams to target a safer alternative such as the use of fake tan. There are now cheaper fake tan brands which could be promoted and demonstrations on how to apply the product would help to eliminate the cosmetic dissatisfaction of streaks. This does however present a dilemma to health promoters as supporting fake tan application as a strategy to reduce sunbed use does not reduce the overall perception that a tanned look is a healthy look or that it is accepted by society. In some ways promoting fake tan products is further reinforcing the notion that a tanned appearance is acceptable and normal. It may be deemed appropriate for health promoters to concede that a realistic outcome would be to tackle dangerous exposure to UV rays by promoting a safer alternative to having a tanned look through fake tan application. Changing society's attitudes towards a tan as a healthy look will be a far greater challenge.

Another finding from the thesis studies was that young girls felt pressure to conform to social norms around appearance depicted in the media and the modelling and fashion industry. This desire to conform was deep rooted, more

so with regular sunbed users, but was still apparent with non-sunbed users. Fear of alienation, intimidation and marginalisation by peers was a factor that prompted initiation and sustained sunbed use. Positive comments from peers and family members about their appearance were important for young people and this improved their self-esteem.

Several authors refer to the physical benefits of sunbeds but few discuss the social implications for young people. The following authors refer to social influences that are related to peer pressure, (De Lazovich et al., 2004a; Calder and Aitken, 2008; Cokkinides et al., 2009). In the current research most young people had a specific desire and ritual to socialise when using sunbeds. It was a chance for them to meet, off the streets and feel more mature receiving what they describe as 'pampering'. This finding has not been presented previously in the literature for 14 to 16 year olds. Girls said that they often used sunbeds because they were asked to go on them and not necessarily because they wanted to use them. The most extreme sunbed users were frequent sunbed users, they were more likely to lack confidence if they did not have a tan and felt most dissatisfied with their appearance. They were also more likely to look up to celebrities who were models and who had extreme tans and cosmetic surgery. This view was not shared by most of the moderate sunbed users and non-sunbed users, who classified extreme tanning and cosmetic surgery as unacceptable using descriptions such as "bimbo" and "Barbie doll" as a way of describing their distain of this particular look. A key finding was that a natural look was preferred by most young people than to stand out in the crowd being too pale or too dark. To some extent young people may have wanted to blend into the masses rather than exhibiting the sensation-seeking behavioural traits that the most frequent sunbed users displayed.

From the thesis studies, there was an indication that boys' attitudes towards sunbeds may have altered in the last few years in that they viewed sunbeds much more negatively than previously reported, however, the sample was small

so caution with the interpretation of these results should be considered. Thompson et al. (2010) identified high sunbed use in a prevalence study in six cities. In Liverpool they reported that around twenty percent of boys had used a sunbed. The findings from the current research have suggested a shift in attitudes of boys in the last few years, with them now viewing use of sunbeds negatively. This change in attitude was highlighted during the recruitment of participants in the research. It was very difficult to recruit boys to participate in the research in schools. There were also very strong negative views expressed by some boys in the study about the use of sunbeds by both girls and boys. This was expressed in focus group sessions. This is an important finding because it may indicate a change of attitude, which may lead to fewer boys accessing sunbed salons, which would reduce exposure to UV skin damage. This may warrant further research.

The research highlighted that both mothers and older sisters heavily influenced young people's sunbed initiation and sunbed use in the 14 to 16 year olds. This was through direct or indirect influences. Older sisters encouraged first time use of sunbeds and mothers would fund sunbed sessions, attend sunbed sessions with their daughters, provide arms-length support or turn a 'blind eye' to their daughter or son's use of sunbeds. There has been little research in this area for 14-16 year olds and maternal influences. Cokkinides et al. (2002), in a US study of 11-18 year olds found that sunbed prevalence was higher in older girls whose parents used sunbeds, but made little reference to the influences of parents. Baker et al. (2013), also demonstrated that mothers who tanned indoors were more likely to influence their daughter's first indoor tanning experience. The results of the thesis study indicated a positive relationship between maternal accompaniment and later frequent indoor tanning among young women. In her PhD thesis in the US, Baker (2012) examined the effectiveness of interventions to prevent indoor tanning with mothers and young people. Forty two mother and daughter dyads were recruited over the telephone and were randomly assigned to an intervention or control group. Baseline surveys were conducted and a

handbook provided information about sunbed risks along with a useful guide for the best way for mothers to tackle some of the issues faced by their daughters. The key findings of Baker's study were that permissiveness was proven to be one of the strongest predictors of indoor tanning behaviour and that intervention with mothers using educational handbooks that provided guidance on sunbed use as well as engagement strategies, would be effective in promoting discussions between young people and their mothers. Despite efforts, the author was not able to provide statistically significant differences and posits that this occurred because of a reduced sample size.

Stryker et al. (2004), in a US telephone survey involving 1,284 young people aged 14-17 years of age and matched female caregiver found that female caregivers provided a gatekeeper role, that permissiveness was a key influence especially with female caregivers who used sunbeds themselves and, finally, that young people were modelling their behaviour on their female caregiver's behaviour. The literature suggests that parental modelling of a permissive attitudes is one of the strongest predictors of adolescent indoor tanning (Coups and Philips, 2011; Holman and Watson, 2013; Coups and Philips, 2012). This would suggest that education with parents might be an effective strategy in order to bring about a change in behaviour. There is an increased opportunity to target health promotion messages towards mothers.

The findings from the current research add to this work in that mothers directly and indirectly influenced their sons or daughters use of sunbeds. Mothers generally avoided attending sunbed sessions with their sons and daughters and most were likely to disapprove of their child using sunbeds at all. However, they were also more likely to indirectly support the sustainability of this behaviour because they provided direct funding for their son or daughter. Young people viewed this as permission to use sunbeds. Some mothers would also avoid attending sunbed sessions with their daughter or son because they did not want to be seen to endorse their child's sunbed use. This would indicate that they

were aware that sunbeds were a health risk. One of the key findings was that initiation to the first sunbed session was more likely to be influenced by attendance with an older sister or a close friend rather than with a mother, although some young sunbed users did, however, attend with their mothers on a regular basis. The more frequent sunbed users were more likely to attend ongoing sun bed sessions with their mothers. These findings are relevant in the field because it demonstrates how there needs to be greater emphasis placed upon targeting and supporting mothers to support the decisions that young people make about their own health, as well as raising awareness about how their own behaviours impact on their children.

Young people would strategize in order to obtain funds, either by 'playing the guilt card with their mother' especially if they were also a sunbed user or by duping their fathers to provide money. This latter strategy was often skilfully executed, without fathers knowing, and involved requests for money for school trips, to fund 'private things' that only girls talk about and for school lunches. Fathers were unlikely to challenge what the money was used for. Young people were able to creatively adapt and strategise in order to obtain their behavioural goals. This is an important finding as it cannot be assumed that legislation would prevent minors to use sunbeds, given that young people described how they would find a way to do so. This has the potential to lead to more hazardous use of sunbeds through access to hired sunbeds at home or that they would seek sunbeds in establishments that may be in a less safe environment.

During the development of the skin cancer prevention strategy emerging findings from the thesis influenced its development and there was an opportunity to further explore local insights from mothers and their daughters. Following a presentation of the data and opinions to the Health and Wellbeing board a proposal was submitted for consideration by the Director of Public Health. As a result of making a successful case, funding was granted to conduct insight work to explore maternal influences on sunbed use in Liverpool further, which

constituted a further impact of the thesis results. An emerging issue that came out of the maternal insight research commissioned within the strategy was the endorsement of sunbeds by some medical general practitioners. Evidence of such medical endorsement was also found in the thesis studies. This has implications for sunbed use as endorsement by medical professionals provides mixed messages about the risks of over exposure to sunbeds. The evidence on endorsement was presented to the lead clinician from Liverpool Clinical Commissioning Group and a priority concerning discouraging endorsement was incorporated into the skin cancer prevention strategy (2013/15). The lead clinician agreed to work with GP colleagues to ensure that clinicians do not endorse sunbed use.

The thesis studies highlighted that young people were at considerable risk to over exposure to sunbeds due to poor advice and supervision. The wearing of protective goggles was not endorsed and the availability of protective eyewear was sporadic across salons. Inadequate assessment of skin types and no advice about how long and how often sunbeds could be used was offered to clients. Young people were aware of some of the dangers of sunbeds but cognitive dissonance and disassociation with risks provided a way of distancing themselves and ignoring these risks. Poor practice within sunbed salon has been presented by several authors (Mackay et al., 2007; Rhinds et al., 2009; Schneider et al., 2009; Cloke et al., 2010; Schneider et al., 2012; Tierney et al., 2012). These studies highlighted poor supervision, a lack of information, and inadequate use of safety goggles and a lack of advice by salon assistants. The thesis research adds to the evidence that poor salon practice was being experienced by young people. Salon assistants rarely checked ages of sunbed users and would not be likely to offer any written information.

Another key finding was that young people would develop strategies to ensure they accessed sunbed salons or sunbeds and said they would do so even following a ban on sunbed use by minors. One such strategy would be to avoid

older salon assistants because they were more likely to challenge their age. Other strategies include forging signatures or asking their mothers to contact the salon if they were challenged about their age. This research highlighted how young people used sunbeds frequently and hazardously, with some girls using sunbeds in excess of eight times the adult recommended limit and for durations ranging from 3 minutes up to 21 minutes at a time or until they feel that they are burning. In addition to excessive use of sunbeds, a recent study in the literature emphasised the disparities between emissions from sunbed machines, with sunbeds emitting up to six times that of the Mediterranean sun (Tierney et al., 2012). This evidence about excessive use is important for lobbyists and policy makers within health departments. There is considerable risk of harm to young people who are over exposed to carcinogenic artificial UV rays. Despite new legislation young people say that they will continue to use sunbeds, therefore, more stringent regulations and more rigorous monitoring of machine specifications as well advice to user's regarding the dangers of overexposure should be improved.

The thesis findings indicated that young people were aware of most of the dangers of sunbed use as previously highlighted by (Montfrecola et al., 2000; Lake et al., 2013). Cancer was the most well known risk attributed to sunbed use by young people. This has been acknowledged by previous authors who suggest that this would have little effect upon behaviour change (Broadstock et al., 1992); Beasley and Kittel, 1997; Geller et al., 2006). The thesis research highlighted that young people rationalised a low risk of them developing cancer because of two factors: firstly, that stories of people they know their age having developed cancer was non-existent or rare; and secondly, that they had been allowed to use sunbeds without intervention from the government so they believed that the risk must have been low.

One of the thesis findings was also highlighted in the Lake et al. (2013) CRUK study, and relates to young people attempting to play down or ignoring the risk

factors such as cancer, however, little empirical evidence to date has been presented. Cognitive dissonance and disassociation with the risk factors and sunbed use was very prominent in this current research study. Young people were quick to provide alternative positive benefits of sunbed use and not focus on potential hazards. This is important because the nature of cognitive dissonance is such that individuals concerned can deflect the reality from being considered. A potential effect of conscious reflection by participants who stopped using sunbeds following focus group discussions may give rise to more thoughts about the consequences of sunbed exposure. This, therefore, provides a potential area to explore the use of effective strategies to alter risk taking behaviours such as those proposed by Baker (2012).

The thesis findings highlighted that some young people aged 14-16 felt that they were addicted to sunbeds. They said that they would be unable to stop using them and they were very worried and fearful that a ban on under-18 sunbed use would come into effect. This research is the only in-depth qualitative study that provides emerging evidence of potential sunbed addiction in 14 to 16 year old girls and boys, although it must be recognised that the sample is too small to draw definitive conclusions. The findings emphasised how low mood, depression, poorer self-esteem and reduced confidence in some of those interviewed affected them. They also acknowledged their fears about the physical effects of stopping, worrying that they might have withdrawal symptoms.

There has been some speculation for years regarding the potential addictive nature of sunbeds Wartham et al. (2005), proposed a theoretical framework for addiction to sunbathing, as well as two scales (m CAGE and m DSM IV) for diagnosis and to assess the degree of addiction. These diagnostic criteria describe the feeling of losing control, craving, or the continuation of the behaviour despite knowledge of the negative consequences. Wartham's study however, involved only adults, so did not report on younger people's potential

addiction. Poorsatter and Hornung (2007) also used a modified CAGE questionnaire in a US study that demonstrated a positive relationship between substance related disorder and UV light but again this did not involve younger people. Zeller et al. (2006), in a US telephone questionnaire highlighted that it may have been difficult for 14 to 17 year olds to quit using a sunbed and suggested addictive tendencies to those initiating sunbeds at a younger age. The present research adds to Zeller's findings in which young people believe that they are addicted to sunbeds.

Similarities between tanning dependence and substance abuse have also been identified by some authors, who found that young people using two or three substances were more likely to be indoor tanners. (Demko et al., 2003; Lazovich et al., 2004a; Boldeman et al., 1997 and Boldeman et al., 2003). Thomson et al. (2010), in the CRUK COMARE study also reported a tenuous link with addiction amongst young sunbed users in England. However, these studies did not report specific detail about addictive tendencies nor did they express what it was like for young people living with addiction to sunbeds. There are no other studies to my knowledge that explore the attitudes of British young people in the age range 14-16 towards sunbeds and addiction or dependency.

The interviews in the thesis studies were completed prior to the introduction of England's legislation banning under-18 sunbed use. Young people described that they were dependent or addicted to sunbeds and participants felt strongly that it would be difficult to stop using sunbeds and they said that they would require professional psychological support. A concern was that following the introduction of the legislation banning minors using sunbeds in 2011 young people might be left feeling very vulnerable. Firstly, young people may have been less likely to seek support and help because of fear of them exposing themselves or committing an illegal act. Secondly, inadequate service provision and support for psychological therapies had not been factored into the government's plans following the introduction of the legislation. No guidance

had been issued or shared with health services because this issue had not been considered. This highlighted how important this emerging research finding is and how it could have the potential to influence both policy and service provision when further research is concluded. Policy makers would have to consider significant changes and interventions with health experts as addiction to sunbeds may be very difficult to treat. For some addictive behaviour there are therapeutic adjuvants and alternatives such as drugs or reducing drug substitute regimes especially for drug misuse, alcohol and tobacco addiction. However, it would seem implausible to apply a therapeutic regime to reduce the duration and frequency of young people's exposure to artificial UV in a controlled way. This could be difficult because of a lack of knowledge in this area and the difficulty that such an intervention might be viewed as illegal under the current legislation and therefore impractical.

During the implementation of the skin prevention strategy evidence was drawn from the thesis study research findings to influence the development of local support pathways for young people who show signs of dependency or addiction to sunbeds. This is being pursued by stakeholders in Liverpool. One approach that policy makers could promote is a specific focus on supportive therapies, through the Improving Access to Psychological Therapies Service (IAPT). Another would be to provide awareness and education for school nurses, GP and practice nurses and University student psychological support workers.

8.3 Implications for policy and practice

The research generated several implications for policy and practice which were derived from the current research findings and the development of a local skin cancer prevention strategy. These will influence current policy as a result of this postgraduate study. Following the integration of public health within local authorities, new collaborative opportunities have enabled a comprehensive and inclusive skin cancer prevention strategy to be implemented across the city of Liverpool. The development of this strategy, which I led, informed by my Thesis

findings, is presented in Appendix 10. Many organisations and departments have taken key roles in delivering the strategic actions. The City Council has taken an active role in lobbying for tighter local regulatory powers that will enable environmental health officers to actively ensure adherence to legislation. Moreover, the process of developing the strategy had wider implications for national policy, in that CRUK and the Chartered Institute of Environmental Health have endorsed the approach. Liverpool City Council is engaged in discussions with the government, lobbying for changes to local regulations. Changes that are proposed include ensuring that the hire and sale of sunbeds to under-18s is prohibited.

My research identified that young people said that they would attempt to use sunbeds at home or some would ask their mothers to buy or hire one for home use. This has the potential for even greater UV exposure as access issues are less likely to be problematic. The current legislation falls short of banning the hire of sunbeds or banning them at home for use by under-18s and currently only prohibits sunbed use by under-18s on commercial premises.

Another proposed addition to local regulation is that all sunbed operators should be fully trained and that sunbeds are supervised and that user's skin type is assessed by qualified operators before sunbeds are used. Young people have been able to access sunbeds as many times as they liked and for as long as they liked with little or poor advice and guidance from salon staff. A lack of information and national safety advice and evidence relating to the risks of artificial UV has also been deficient and this lack of information has been highlighted in the current research. The City Council will be supporting regulations that ensure that all establishments display and provide prescribed health information to all sunbed users and that it is compulsory for protective eyewear to be provided, they will also be lobbying for regulations that ensures that the skin type of any user is assessed and those who have the least protective skin type 1 or 2 should be refused access to a sunbed because they

are at a higher risk of developing skin cancer. Limited use of protective goggles was another finding, this has been supported in the literature and lobbying for compulsory use of protective eyewear has been requested by the City Council.

Following the introduction of the sunbed legislation banning under-18s from using sunbeds it could be argued that this is likely to deter young people from using sunbeds. This may well be the case for some, but young people in my study said that they would be able to get around the system either by testing out which salons would 'turn a blind eye' or by choosing a salon that was operated by someone they knew. The current legislation does little to promote regulations that enforce the law. Limited resources and competing priorities mean that environmental health officers have little guidance mandated in order to ascertain those salons breaching the law. The current research highlighted through the development of the strategy that test purchasing should be carried out by enforcement officers that ensures that young people are not accessing sunbeds on commercial premises.

Another finding from my research that has practice and policy implications is the reported role of mothers and older sisters who directly and indirectly influence or contribute to young people initiating or continuing to use sunbeds. There has been emerging evidence that mothers who communicate closely with their daughters around sunbed use are likely to have an effect on limiting sunbed use. Policy makers should seek to engage mothers with their daughters in order to support initiatives that reduce and prevent sunbed use.

Several psychological effects have been identified with sunbed use such as, seasonal affective disorder, body dysmorphic disorder, dependency and addiction. Whilst evidence is by no way conclusive within this current research, data suggested that some young people described that they felt that they were addicted or highly dependent on sunbeds with difficulty being able to stop sunbed use. Although caution need to be considered, requests for psychological

support was also highlighted which was either sensation seeking by the part of the participant or genuine need. If young people are indeed developing addictive tendencies there is currently little provision for accessing psychological support therapies within primary care. This will have potential implications for policy and practice. Support pathways would need to be commissioned or enhanced and services would need to be developed to deliver psychological support and treatment such as cognitive therapies.

More effective awareness campaigns and prevention initiatives will also need to be developed and implemented by Health and Wellbeing Boards and Clinical Commissioning Groups and other organisations like charities to contribute to the reduction in the rise of skin cancer incidence and sunbed use. In order to reduce the skin cancer incidence rate, people's attitudes and risk taking behaviour will need to alter to limit over exposure to damaging UV rays. The cumulative effect of UV damage may take years to develop which may result increased incidence over time (Andreassi, 2011; Situm et al., 2010; Radespiel-Tröger et al., 2009). Skin cancer is largely a condition of older people mainly due to this cumulative damage to the skin, which may take twenty to thirty years before a cancer develops. It would be beneficial to target preventative strategies aimed at younger people particularly before they reach adulthood. Some studies report that approximately 25-50 percent of a person's lifetime exposure to the sun occurs in people under-21 years of age (Godar et al., 2003; Godar, 2005 and, Savona et al., 2005). This supports the idea that modification and limited exposure at an earlier age may have two potential benefits. Firstly a reduction in over-exposure in the early years when exposure is at its highest and secondly that modifying behaviours learned in a child's formative years are less resistant to change as young people move into adulthood (Cody and Lee, 1990; Loescher et al., 1995). Young people's risky behaviour in the context of sunbed use should be better understood and we will need to learn a great deal more about which interventions are more effective in reducing sunbed use and what prevention activity may prevent younger people starting to use them in the first

place. Therefore greater emphasis targeted towards younger people should be developed nationally and locally delivered.

It is very important for awareness and health promotion interventions to be targeted and delivered effectively. An important time for health promotion is during adolescence (Viner et al., 2012). Health promotion programmes should be sensitive to age, gender and socio-economic differences in adolescents' development. They should address not only health and health behaviour outcomes, but also the social context in which young people live. The health related behaviours and lifestyles adapted by the adolescents are strongly affected by social factors at individual, school, family, community and national level (Laaksonen et al., 2012). Programmes for promoting health that are aimed towards young people need to be targeted and must be 'culturally competent', where culture is not just defined by ethnicity but also considers the geography, the local community, and other factors such as age and gender (Bungay and Vella-Burrows, 2013). In order to be effective, health promotion needs to resonate better with young people and their lived experiences. This may actually challenge the dominant perspectives on health which often fosters negative problem-based approaches. Young people value a more positive approach taking into account positive aspects of their lives (Morgan and Ziglio, 2007). This was highlighted in my study, in which young people using sunbeds discussed how they were weary of constantly being told what to do all the time and they wanted to be more empowered to make their own choices and to indeed make their own mistakes. Spencer(2014) suggests that focussing on the positive aspects has the potential to focus more on the transformational forms of empowerment rather than individualised risk reduction which young people view as disempowering.

Peer relationships have been shown to be highly influential in changing attitudes and behaviour, but the evidence of effectiveness of interventions specifically designed to be delivered via peers is mixed. Harden and colleagues (1999)

reviewed the effectiveness of peer delivered health promotion which has become increasingly fashionable and has been based upon the premise that peers are more likely to connect with each other and are more credible sources of information. The review concluded that the evidence for effectiveness was weak. Within my study, young people asserted that they were distrustful and sceptical of more paternalistic forms of health promotion from government agencies and nationally, and were more likely to connect better with someone that they could relate to. With this in mind, we could speculate that a more subtle form of peer intervention may have more impact and is worth further consideration. Young people in my thesis study, for example, described wanting to feel empowered, having discussions with each other in group situations and considering the options and making personal choices about risk taking. This could form the basis of an approach that could be evaluated further.

Observed gender differences need to be considered when delivering health promotion and attempting to alter health behaviour. Gender specific mechanisms to deliver and communicate health messages may be required. As we have discussed in the current research, girls' self-esteem is strongly associated with their body image and appearance. This might, therefore, require a stronger emphasis being placed upon strengthening girls' self-esteem and reducing or preventing the development of negative ideas about their bodies.

These negative thoughts may have been developed and moderated by media portrayal of the social ideal and therefore the media plays an important role in influencing behaviour and attitudes towards risks. Social media for example, has the potential to facilitate both positive and negative effects. The positive effects have been reported such as developing and refining self-control, tolerance, respect for others and thinking critically (Berson et al., 2002). Negative effects have also been reported such as, cyber bullying, sexual predators, promotion and exploitation of unhealthy lifestyles and risk taking (Pujazon-Zazik & Park 2010). Mass media interventions and health prevention

campaigns in smoking have been shown to have little effect in a systematic review of the literature, (Brin et al., 2010) and neither have they been shown to be affective with young people (Flynn et al., 2010). Devlin et al, (2007) suggested that no single message is likely to appeal to everyone but that messages should be mediated by the values that young people attach to the behaviour such as fear, or social norms. In relation to sunbed use, therefore, a multi-faceted approach to health promotion may prove to be more effective. There is sufficient evidence within the literature that suggests a multi-pronged, multi-faceted approach to health promotion is more effective, rather than single interventions, (Wensing et al, 2000; Weare and Nind, 2011; Llopis and Barry, 2005). If we are really to improve the health outcomes we need to work with young people in partnership and listen to their values and needs. Only then can we really engage in understanding the complex differences that are required.

8.4. Strengths and limitations of methods

Choosing research methods was a key consideration, as these needed to be appropriate so as to compliment the methodological stance of phenomenology in order to reveal the rich data offered by the young people in this current study. The research explored a broad range of interconnected processes and causes and was not attempting to test a hypothesis but instead engaged in a more dialectic process between the data observed, policy and the questions asked when pursuing the everyday understanding and realities of the social phenomenon of sunbed use.

Literature in the field is very sparse in respect of qualitative approaches for young people and sunbed use. There have been very little qualitative research involving adolescents in this field and no studies that could be identified that presented empirical data in-depth for 14-16 year olds. Most of the studies involving young people under-17 years were based on quantitative questionnaires (Boldeman et al., 1997; Robinson et al., 1997; Brandberg et al., 1998; Boldeman et al., 2001; Cokkinides et al., 2002; Geller et al., 2002; Demko

et al., 2003; Boldeman et al., 2003; Lazovich et al., 2004a; Stryker et al., 2004; Hamlet and Kennedy, 2004; Zeller et al., 2006; Hoerster et al., 2007; Mackay et al., 2007; Cokkinides et al., 2009; Baker, 2010; Thompson et al., 2010; Schneider et al., 2012). A study by Thompson et al. (2010), involved 3101 young people under-18s in two surveys across six cities in England. The benefits of this study were that a large number of participants were involved in completing questionnaires and providing overall prevalence of sunbed use across six cities. Although the study refers to reasons for using sunbeds, knowledge about sunbed risk and young people's experience of using sunbeds in salons, there was insufficient depth to explore what influenced their opinions, how they responded to peer-influence and maternal influences and how they may have mitigated against access to sunbeds. This CRUK study was a precursor to a further study utilising focus group discussions with two focus groups in each of six cities (Lake et al., 2013). The age of participants was 15-17 years of age; however, there were only six 15 year olds who were involved in the sample. A total of 69 girls participated in the research, but no boys. A limitation of CRUK's study is that they utilised a convenience sampling approach which may have been highly unrepresentative, there were two erroneous inclusions of adults aged 18 which may have introduced bias into the groups.

The current thesis research explored the lived experiences of younger participants aged 14 to 16 and presented views from a range of ages, backgrounds and included both girls and boys. One limitation was the difficulty of identifying participant characteristics effectively. For example, there is anecdotal evidence that young people from different ethnic backgrounds including those with black skin having used a sunbed. I did not set up the focus groups or one to one interviews to record various ethnic classifications, and relying on my on assessment of participants skin colour/implied ethnicity would not have been appropriate. Assumptions were also made regarding the socio economic status of the participants. This was based upon the location of the school and the likelihood that those attending the school if it was in an area of

high deprivation would also be from a more deprived community. This may have been erroneous in some cases.

One of the key methods used in this research was focus groups. Young people actively and enthusiastically engaged in the focus groups. They expressed a desire to have more focus group-style sessions in schools, rather than traditional approaches to discussing health behaviour topics, which largely included techniques such as lectures and power-point presentations. Young people discussed how sunbeds made them feel and they challenged each other's points of view, sometimes modifying them and reasoning with each other. A surprising finding within the research was that three young people had altered their sunbed behaviour following the focus group discussions and had stopped using sunbeds. This information materialised following further participation in the one-to-one in-depth research by some of the participants who had participated in the focus group discussions. However we should be cautious of drawing definitive conclusions about this because numbers were very small. The three participants in the one-to-one in-depth interviews explained how they had had the chance to reflect on the risks to their own health and 'time out' to consider the impacts of sunbed use on their own health. The focus groups appeared to have enabled a safe and structured opportunity to explore the views of peers as a result of which they made their own decision to stop using sunbeds. The use of focus groups and in-depth interviews in combination was not designed to identify contradictions in the accounts of participants, as each method was used to elicit different kinds of information. This finding was unexpected, but nevertheless may provide a potential future area of research by examining the effect of focus group interventions as a strategy to reduce or stop certain risk taking behaviours. It was difficult to ascertain the reason for a change in reported behaviours amongst these individuals. Although the numbers of young people stopping using sunbeds following focus group sessions were small this may warrant further research exploration. Lambert and Loiselle (2008) and Sands and Roer-Strier (2006) used a combination of focus

groups and in-depth interviews and reported differences in accounts of participants. They categorised these accounts as same story same meanings, same story different interpretations, missing pieces, unique information and illuminating (different but not contradictory). The current research adds a sixth category in that same story, contradictory account, for example where girls said they did not use sunbeds to impress boys in focus groups, but then articulated that it was to impress boys in in-depth interviews. The aim of using both focus groups and in-depth interviews in the present study was for reasons of data triangulation, but rather to gain broader accounts of the phenomenon and individual accounts of using sunbeds. Although the numbers young people contradicting their accounts in the focus group versus the in-depth interviews was small, it nevertheless highlights difference in how methods can elicit different data.

The research methods chosen enabled young people to express their views in-depth and within group environments with peers. The question of whether focus groups were going to be too superficial was considered, but they offered the opportunity to consider broader themes, group dynamics and interactions. Focus groups provided sufficient data to allow thematic elements but also encouraged views and attitudes that may not have been discussed with one to one interviews, as young people presented their rationale for using sunbeds and justification for using them. Interactions were observed, revealing how young people sometimes contradicted themselves during follow up one to one interviews. This highlighted how young people may have been influenced by peers during the focus groups.

Some young people reported that peer pressure was a key factor that influenced why they started to use sunbeds and this was disclosed during the focus groups. Peers who influenced their sunbed initiation were likely to have been present during the focus group which could have created a bias in relation to the true opinions of young people in the focus groups and this was considered. It was

felt that the adjuvant of one-to-one in-depth interviews would allow for further deeper probing and triangulation with what young people in focus groups said differently or acted differently if they also participated in both methods. This bias was a concern when I was planning my approach and hence the reason to include one to one interviews, whereby participants were given the time and space to express their own feelings and views without the presence of their peers. A potential limitation here is that we need to recognise that focus groups and one to one interviews generate different data in different ways and will be influenced and affected by the presence of other participants, the environment and previous interactions.

There were difficulties in the design of the research approach. The school environment is a busy place and there were numerous interruptions during the focus group sessions. Students joined the sessions late, alarm bells went off during discussions, teachers interrupted the focus group to take pupils away and school tannoy systems frequently went off. This occasionally disrupted the flow of discussions within the focus groups. In hindsight holding the focus group sessions after school would have been more effective because there would have been fewer interruptions and less noise, but a balance had to be made. Young people said that they would not have liked to take part in focus group research outside of school hours and therefore, the right decision was probably made as attendance may have been more difficult if after school research was conducted. There was an opportunity to consider other environments in which to conduct the research for example, youth clubs and dance groups. The school environment may have stifled participant responses because of the perception of participants that schools provide authority.

A potential weakness was that few boys were recruited to the in-depth interviews. This made it difficult to draw any firm conclusions from the data on so few boys and any emerging findings should be treated with some caution. The lack of boys coming forward during recruitment was a particular challenge

and there appeared to be a change from earlier focus groups that were conducted in school sessions in Liverpool schools five years previously. Boys' lack of willingness to participate in both focus groups and one to one interviews may have reflected a change in boys' negative attitudes towards sunbeds as reported in my findings.

8.5. Personal reflections

Reflexivity is a critical aspect within the field of qualitative research and has been described in the literature as a process of critically reflecting on oneself and analysing and noting personal values that may affect the data collection, analysis and interpretation (Polit and Beck, 2010). Reflexivity is paramount in different types of qualitative research such as participatory action research (Robertson 2000) and within hermeneutics approaches (Koch and Harrington 1998). Gouldner (1971) posited that reflexivity is an analytical view of the researcher's role within qualitative research. Koch and Harrington (1998) described how the reflexive process should involve a critical iterative process of self-appraisal and self-critique and consideration how the researcher might have influenced the research at all stages. Within my research I utilised a reflexive approach in order to maintain awareness of potential bias.

My previous work meant that I had worked in the field of cancer early detection and prevention for many years and as a nurse clinician within oncology, specialist palliative care and community nursing. There was therefore, the potential risk that my work-related involvement in sunbeds and skin cancer may have created bias within my choice of methods, my analysis and interpretation of the data. I had been involved in work on sunbeds from 2005 when I began to have concerns about the numbers of young people using sunbeds, often in a hazardous way. The Chartered Institute of Environmental Health had also raised this issue at their national conference in Cardiff in 2005. For the next two years, my role as a cancer manager enabled me to challenge sunbed policy and I raised my concerns to the national cancer policy team and CRUK, who at the

time were also having concerns about the growing body of anecdotal evidence about high use of sunbeds amongst young people. In the December 2007 the cancer policy team included in the Cancer Reform Strategy (DH, 2007) a section that aimed to explore this issue. This led to CRUK and Thompson et al. (2010), conducting qualitative research on the prevalence of sunbed use amongst minors. In carrying out this PhD research, I had to accept that I had a passion for skin cancer prevention, but I also had to strike a balance in order to provide as unbiased as possible piece of research.

One of the important issues that I needed to be clear about was my stance regarding the potential impact of my ethical and political position as well as my previous knowledge and experience. My work experience has meant that I have been heavily influenced by the medical model, and my nurse training shaped many of my views and attitudes about what I believe is ethically or morally acceptable. I needed to be conscious of these influences. One approach that researchers within phenomenology take is referred to as (bracketing). Carpenter (2007) described bracketing as a methodological device of phenomenological inquiry that requires deliberately setting aside one's own beliefs about the phenomenon under investigation or what one already knows about the subject prior to and throughout the phenomenological investigation. In other words, bracketing involves the researcher detaching all previous knowledge from the interview process in order to reduce their own bias when conducting the research. I support the principle of bracketing because the researcher can consciously consider their potential influences on the research and attempt to remain neutral within the research process. The first example of how I attempted to bracket in my research was by using a reflective diary, this enabled me to log my preconceptions prior to the research. Another approach that supported this concept was having fellow researchers to facilitate the focus groups. However, whilst I support the notion of bracketing I do not believe that it can be fully achieved. It is difficult to dismiss prior values and experiences, and these are only really suspended for a period of time and are likely to resurface

during analysis and interpretation. I believe being conscious of my values, beliefs and prior knowledge only partially reduces researcher bias and that my values and assumptions are not bracketed but are part of the interpretive process. My journey within this research, I believe, became more neutral during the data collection stage. It was young people's stories and views that were to balance my perspective in this area as I revisited my preconceived medical position, and I became more conscious of the social and cultural influences they experienced. This process of reflexivity was therefore, iterative.

There were several ways that I was able to reflect upon my approach, the methods of data collection, data analysis and the interpretation of the data. Firstly my supervisors were able to critically ground me by challenging the assumptions that I had made; this was achieved through regular contact and critique of my emerging data, research approach and interpretation. Secondly, two colleagues who were supporting the focus groups also provided objectivity as critical friends. It could be argued that one of my fellow research associates may have also introduced bias into the analysis because she too had also been involved in earlier work around sunbeds and health promotion. However, we were all mindful of the need to be true to the research and to attempt to be as open and transparent as possible. The third and most influential influence on my ability to reflect upon my role, assumptions and biases was the research process itself, particularly in relation to the interaction within interviews with young people. I was originally fixed in the pursuit of supporting the sunbed ban for minors and that sunbeds were only bad for young people. It was the participants who were to challenge my position and assumptions and instead I began to understand the social and cultural implications of what it was like for young people using sunbeds and how it felt for them and what it meant to them. I also considered the importance of inter-subjectivity, in that the research participants may have also been influenced or may have experienced a change in their views through their own reflections based upon their interaction with their peers and with me as the researcher. Inter-subjectivity can therefore, affect the

participants' experience and we need to be mindful of this (Brown, 2011, p. 9). These considerations have moved me towards a more of a balanced perspective from a position that was fixed, to a more flexible one, accepting that sunbeds were for some users an important part of their lives.

My views have not changed in respect of my support for a ban on sunbeds for young people and how legislation can be an effective way of reducing sunbed use, however, my openness to the benefits to young sunbed users and how this is an important part of some of their lives has changed. It was very clear from the research that sunbeds are integral to some young people's lives, their social identity, their body image and the impact upon their self-esteem and autonomy. The research thesis has been a very challenging and exciting process. I have changed as a researcher and as a health professional and feel that I now have a more balanced view in respect of sunbed benefits and risks that affect young people. Some very important findings will help to shape future policy and research in this field.

8.6. Implications for further research

A cautionary note has been highlighted with the emerging finding that the attitudes of boys towards sunbed use might be changing. This could provide an opportunity for further research into boys' perception of sunbed use. It would be very interesting to understand what factors contributed to a change in attitude and practice and what the key influences in that change were. For those continuing to use sunbeds, it would also be important to understand the factors that influence continued sunbed use despite possible changes in perception of their peers.

Following the introduction of legislation banning under-18 sunbed use there could be the opportunity for the CRUK COMARE study to be repeated in the same six cities to ascertain any Impact in prevalence following the sunbed legislation. Studies to discover effects of the ban on those who used sunbeds

regularly could provide key information about areas such as access to salons, salons adherence to the law, information about awareness and risks and the use of protective eye wear.

Direct and indirect influence of mothers and older sisters materialised as a key finding from the current research. Baker, (2012) demonstrated how mothers in partnership with their daughter could utilise education and awareness materials to assist with reducing sunbed use. However, this was not tested for statistical significance which provides an opportunity for further research. Research that explores the effectiveness of health awareness interventions could be beneficial.

There have been attempts by some authors to explore addictive nature of sunbeds but this is limited in younger age groups. The emergence of addiction as a potential health and social concern makes this an important area for research. The impact of addictive tendencies can increase the risk of skin cancer due to higher exposure to UV rays, moreover, the individual's psychological morbidity will be affected particularly if legislation banning access is effectively enforced. It would be very useful to understand the extent of dependency and addiction amongst age groups and other determinants and also the prevalence as this may have implications for changes to policy, practice and access to health care. This has previously been difficult to define but potential research could build upon previous studies (Wartham et al., 2005; Poorsatter and Hornung (2007).

Another area that could be explored perhaps using a symbolic interactionism approach could be in the use of everyday language used by young people when describing sunbeds. For example young people used words to describe skin colour, words like pastey, black, brown, orange, darker, olive, red, discolouration and pale. It would be very interesting to understand how these are spoken and understood by young people in their everyday language.

The final recommendation for research is to explore the potential for research method of focus groups to bring about attitudinal or behaviour change following reflection. Although numbers were very small, a few young people said that they stopped using sunbeds following the focus groups. It would be important to understand whether this was coincidence or as an effect of discussing, reflecting, synergising their behaviour following discussion with peers.

8.7. Conclusion

Young people in this study in Liverpool reported that they were influenced by peer expectations for them to conform to social norms. This created pressure for young people both internally and externally. Internally young people described sunbeds as providing them with improved self-esteem, heightened confidence and maturity. Externally they wanted to achieve social acceptance by their peers and to some extent their mothers and siblings. Avoiding intimidation and alienation and securing social networks was a key motivation for using sunbeds.

Mothers and older sisters directly or indirectly influenced sunbed use by attending salons with their daughters/siblings. Young people reported that mothers funded sunbed sessions and mothers and sisters often initiated sunbed use. Greater emphasis should be placed upon raising awareness of the risks of sunbeds as well as emphasising parent's legal obligations as sunbed use in under-18s is now illegal. Mothers could have a key role to play in reducing or preventing sunbed use.

Young people described being addicted to sunbeds, with some saying that they would require psychological support to stop. This has implications for health services as there are currently service gaps and absence of local protocols to follow for referral to psychological services for sunbed addiction. Moreover, it may be difficult to encourage young people to seek support due to fear of being

identified as using sunbeds illegally, leaving young people potentially isolated. Policy makers will need to consider ways of bridging this gap in the future. Poor salon practice may leave sunbed users at increased risk of the dangers of over exposure to artificial UV. Inadequate training of salon staff, unsupervised salons, poor information, a lack of use of protective eyewear and the absence of sunbed user's skin assessment reported in the present research provided evidence of poor practice. The sunbed legislation in England falls short of the other constituent countries in the UK and there is a need for greater emphasis to be placed upon the regulation of the sunbed industry. This can be achieved by agreeing that the sale and hire of sunbeds to under-18s is prohibited, that all sunbed operators are fully trained, that protective eyewear is always provided, that sunbeds are supervised, that establishments display and provide prescribed health information, that skin type is assessed and that individuals deemed to be at higher risk should be refused access to sunbeds. The current research also highlighted that young people would use a number of strategies in order to gain access to sunbeds. One key danger is that sunbed use will be driven 'underground' which could mean that young people may begin to access salons that are unknown to the Local Authority and can close down and start up again frequently, or that home sunbed use increases. This highlights the need for new additions to the legislation. These additions could include a ban on home sunbed hire for use by a minor, although this would be difficult to monitor. Another addition to the legislation could be to ensure that all sunbed salons have to be fully licensed which would mean that those salons that do not have a licence could be prosecuted. At this moment in time anybody can set up a sunbed salon as long as they adhere to the health and safety requirements and the new sunbed legislation.

A lack of government advice to date and poor communication to sunbed users regarding the risks has meant that young people have been aware of some of the dangers but were unsure of the extent of the risks of over exposure to artificial UV. The thesis studies found that young people played down the risks,

possibly through cognitive dissonance and disassociation. They were quick to defer any reference to their own risks associated with sunbed use and instead they would present rationale that supported the more positive aspects, such as socialisation, confidence and improved self-esteem. Young people were worried about their mother's sunbed use or their future child's sunbed use but deflected their personal risks. They viewed their own risk as small due to not hearing any media stories about young people using sunbeds developing cancer.

A positive way to engage young people and persuade them to stop using sunbeds may be to use more personal stories from people their own age, as participants felt that it provided stronger evidence than what they perceived as traditional health promotion methods, which they described as giving leaflets. The personal connection was also evident in the impact of the qualitative research process on participants: several young people had reflected upon their behaviour and that of others during the thesis focus groups and subsequently decided to stop using sunbeds. The approach of using focus groups for health promotion could be further explored as an intervention to reduce risk behaviours in young people.

The development of a local skin cancer prevention strategy in Liverpool has been informed by the thesis research findings. The evidence that provided the rationale for developing the strategy was influenced by the literature review and the researcher's role. This thesis has also supported the development of local regulations and health prevention activity as well as informing national policy. Liverpool Health and Wellbeing Board are implementing the strategy between 2013/15. Insights of maternal influences were derived from the thesis studies and secondary research confirmed that mothers directly and indirectly influenced their daughters' sunbed use. Local stakeholders are developing psychological pathways to ensure support is available for young people who may be addicted to sunbeds. The City Council is also leading nationally on a campaign to lobby the government for tighter regulations. A full sunbed

campaign in Liverpool has been coordinated across the city supported by the Chartered Institute of Environmental Health and Cancer Research UK as well as numerous local business and stakeholders in the city.

Young people in Liverpool were using sunbeds hazardously and were exposed to an increased risk of developing skin cancer and other physical side effects. Whilst these risks would provide a strong rationale for the ban on sunbeds, young people did describe that they did benefit from sunbed use. Some of these effects were physical particularly with those who said they were addicted to sunbeds; however, most of the benefits reported were psychosocial, such as, improving self-esteem, confidence and growing up. Following the introduction of the sunbed ban for minors, little is understood about the impact this ban will have on young people who are, or perceive themselves to be, addicted. This gap in knowledge should be the subject of future research.

References

Aarestrup, C., Bonneson, C.T., Thygesen, L.C., Krarup, A.F., Waagstein, A.B., Jensen, P.D., Bentzen, J. (2014) The Effect of a School-Based Intervention on Sunbed Use in Danish Pupils at Continuation Schools: A Cluster-Randomized Controlled Trial. *Journal of Adolescent Health* 54: 214-220

Abar, B.W., Turrisi, R., Hillhouse, J., et al. (2010) Preventing skin cancer in college females: Heterogeneous effects over time. *Health Psychology*;29: 574-82.

Adam, S. A., Sheaves, J. K., & Wright, N. H. (1981) A case-control study of the possible association between oral contraceptives and malignant melanoma. *British Journal of Cancer*, 44(1): 45-50.

Adami, M.F. (2005) The use of triangulation for completeness purposes. *Nurse Researcher*, 12(4): 19–29.

Agar, M. (1986) *Speaking of Ethnography*. Qualitative Research Methods Series, no 2. Sage: London.

Ahonen, M. H., Tenkanen L, Teppo L, Hakama M, Tuohimaa P. (2000) Prostate cancer risk and re-diagnostic serum 25 hydroxyvitamin D levels (Finland). *Cancer Causes Control*, 11(9): 847–852.

Ajjawi, R., Higgs, J. (2007) Using Hermeneutic Phenomenology to Investigate How Experienced Practitioners Learn to Communicate Clinical Reasoning. *The Qualitative Report*, Vol 12 (4):612-638.

Ajzen I, Fishbein M (1980) *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.

Ajzen, I (1985) *A theory of planned behavior*. In: Kuhl J, Beckman J (eds) *Action-control: from cognition to behavior*. Springer, Heidelberg, pp 11–39.

American Society of Addiction Medicine (ASAM). (2011) *Public Policy Statement: Definition of Addiction*. Available at www.asam.org/research-treatment/definition-of-addiction.

Andreassi, L. (2011) UV exposure as a risk factor for skin cancer. *Expert Reviews Dermatology*, 6(5): 445-454.

Annells, M. (1996) Hermeneutic phenomenology: Philosophical perspectives and current use in nursing research. *Journal of Advanced Nursing*, 23: 705-713.

All Party Parliamentary Group on Cancer (APPGC). (2009) *Report of the All Party Parliamentary Group on Cancer's inquiry into inequalities in cancer*.

American Psychiatric Association Taskforce on DSM-IV. (2000) *Task force on DSM-IV diagnostic and statistical manual on mental health disorders: DSM-IV-TR*.

Ames, S.L., Sussman, S., Dent, C.W. (1999) Pro-drug-use myths and competing constructs in the prediction of substance use among youth at continuation high schools: a one year prospective study. *Personality and Individual Differences*, 26(6): 987–1003.

Amir Z., Wright, A., Kernohan, E. E., & Hart, G. (2000) Attitudes, beliefs and behavior regarding the use of sunbeds amongst healthcare workers in Bradford. *European Journal Cancer Care*, 9(2):76-79.

Andersen, M.R., Leroux, B.G., Marek, P.M., Peterson, A.V., Kealey, K.A., Bricker, J., Sarason, I.G. (2002) Mothers' attitudes and concerns about their children smoking: Do they influence kids? *Preventative Medicine*, 34:198-206.

Arthey, S., Clarke, V.A. (1995) Suntanning and sun protection: a review of the psychological literature. *Social Science and Medicine*, 40: 265–274.

Armes, C.J., (2002) *Artificial Tanning Salon Behaviors, Intentions, and Attitudes in Terms of Sensuousness and Sensation Seeking*. Electronic Theses and Dissertations, Paper 701. <http://dc.etsu.edu/etd/701>

Aronson, E., Fried, C., & Stone, J. (1991) Overcoming denial and increasing the intention to use condoms through the induction of hypocrisy. *American Journal of Public Health*, 81(12): 1636–1638.

Asher, S.R., Rose, A.J., Gabriel, S.W., (2001) *Peer rejection in everyday life*. In M.R Leary (Ed). *Interpersonal rejection* (pp. 105-142). New York: Oxford University Press

Autier, P., Joarlette, M., Lejeune, F., Lienard, D., Andre, J., & Achten, G. (1991) Cutaneous malignant melanoma and exposure to sunlamps and sunbeds: A descriptive study in Belgium. *Melanoma Research*, 1(1): 69-74.

Autier, P., Dore, J. F., Lejeune, F., Koelmel, K. F., Geffeler, O., Hille, P., Cesarani, J. P., Leinard, D., Liabeuf, A., Joarlette, M. (1994) Cutaneous malignant melanoma and exposure to sunlamps or sunbeds: An EORTC multicenter case-control study in Belgium, France and germany. EORTC melanoma cooperative group. *International Journal of Cancer*, 58(6): 809-813.

Bagdasarov, Z., Banerjee, S., Greene, K., & Campo, S. (2008) Indoor tanning and problem behavior. *Journal of American College Health*, 56(5), 555-561.

Baker, A. (2002) *An adolescent cover-up story: An insight into adolescent sun protection in New Zealand*. (MPH Thesis, University of Otago, Dunedin).

Baker, M. K., Hillhouse, J. J., & Liu, X. (2010) The effect of initial indoor tanning with mother on current tanning patterns. *Archives Dermatology*, 146: 1427-1428.

Baker, M. K., Hillhouse, J., Turrisi, R., Scaglione, N., & Lawson, C. (2012) *Intergenerational tanning: Maternal influences on teens' tanning intentions and behavior*. Paper presented at the 2012 CDC National Cancer Conference, Washington, DC.

Baker, M. K. (2012) *Preventing Skin Cancer in Adolescent Girls Through Intervention with Their Mothers*. Electronic Theses and Dissertations. Paper 1163. <http://dc.etsu.edu/etd/1163>.

Banerjee, S., Campo, S., & Greene, K. (2008) Fact or wishful thinking? biased expectations in "I think I look better when I'm tanned". *American Journal of Health Behavior*, 32(3): 243-252.

Banerjee, S. C., Greene, K., Bagdasarov, Z., & Campo, S. (2009) 'My friends love to tan': Examining sensation seeking and the mediating role of association with friends who use tanning beds on tanning bed use intentions. *Health Education Research*, 24(6): 989-998.

Banks, B. A., Silverman, R. A., Schwartz, R. H., & Tunnessen Jr., W. W. (1992) Attitudes of teenagers toward sun exposure and sunscreen use. *Pediatrics*, 89(1): 40-42.

Barbour, R.S. (2001) Checklists for improving rigour in qualitative research: A case of the tail wagging the dog? *British Medical Journal*, 322(7294): 1115-1117.

Bataille, V., Winnett, A., Sasieni, P., Newton Bishop, J. A., & Cuzick, J. (2004) Exposure to the sun and sunbeds and the risk of cutaneous melanoma in the UK: A case-control study. *European Journal of Cancer*, 40(3): 429-435.

Bataille, V., de Vries, E. (2008) Melanoma—Part 1: Epidemiology, risk factors, and prevention. *British Medical Journal*, 337:a2249.

Beauchamp, T., Childress, J. (2009) *Principles of Biomedical Ethics*, 6th edn, New York/ Oxford. Oxford University Press:118.

Beasley, T. M., & Kittel, B. S. (1997) Factors that influence health risk behaviors among tanning salon patrons. *Evaluation and the Health Professions*, 20(4): 371-388.

Beck, K.H., Shattuck, T., Haynie, D.L., Crump, A.D., Simons-Morton, B.G. (1999) Associations between parent awareness, monitoring, enforcement and adolescent involvement with alcohol. *Health Education Research*;14:765-75.

Beck U. (1992) *Risk Society: Towards a New Modernity*. Sage Publications.

Beeri, A., Lev-Wiesel, R. (2012) Social rejection by peers: a risk factor for psychological distress. *Child and Adolescent Mental Health*, Vol 17(4): 216–221.

Bennett, K. (2002) *Interviews and focus groups*. In P. Shurmer-Smith (Ed.), *Doing cultural geography* (pp. 151–162). London: Sage.

Bergman, M.M., Scott, J. (2001) 'Young Adolescents' Wellbeing and Health-risk Behaviours: Gender and Socio-economic Differences', *Journal of Adolescence* 24(2): 183–97.

Bernstein, E. F., Chen, Y. Q., Kopp, J. B., Fisher, L., Brown, D. B., Hahn, P. J. (1996) Long-term sun exposure alters the collagen of the papillary dermis.

Comparison of sun-protected and photo-aged skin by northern analysis, immunohistochemical staining and confocal laser scanning microscopy. *Journal American Academic Dermatology*, 34(2 part 1):209-218.

Berson, I.R., Berson, M.J., Ferron, J.M. (2002) Emerging risk of violence in the digital age: Lessons for educators from an online study of adolescent females in the United States. *Journal of School Violence*; 1: 51-57.

Bhui, K., Stansfeld, S., Head, J., et al. (2005) Cultural identity, acculturation, and mental health among adolescents in east London's multi-ethnic. *Journal Epidemiology Community Health community*: 296–302.59:

Biddle, B.J., Bank, B.J., Marlin, M.M. (1980) Parental and peer influence on adolescents. *Social Forces*, 58:1057-79.

Biener, L., & Abrams, D.B. (1992) The contemplation ladder, validation of a measure of readiness to consider smoking cessation. *Health Psychology*, 10: 360-365.

Blackman, S. (1997) *Deconstructing a Giro': a critical and ethnographic study of the youth 'underclass'*. In: R. Macdonald, ed. *Youth, the 'underclass' and social exclusion*. London: Routledge: 113-129.

Blaxter, M. (1997) Whose fault is it? People's own conceptions of the reasons for health inequalities. *Social Science & Medicine* 44(6): 747-756.

Blumer, H. (1969) *Symbolic Interactionism; Perspective and Method*. Englewood Cliffs, NJ: Prentice-Hall

Boldeman, C., Beitner, H., Jansson, B., Nilsons, B., Ullen, H. (1996) Sunbed use in relation to phenotype, erythema, sunscreen use and skin diseases. A questionnaire survey among Swedish adolescents. *British Journal of Dermatology*, 135 (5): 712-716.

Boldeman, C., Jansson, B., Nilsson, B., & Ullen, H. (1997) Sunbed use in Swedish urban adolescents related to behavioral characteristics. *Preventive Medicine*, 26(1): 114-119.

Boldeman, C., Branstrom, R., Dal, H., Kristjanson, S., Rodvall, Y., Jansson, B., Ullen, H. (2001) Tanning habits and sunburn in a Swedish population age 13-50 years. *European Journal of Cancer*, 37: 2441-2448.

Boldeman, C., Jansson, B., Dal, H., & Ullen, H. (2003) Sunbed use among Swedish adolescents in the 1990s: A decline with an unchanged relationship to health risk behaviors. *Scandinavian Journal of Public Health*, 31(3): 233-237.

Bourdieu, P. (1992) *An Invitation to Reflexive Sociology*. Trans. Loic J.D. Wacquant. Chicago: U of Chicago P.

Bourdieu, P. (1986). *'The Forms of Capital'*. Handbook of Theory and Research for the Sociology of Capital. J. G. Richardson. New York, Greenwood Press: 241-58.

Brandberg, Y., Ullen, H., Sjoberg, L., & Holm, L. E. (1998) Sunbathing and sunbed use related to self-image in a randomized sample of Swedish adolescents. *European Journal of Cancer Prevention*, 7(4):321-329.

Branstrom, R., Ullen, H., Brandburg, Y. (2004) Attitudes, subjective norms and perception of behavioural control as predictors of sun related behaviour in Swedish adults. *Prevention Medicine*, 39(5): 992-999.

Brash, D. E., Ziegler, A., Jonason, A. S., Simon, J. A., Kunala, S., & Leffell, D. J. (1996) Sunlight and sunburn in human skin cancer: P53, apoptosis, and tumor promotion. *Journal of Investigative Dermatology Symposium Proceedings*, 1(2): 136-142.

Briggs, L. (1986) *Learning How to Ask*. Cambridge: Cambridge University Press: 56–59.

Brinn, M.P., Carson, K.V., Esterman, A.J., Chang, A.B., Smith, B.J (2010) Mass media interventions for preventing smoking in young people. 1-57.
<http://onlinelibrary.wiley.com.ezproxy.liv.ac.uk/doi/10.1002/14651858.CD001006.pub2/pdf>

British Standards Institution. BS EN 60335-2-27:2010. *Household and Similar Electrical Appliances. Safety. Particular Requirements for Appliances for Skin Exposure to Ultraviolet and Infrared Radiation*. London: BSI, 2010.

British Standards Institution. BS EN 60335-2-27:2003. *Household and Similar Electrical Appliances – Safety – Part 2-27*: London: BSI, 2003.

Broadstock, M., Borland, R., & Gason, R. (1992) Effects of suntan on judgement of healthiness and attractiveness by adolescents. *Journal of Applied Social Psychology*, 22(2):157-172.

Brown, T. A., Cash, T. F., & Mikulka, P. J. (1990) Attitudinal body-image assessment: Factor analysis of the body-self relations questionnaire. *Journal of Personality Assessment*, 55(1-2): 135-144.

Brown, S.L. (2001) Emotive health advertising and message resistance. *Australian Psychologist*, Vol 36(3):193–199.

Brown, S., Locker, E. (2009) Defensive responses to an emotive anti-alcohol message. *Psychology and Health, Vol. 24(5) 517–528.*

Brown, L. (2011) *Intersubjective processes and the unconscious: An integration of Freudian, Kleinian and Bionian perspectives.* East Sussex, UK: Routledge.

Bruls, W. A., van Weelden, H., & van der Leun, J. C. (1984) Transmission of UV-radiation through human epidermal layers as a factor influencing the minimal erythema dose. *Photochemistry and Photobiology, 39(1): 63-67.*

Bulliard, J. L., Cox, B. (2000) Cutaneous malignant melanoma in New Zealand: trends by anatomical site, 1969– 1993. *International Journal Epidemiology, 29: 416–23.*

Bulliard, J. L., Cox, B., Semenciw, R. (1999) Trends by anatomic site in the incidence of cutaneous malignant melanoma in Canada, 1969-93. *Cancer Causes Control, 10:407–16.*

Bungay, H., Vella-Burrows, T (2013) The effects of participating increative activities on the health andwell-being of children and young people: a rapid review of the literature. *Perspectives in Public Health, 133 (1): 44-52.*

Bygstad, B. & Munkvold, B. r. E. In Search of Mechanisms. *Conducting a Critical Realist Data Analysis.* ICIS . 2011. Ref Type: Conference Proceeding

Cafri, G., Thompson, J.K., Jacobsen, P.B. (2006) Appearance reasons for tanning mediate the relationship between media influence and UV exposure and sun protection. *Archives of Dermatology, 42: 1067-1069.*

- Calder, N., & Aitken, R. (2008) An exploratory study of the influences that compromise the sun protection of young adults. *International Journal of Consumer Studies*, 32(6): 579-587.
- Campos, P., Saguy, A., Ernsberger, P., Oliver, E., Gaesser, G. (2006) The epidemiology of overweight and obesity: public health crisis or moral panic? *International Journal of Epidemiology*, Vol. 35 (1):55-60.
- Cancer Research UK. *Skin cancer. UK incidence statistics*. Retrieved May, 2011, from <http://info.cancerresearchuk.org/cancerstats/types/skin/incidence/uk-skin-cancer-incidence-statistics#source6>
- Cancer Research UK (2009) Skin cancer statistics-key facts. Accessed from <http://info.cancerresearchuk.org/cancerstats/types/skin/>
- Carpenter, D. R. (2007) *Phenomenology as method*. In H. J. Streubert & D. R. Carpenter (Eds.), *Qualitative research in nursing: Advancing the humanistic imperative* (pp. 7599). Philadelphia, PA: Lippincott.
- Cash, T. F., Melnyk, S. E., & Hrabosky, J. I. (2004) The assessment of body image investment: An extensive revision of the appearance schemas inventory. *International Journal of Eating Disorders*, 35(3): 305-316.
- Castrucci B. C., Gerlach K. K., Kaufman N. J., Orleans C. T. (2002) Adolescents' acquisition of cigarettes through non-commercial sources. *Journal Adolescent Health*, 31(4): 322-6.
- Chen, Y.T., Dubrow, R., Zheng, T., Barnhill, R. L., Fine, J., & Berwick, M. (1998) Sunlamp use and the risk of cutaneous malignant melanoma: A population-based case-control study in connecticut, USA. *International Journal of Epidemiology*, 27(5): 758-765.

Chenitz, W. C. (1986). *Getting started: The proposal for a grounded theory study*. In W. C. Chenitz & J. M. Swanson (Eds.), *From practice to grounded theory* (pp. 39-47). Menlo Park, CA: Addison-Wesley

Chilban, J. (1996) *Interviewing in Depth: the Interactive-Relational Approach*. Thousand Oaks, California: Sage.

Cloke, J., Wildsmith, J., Adam-Jones, M. (2010) An investigation into ultraviolet emissions from artificial tanning equipment available in salons across South East Wales. *Journal of Environmental Health Research, Volume 10(1):45-55*.

Clough-Gorr, K. M., Titus-Ernstoff, L., Perry, A. E., Spencer, S. K., & Ernstoff, M. S. (2008) Exposure to sunlamps, tanning beds, and melanoma risk. *Cancer Causes and Control, 19(7): 659-669*.

Cohane, G. H., Pope Jr., H. G. (2001) Body image in boys: A review of the literature. *International Journal of Eating Disorders, 29(4): 373-379*.

Cody, R., Lee, C. (1990) Behaviors, beliefs, and intentions in skin cancer prevention. *Journal of Behavioral Medicine, 13(4): 373-388*.

Cokkinides, V. E., Weinstock, M. A., O'Connell, M. C., & Thun, M. J. (2002) Use of indoor tanning sunlamps by US youth, ages 11-18 years, and by their parent or guardian caregivers: Prevalence and correlates. *Pediatrics, 109(6):1124-1130*.

Cokkinides, V., Weinstock, M., Lazovich, D., Ward, E., & Thun, M. (2009) Indoor tanning use among adolescents in the US, 1998 to 2004. *Cancer, 115 (1): 190-198*.

Cole, M., Avison, D. (2007) The potential of hermeneutics in information systems research. *European Journal of Information Systems*, 16(6): 820-833.

Collins, E. (1992) *Qualitative research as an art: toward a holistic process*. Theory into practice, Taylor & Francis. Vol 31(2): 181-185.

Coory, M., Baade, P., Aitken, J., Smithers, M., McLeod, G. R., Ring, I. (2006) Trends for insitu and invasive melanoma in Queensland, Australia, 1982-2002. *Cancer Causes Control*, 17: 21–7.

Costagliola, C., Menzione, M., Chiosi, F., Romano, M.R., Corte, M.D., Rinaldi, M. (2008) Retinal phototoxicity induced by hydrochlorothiazide after exposure to a UV Tanning Device. *Photochemistry and Photobiology*, 84(5): 1294-1297.

Costello, E.J., Sung, M., Worthman, C., Angold, A. (2007) *Pubertal maturation and the development of alcohol use and abuse*. *Drug and Alcohol Dependence*, 88: 50-59.

Coups, E.J., Phillips, L.A. (2011) A more systematic review of correlates of indoor tanning. *Journal of the European Academy of Dermatology and Venereology*, Vol 25(5): 610-616.

Coups, E.J., Phillips, L.A. (2012) *Prevalence and correlates of indoor tanning*. In: Heckman CJ, Manne SL, eds *Shedding light on indoor tanning*. London: Springer: 33-68.

Crocker, J., Park, L.E. (2004) The Costly Pursuit of Self-Esteem. *Psychological Bulletin Published by American Psychological Association*. Vol. 130(3): 392-414.

Crossley, M. (2003) Formulating narrative psychology: The limitations of contemporary social constructionism. *Narrative Inquiry*, 13: 287–300.

Crotty, M. (1998) *The Foundations of Social Research*. Sage, London.

Cui, R., Widlund, H. R., Feige, E., Lin, J. Y., Wilensky, D. L., Igras, V. E., D'Orazio, J., Fung, C. Y., Schanbacher, C. F., Granter, S. R., Fisher, D. E. (2007) Central role of p53 in the suntan response and pathologic hyperpigmentation. *Cell*, 128(5): 853-864.

Danoff-Burg, S., Mosher, C.E. (2006) Predictors of tanning salon use. Behavioral alternatives for enhancing appearance, relaxing and socializing. *Journal Health Psychology*, 11: 511–520.

Dellavalle, R.P., Schilling, L.M., Chen, A.K., Hester, E.J. (2003) Teenagers in the UV tanning booth? Tax the tan [editorial]. *Archive Pediatric Adolescent Medicine*, 157(9): 845–846.

Denscombe, M. (2010) *The Good Research Guide for Small-Scale Social Research Projects* (4th ed.). Maidenhead: McGraw Hill/ OUP.

Denzin, N. K. & Lincoln, Y. S. (2011). *The SAGE Handbook of Qualitative Research*. London: SAGE.

de Vries, E., Dore, J. F., Autier, P., Eggermont, A. M. M., & Coebergh, J. W. W. (2002) Patients' perception of the cause of their melanoma differs from that of epidemiologists [3]. *British Journal of Dermatology*, 147(2): 388-389.

de Vries, H., Mudde, A., Leijts, I., Charlton, A., Vartiainen, E., Buijs, G., Clemente, M. P., Storm, H., Navarro, A. G., Nebot, M., Prins, T., & Kremers, S. (2003a) The European smoking prevention framework approach (EFSA): An example of integral prevention. *Health Education Research*, 18 (5): 611–626.

de Vries, E., Bray, F.I., Coebergh, W. W., Parkin, D. M. (2003b) Changing epidemiology of malignant cutaneous melanoma in Europe 1953– 1997: rising trends in incidence and mortality but recent stabilizations in Western Europe and decreases in Scandinavia. *International Journal Cancer*, 10 7:119–126.

de Vries, E., Coebergh, J. W. (2004) Cutaneous malignant melanoma in Europe. *European Journal Cancer*; 40: 2355-66.

de Vries, E., Boniol, M., Severi, G., Eggermont, A. M. M., Autier, P., Bataille, V., Dor'e J. F., Coebergh, J. W. W. (2005) Public awareness about risk factors could pose problems for case-control studies: The example of sunbed use and cutaneous melanoma. *European Journal of Cancer*, 41(14): 2150-2154.

Demko, C. A., Borawski, E. A., Debanne, S. M., Cooper, K. D., & Stange, K. C. (2003) Use of indoor tanning facilities by white adolescents in the United States. *Archives of Pediatrics & Adolescent Medicine*, 157(9): 854-860.

Dennis, L.K., Lowe, J.B., Snetselaar, L.G. (2009) Tanning behaviour among young frequent tanners is related to attitudes and not lack of knowledge about the dangers. *Health Education Journal*, 68(3): 232-243.

Department of Health (2004) *Every Child Matters: Change for Children in Health Services*.

Department of Health. (2007) *Cancer reform strategy*.

Department of Health. (2008) *Improving Access to Psychological Therapies Implementation Plan: National guidelines for regional delivery*.

Department of Health. (2010) *Sunbeds (Regulation) Act 2010: Guidance on the implementation of the Sunbeds (Regulation) Act 2010*, p 1-22.

Department of Health. (2011) *The NHS Outcomes Framework 2012/13*.

Department of Health. (2012) Part 1A: *A public health outcomes framework for England, 2013-2016*.

De Souza, S., Fischer, F., DeSouza, J. (2004) Suntanning and risk of cutaneous melanoma: a literature review. *Rev Saúde Pública*, 38 (4): 1-11.

Devlin, E., Eadie, D., Stead, M., Evans, K (2007) Comparative study of young people's response to anti-smoking messages. *International Journal of Advertising*, 26(1): 99–12.

Diffey, B., Farr, P. M., Ferguson, J., Gibbs, N. K., deGruuil, F. R., Hawk, J. L., Johnson, B. E., Lowe, G., Mackie, R. M., McKinley, A. F. (1990) Erratum: Tanning with ultraviolet A sunbeds. *British Medical Journal*, 301(6757): 773-774.

Diffey, B. L. (1986) Use of UV-A sunbeds for cosmetic tanning. *British Journal of Dermatology*, 115(1): 67-76.

Diffey, B. L. (2003) A quantitative estimate of melanoma mortality from ultraviolet A sunbed use in the U.K. *British Journal of Dermatology*, 149(3): 578-581.

Diffey, B.L. (2004) The future incidence of cutaneous melanoma within the U.K. *British Journal of Dermatology*. Vol 151 (4): 868-872.

Diffey, B. L. (2013) Modelling vitamin D status due to oral intake and sun exposure in an adult British population. *British Journal of Nutrition*, 110: 569-577.

Dissel, M., Rotterdam, S., Altmeyer, P., Gambichler, T. (2009) Indoor tanning in North Rhine-Westphalia Germany: a self-reported survey. *Photodermatology, Photoimmunology & Photomedicine*, 25(2):94-100.

Dillard, A.J., Ferrer, R.A., Ubel, P.A., Fagerlin, A. (2012) Risk perception measures' associations with behavior intentions, affect, and cognition following colon cancer screening messages. *Health Psychology*, 31:106-113.

Doll, R. (1990) Are we winning the fight against cancer? An epidemiological assessment. EACR-Muhlbock Memorial Lecture. *European Journal of Cancer*, 26(4): 500-508.

Douglas, M (1992) *Risk and blame: Essays in cultural theory*. London Routledge.

Downing, A., Newton-Bishop, J. A., Forman, D. (2006) Recent trends in cutaneous malignant melanoma in the Yorkshire region of England; incidence, mortality and survival in relation to stage of disease, 1993–2003. *British Journal of Cancer*, 95:91–5.

Durkin, S.J., Paxton, S.J. (2002) Predictors of vulnerability to reduced body image satisfaction and psychological wellbeing in response to exposure to idealized female media images in adolescent girls. *Journal of Psychosomatic Research*, 53(5): 995-1005.

Dykman, B.M. (1998) Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach. *Journal of Personality and Social Psychology*, 74:139–158.

Edwards, C., & Titchen, A. (2003) Research into patients' perspectives: Relevance and usefulness of phenomenological sociology. *Journal of Advanced Nursing*, 44(5): 450-460.

El Ghissassi, F., Baan, R., Straif, K., Grosse, Y., Secretan, B., Bouvard, V., Bembrahim-Tallaa, L., Guha, N., Freeman, C., Galichet, L., Cogliano, V. (2009) A review of human carcinogens-part D: Radiation. *The Lancet Oncology*, 10(8): 751-752.

Elwood, J. M., Williamson, C., & Stapleton, T. J. (1986) Malignant melanoma in relation to moles, pigmentation, and exposure to fluorescent and other lighting sources. *British Journal of Cancer*, 53: 65-74.

Elwood, J. M., & Gallagher, R. P. (2010) Reducing sunbed use in young people. *British Medical Journal, (Clinical Research Ed.)*, 340:c990.

Erdmann, F., Lortet-Tieulent, J., Schu"z, J., Zeeb, H., Greinert, R., Breitbart, E., and Bray, F.(2013) International trends in the incidence of malignant melanoma 1953–2008—are recent generations at higher or lower risk? *International Journal Cancer*, 132: 385-400.

Escobedo, L.G., Reddy, M., Durant, R.H. (1997) 'Relationship between Cigarette Smoking and Health Risk and Problem Behaviors among US Adolescents', *Archives of Pediatric Adolescent Medicine* 151(1): 66–71.

Faurschou, A., & Wulf, H. C. (2007) Ecological analysis of the relation between sunbeds and skin cancer. *Photodermatology Photoimmunology and Photomedicine*, 23(4):120-125.

Feldman, S. R., Dempsey, J. R., Grummer, S., Chen, J. G., & Fleischer, A. B. (2001) Implications of a utility model for ultraviolet exposure behavior. *Journal of the American Academy of Dermatology*, 45(5): 718-722.

Feldman, S. R., Liguori, A., Kucenic, M., Rapp, S. R., Fleischer Jr., A. B., Lang, W.(2004) Ultraviolet exposure is a reinforcing stimulus in frequent indoor tanners. *Journal of the American Academy of Dermatology*, 51(1): 45-51.

Ferlay, J., Bray, F., Pisani, P., & Parkin, D. M. (2004) *Globocan 2002: Cancer incidence, mortality and prevalence worldwide*. IARC Cancer Base No. 5, version 2.0., Lyon

Festinger, L. (1957) *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Flynn, B.S., Worden, J.K., Yanushka Bunn, J., Solomon, L.J., Ashikaga, T., Connolly, S.W., Ramirez, A.G (2004) Mass Media Interventions to Reduce Youth Smoking Prevalence. *American Journal of Preventive Medicine; Volume 39 (1): 53–62*.

Fiala, B., Kopp, M., & Gunther, V. (1997) Why do young women use sunbeds? A comparative psychological study. *British Journal of Dermatology*, 137(6): 950-954.

Fishbein, M., Ajzen, I. (1975) *Belief, attitude, intention, and behavior: an introduction to theory and research*. Addison-Wesley, Reading.

Flick, U. (2009). *An introduction to qualitative research*. London: SAGE.

Foucault, M (1991) *Governmentality*. In Burchell,G., Gordon,C & Miller,P Eds. *The Foucault Effect. Studies in governmentality*. Chicago. University Chigago Press.

Fotuhi, O., Fong, G.T., Zanna, M.P., Borland, R., Yong, H.H., Cummings, K.M. (2013) Patterns of cognitive dissonance-reducing beliefs among smokers: a longitudinal analysis from the International Tobacco Control (ITC) Four Country Survey. *Tobacco Control*, 22(1):52–58.

France, A. (2000) Towards a Sociological Understanding of Youth and their Risk-taking. *Journal of Youth Studies*, Vol. 3(3): 317–331

Frascella, J., Potenza, M.N., Brown, L.L., Childress, A.R. (2010) Shared brain vulnerabilities open the way for non-substance addictions: Carving addiction at a new joint? *Annals of the New York Academy of Sciences*, Vol 1187: 294-315

Fredrickson, B.L., Roberts, T.A. (1997) Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, 21: 173–206.

Freeman, J.G et al. (2009) The relationship of schools to emotional health and bullying. *International Journal of Public Health*, 54(Suppl. 2):251–259.

Freijy, T., Kothe, E.J. (2013) Dissonance-based interventions for health behaviour change: A systematic review. *British Journal of Health Psychology*, 18(2): 310–337.

Funnell, C., Watson, K., Stewart, O., Dua, G. (2006) Corneal Perforation Secondary to UV Radiation from a Tanning Lamp. *Cornea*, 25:1224-1226.

Gadamer, Hans-Georg. (1975) "Hermeneutics and Social Science". *Philosophy Social Criticism / Cultural Hermeneutics* 2: 307-316, D. Reidel Publishing Company, Dordrecht, Holland 2 (4): 307–316.

Gadamar, H.G. (1998) *Truth and method*. (2nd rev edition) New York: The Continuum Publishing Company.

Gallagher, R. P., Elwood, J. M., & Hill, G. B. (1986) *Risk factors for cutaneous malignant melanoma: The Western Canada melanoma study*. Recent Results in Cancer Research. Fortschritte Der Krebsforschung. Progres Dans Les Recherches Sur Le Cancer, 102: 38-55.

Gallagher, R. P., Spinelli, J. J., & Lee, T. K. (2005) Tanning beds, sunlamps, and risk of cutaneous malignant melanoma. *Cancer Epidemiology, Biomarkers & Prevention*, 14(3): 562-566.

Gandini, S., Boniol, M., Haukka, J., Byrnes, G., Cox, B., Sneyd, M. J., Mullie, P., Autier, P. (2010) Meta-analysis of observational studies of serum 25 hydroxyvitamin D levels and colorectal, breast and prostate cancer and colorectal adenoma. *International Journal of Cancer*, 128: 1414–1424.

Garner, D. M., Garfinkel, P. E., Schwartz, D., Thompson, M. (1980) Cultural expectations of thinness in women. *Psychological Reports*, 47(2): 483-491.

Gavin, A., Donnelly, C., Devlin, A., Devereux, C., O'Callahan, G., McElwee, G., Gordon, S., Crossan, T., McMahon, N., Loan, P., Martin, S., McPeak, L., Caughey, J., O'Hagan, A.H. (2010) Public at risk: a survey of sunbed parlour operating practices in Northern Ireland. *British Journal of Dermatology*, vol 162(3):627-632

Geller, A. C., Colditz, G., Oliveria, S., Emmons, K., Jorgensen, C., Aweh, G. N., et al. (2002) Use of sunscreen, sunburning rates, and tanning bed use among more than 10 000 US children and adolescents. *Pediatrics*, 109(6):1009-1014.

Geller, A., Brooks, D., Colditz, G., Koh, H., Frazier, A. (2006) Sun protection practices among offspring of women with personal or family history of skin cancer. *Pediatrics*, 117(4): 688-694.

Gibbons, F. X., Gerrard, M. (1995) Predicting young adults' health-risk behavior. *Journal of personality and social psychology*, 69:505-517.

Gibbons, F. X., Gerrard, M., Lane, D. J., Mahler, H. I. M., & Kulik, J. A. (2005) Using UV photography to reduce use of tanning booths: A test of cognitive mediation. *Health Psychology*, 24(4): 358-363.

Gies, H.P., Roy, C.R., Elliot, G.(1986) Artificial suntanning: spectral irradiance and hazard evaluation of ultraviolet sources. *Health Physics*, 50:691–703.

Giesbertz, N.A.A., Bredenoord, A.L., van Delden, J.J.M. (2013) Clarifying assent in pediatric research. *European Journal of Human Genetics* :1–4.

Gill, P., Stewart, K., Treasure, E Chadwick, B (2008). Methods of data collection in qualitative research: interviews and focus groups. *British Dental Journal*, Vol 204(6): 291-295.

Giovannucci, E. (2005) The epidemiology of vitamin D, cancer incidence and mortality: A review (United States). *Cancer Causes Control*, 16:83–95.

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago, IL: Aldine.

Glaser BG. *Basic social processes*. Grounded Theory Review. 2005; 4: 1-27.

Gleicher, F., Petty, R.E. (1992) Expectations of reassurance influence the nature of fear stimulated attitude change. *Journal of Experimental Social Psychology*, 28:86–100.

Godar, D.E., Urbach, F., Gasparro, F.P., Vander Leun, J.C. (2003) UV Doses of Young Adults. *Photochemistry and Photobiology*; 77(4): 453-457.

Godar, D.E. (2005) UV Doses Worldwide. *Photochemistry and Photobiology*, 81(4): 736-749.

Gordon, L.G., Hirst, N.G., Green, A.C., Neale, R.E. (2012) Tanning behaviours and determinants of solarium use among indoor office workers in Queensland, Australia. *Journal Health Psychology*; 17: 856-65.

Gordon-Larsen, P., Harris, K.M., Ward, D.S., Popkin, B.M. (2003) Acculturation and overweight-related behaviours among Hispanic immigrants to the US: the National Longitudinal Study of Adolescent Health. *Social Science Med*: 2023–34.57:

Gorgos, D. (2002) Skin cancer news. *Dermatology Nursing*, 14(6): 408.

Gouldner, A. (1971) *The Coming Crisis in Western Sociology*. New York, Basic Books.

Grady, C. (2001) Money for Research Participation: Does It Jeopardize Informed Consent? *The American Journal of Bioethics*, Volume 1(2): 40-44.

Graham, B., Asbjorn, A. (1996) Incidence of malignant melanoma of the skin in Norway, 1955–1 989: association with solar ultraviolet radiation, income and holidays abroad. *International Journal Epidemiology*, 25 (6):1132–8.

Graham, H. (1994) Gender and class as dimensions of smoking behaviour in Britain: Insights from a survey of mothers. *Social Science & Medicine* 38(5): 691-698

Grant, J.E., Williams, K.A., Potenza, M.N. (2007) Impulse control disorders in adolescent In-patients: Co-occurring disorders and sex differences. *Journal Clinical Psychiatry*, 68(10):1584–91.

Gray, D. (2009) *Doing research in the real world* (2nd ed.). London: Sage.

Greene, K., Krcmar, M., Walters, L. H., Rubin, D. L., Jerold, & Hale, L. (2000) Targeting adolescent risk-taking behaviors: The contributions of egocentrism and sensation-seeking. *Journal of Adolescence*, 23(4): 439-461.

Greene, K., Brinn, L.S. (2003) Messages influencing college women's tanning bed use: statistical versus narrative evidence format and a self-assessment to increase perceived susceptibility. *Journal Health Communication*, vol 8 :443–461.

Groesz, L.M., Levine, M. P., & Murnen, S. K. (2002) The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31(1): 1-16.

Guba, E; Lincoln, Y (1994) Competing paradigms in qualitative research in N.Denzin and Y, Lincoln (Eds). *Handbook of qualitative research* (pp105-117). Thousand Oaks, CA: Sage.

Haas, A.F. (2007) Teens and Tans. Implementing Behavioral Change. *Archives Dermatology*, Vol 143 (8):1058-1061.

Hale, J.L., Dillard, J.P. (1995) *Fear appeals in health promotion campaigns: Too much, too little, or just right?* In E.W. Maibach, & R.L. Parrot (Eds.), *Designing health messages: Approaches from communication theory and public health practice* (pp. 65–80). CA: Sage.

Hall, H. I., Miller, D. R., Rogers, J. D., & Bewerse, B. (1999) Update on the incidence and mortality from melanoma in the United States. *Journal of the American Academy of Dermatology*, 40(1): 35-42.

Hamlet, N., & Kennedy, K. (2004) Reconnaissance study of sunbed use by primary school children in Lanarkshire. *Journal of Public Health*, 26(1): 31-33.

Hargreaves, D.A., Tiggemann, M. (2004) Idealized media images and adolescent body image: "comparing" boys and girls. *Body Image*, vol 1(4): 351-361.

Hammersly, M. & Atkinson, P. (1983) *Ethnography: Principles in Practice*. Tavistock: London.

Han, D.H., Kim, Y.S., Lee, Y.S., Min, K.J., Renshaw, P.F. (2010) Changes in cue-induced, prefrontal cortex activity with video-game play. *Cyberpsychology, Behavior, and Social Networking*, 13 (6): 655–61.

Hanson, M.D., Chen, E. (2007) Socio-economic status and health behaviors in adolescence. *Journal Behavioural Medicine: a review of the literature*. 2007; 263–85.30:

Harden, A., Weston, R., Oakley, A. (1999) *A review of the effectiveness and appropriateness of peer-delivered health promotion interventions for young people*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Hargreaves, D. A., & Tiggemann, M. (2006) 'Body image is for girls': A qualitative study of boys' body image. *Journal of Health Psychology*, 11(4): 567-576.

Hargreaves, D., Tiggemann, M. (2002) The Effect Of Television Commercials On Mood And Body Dissatisfaction: The Role Of Appearance-Schema Activation. *Journal of Social and Clinical Psychology: Vol. 21: 287-308.*

Harrison, P.A., Fulkerson, J.A., Park, E. (2000) The relative importance of social versus commercial sources in youth access to tobacco, alcohol, and other drugs. *Preventative Medicine, 31:39-48.*

Hazen, E., Schlozman, S., & Beresin, E. (2008). Adolescent psychological development: A review. *Pediatrics in Review, 29, 161-168.*

Hawk, J. L. (1983) Sunbeds. *British Medical Journal (Clinical Research Ed.), 286(6362): 329.*

Health and Safety at Work Act 1974 (c.37) The Stationery Office 1974.

Health & Safety Executive (2009) Revised guidance for tanning salons and their customers.

Heckman, C.J., Egleston, B.L., Wilson, D.B., Ingersoll, K.S. (2008) A preliminary investigation of the predictors of tanning dependence. *American Journal of Health Behaviour, 32(5): 451-64.*

Heidegger M (1927) *Sien und Ziet Max Niemeyer, 1927.* Octavo.

Heinberg, L.J., Thompson, J.K. (1995) Body image and televised images of thinness and attractiveness: a controlled laboratory investigation. *Journal Social Clinical Psychology, 14:325-38.*

Hillhouse, J. J., Adler, C. M., Drinnon, J., & Turrisi, R. (1997) Application of Azjen's theory of planned behavior to predict sunbathing, tanning salon use, and

sunscreen use intentions and behaviors. *Journal of Behavioral Medicine*, 20(4): 365-378.

Hillhouse, J.J., Stair, A.W., Adler, C.M. (1996) Predictors of sunbathing and sunscreen use in college undergraduates. *Journal Behavioural Medicine*, 19(6):543–561.

Hillhouse, J., Turrisi, R., Holwiski, F., McVeigh, S. (1999) An examination of psychological variables relevant to artificial tanning tendencies. *Journal Health Psychology*; 4:507-16.

Hillhouse, J., Turrisi, R., & Kastner, M. (2000) Modeling tanning salon behavioural tendencies using appearance motivation, self-monitoring and the theory of Planned behaviour. *Theory & practice, Oxford University Press*, Vol 15(4):405-414

Hillhouse, J. J., & Turrisi, R. (2002) Examination of the efficacy of an appearance-focused intervention to reduce UV exposure. *Journal of Behavioral Medicine*, 25(4): 395-409.

Hillhouse, J., Stapleton, J., & Turrisi, R. (2005) Association of frequent indoor UV tanning with seasonal affective disorder. *Archives of Dermatology*, 141(11): 1465.

Hillhouse, J., Turrisi, R., Stapleton, J., Robinson, J. (2008) A Randomized Control Trial of an Appearance-focused Intervention to Prevent Skin Cancer. *Cancer*, Vol 113(11): 3257-3266.

Hillhouse, J., Turrisi, R., Stapleton, J., Robinson, J. (2010) Effect of seasonal affective disorder and pathological tanning motives on efficacy of an appearance-focused intervention to prevent skin cancer. *Archives Dermatology*, 146(5):485-491.

Hirsch, F.R., Lippman, S.M. (2005) Advances in the biology of lung cancer chemoprevention. *Journal Clinical Oncology*, 23(14): 3186–97.

H.M.S.O. (1981) Forgery and counterfeiting act, 1981: Elizabeth II

H.M.S.O. (2006) Fraud Act.

H.M.S.O. (2006) The Health Act, (c 28).

H.M.S.O. (2010) Sunbeds (Regulation) Act, (c.20)

H.M.S.O. (2012) Health and Social Care Act, (c. 7)

H.M.S.O. (2012) Protection of Freedoms Act, (c.9)

Hoerster, K.D., Mayer, J.A., Woodruff, S.I., Malcarne, V., Roesch, S.C., Clapp, E. (2007) The influence of parents and peers on adolescent indoor tanning behavior: Findings from a multi-city sample. *Journal American Academic Dermatology*, 57:990-7.

Hoerster, K.D., Garrow, R.L., Mayor, J.A., Clapp, E.J., Weeks, J.R., Woodruff, S.I., Sallis, J.F., Slymen, D.J., Patel, M.R., Sybert, S.A. (2009) Density of Indoor Tanning Facilities in 116 Large U.S. Cities. *American Journal of Preventive Medicine*, Vol 36(3): 243-246.

Holick, M. (1995) Environmental factors that influence the cutaneous production of vitamin D. *The American Journal of Clinical Nutrition*, 61(3):638-645.

Holick, M. F. (2004) Vitamin D: Importance in the prevention of cancers, type1 diabetes, heart disease, and osteoporosis. *American Journal Clinical Nutrition*, 79:362–371.

Hollander, J.A. (2004) The Social Contexts of Focus Groups *Journal of Contemporary Ethnography*; 33(5): 602-634.

Holloway, I. (1997) *Basic concepts for qualitative research*. Oxford: Blackwell Science.

Holly, E. A., Aston, D. A., Cress, R. D., Ahn, D. K., & Kristiansen, J. J. (1995) Cutaneous melanoma in women. I. exposure to sunlight, ability to tan, and other risk factors related to ultraviolet light. *American Journal of Epidemiology*, 141(10): 923-933.

Holly, E. A., Kelly, J. W., Shpall, S., & Chiu, S. (1987) Number of melanocytic nevi as a major risk factor for malignant melanoma. *Journal of the American Academy of Dermatology*, 17(3): 459-468.

Holman, C. D., Armstrong, B. K., & Heenan, P. J. (1986) Relationship of cutaneous malignant melanoma to individual sunlight-exposure habits. *Journal of the National Cancer Institute*, 76(3): 403-414.

Holman, D., Watson, M. (2013) Correlates of intentional tanning among adolescents in the U.S: a systematic review of the literature. *Journal Adolescent Health*; 52(S5):S52-S59.

Hopkins, P. E. (2007) Thinking critically and creatively about focus groups. *Area*, 39(4): 528–535.

Hublet, A., Schmid, H., Clays, E., Godeau, E., Gabhainn, S.N., Joossens, L., Maes, L., & the HBSC Research Network. (2009) Association between tobacco control policies and smoking behaviour among adolescents in 29 European countries. *Addiction*, 104(11): 1918-1926

Hughes, B. R., Altman, D. G., & Newton, J. A. (1993) Melanoma and skin cancer: Evaluation of a health education programme for secondary schools. *British Journal of Dermatology*, 128(4): 412-417.

Hussey, Jill and Hussey, Roger (1997) *Business Research. A Practical Guide for Undergraduate and Postgraduate Students*, Palgrave: Basingstoke.

Hutchinson, S. (1986). *Grounded theory*. In P. L. Munhall & C. J. Oiler (Eds.), qualitative perspective (pp. 111-130). Norwalk, CT: Appleton-Century-Crofts. Nursing research:

International Agency for Research on Cancer. (1992) IARC monographs on the evaluation of the carcinogenic risks to humans. *Solar and Ultraviolet Radiation*. WHO Vol 55:1-325

International Agency for Research on Cancer Working Group on artificial ultraviolet light (UV) and skin cancer. (2007) The association on use of sunbeds with cutaneous malignant melanoma and other skin cancers. A systematic review. *International Journal Cancer*, 120(5):1116-1122.

International Commission on non-ionizing radiation protection (2003) *Health Physics*, 84(1):119-127.

Irwin, C., Barnes, A., Veres, D., & Kaidbey, K. (1993) An ultraviolet radiation action spectrum for immediate pigment darkening. *Photochemistry and Photobiology*, 57(3): 504-507.

ISD Scotland on request, April 2012. Similar data can be found here: <http://www.isdscotland.org/Health-Topics/Cancer/Publications/index.asp>

ISD Scotland on request (2011). Similar data can be found here: <http://gro-scotland.gov.uk/statistics/theme/vital-events/general/ref-tables/index.html>. (Accessed January 2013).

Jaccard, J. (1981) Attitudes and behavior: implications for attitudes toward behavioral alternatives. *Journal of Experimental Social Psychology*, 17:286–307.

Jaccard, J., Blanton, H., Dodge, T. (2005) Peer Influences on Risk Behavior: An Analysis of the Effects of a Close Friend. *Developmental Psychology*, Vol. 41(1): 135–147.

Jackson, K. M., & Aiken, L. S. (2000) A psychosocial model of sun protection and sunbathing in young women: The impact of health beliefs, attitudes, norms, and self-efficacy for sun protection. *Health Psychology*, 19(5): 469-478.

Jacobs, D.F. (2000) Juvenile gambling in North America: An analysis of long term trends and future prospects. *Journal of Gambling Studies*, 16: 119-52.

Janssen, E., van Osch, L., de Vries, H., & Lechner, L. (2011) Measuring risk perceptions of skin cancer: Reliability and validity of different operationalizations. *British Journal of Health Psychology*, 16: 92-112.

Jayakody, A., Sinha, S., Tyler, K., et al. (2011) Early sexual risk among black and minority ethnicity teenagers: a mixed methods study. *Journal Adolescent Health: 499–506.48.*

Jerkegren, E., Sandrieser, L., Brandberg, Y., & Rosdahl, I. (1999) Sun-related behaviour and melanoma awareness among Swedish university students. *European Journal of Cancer Prevention, 8(1): 27-34.*

Jessor, R., & Jessor, S. (1977) *Problem behavior and psychosocial development*. New York: New York Academic Press.

Johnson, J. (2002) *In-depth interviewing*. In: Gubrium, J., Holstein, J., eds. *Handbook of Qualitative Research*. Thousand Oaks, California. Sage:103–19.

Jones, D. (2001) Social Comparison and Body Image: Attractiveness Comparisons to Models and Peers Among Adolescent Girls and Boys. *Sex Roles, Vol 45, (9/10):645-664.*

Jones, R. and Bradley, E. (2007) 'Health Issues for Adolescents', *Paediatrics and Child Health 17(11): 433-8.*

Kaplan, P. S. (2004). *Adolescence*. Boston: Houghton Mifflin Company.

Karagas, M. R., Stannard, V. A., Mott, L. A., Slattery, M. J., Spencer, S. K., & Weinstock, M. A. (2002) Use of tanning devices and risk of basal cell and squamous cell skin cancers. *Journal of the National Cancer Institute, 94(3): 224-226.*

Kitzinger, J. (1994a) *Focus groups: Method or madness?* In Challenge and innovation. Methodological advances in social research on HIV/AIDS. London: Taylor & Francis. edited by M. Boulton.

Karlsson, P., Boeryd, B., Sander, B., Westermark, P., & Rosdahl, I. (1998) Increasing incidence of cutaneous malignant melanoma in children and adolescents 12-19 years of age in Sweden 1973-92. *Acta Dermato-Venereologica*, 78(4): 289-292.

Kaur, M., Liguori, A., Lang, W., Rapp, S. R., Fleischer Jr., A. B., & Feldman, S. R. (2006) Induction of withdrawal-like symptoms in a small randomized, controlled trial of opioid blockade in frequent tanners. *Journal of the American Academy of Dermatology*, 54(4): 709-711.

Keesling, B., & Friedman, H. S. (1987) Psychosocial factors in sunbathing and sunscreen use. *Health Psychology*, 6(5): 477-493.

Kim, J.H., Lennon, S.J. (2007) Mass Media and Self-Esteem, Body Image, and Eating Disorder Tendencies. *Clothing and Textiles Research Journal*, 25(1):3-23.

Kligman, L. H., Kligman, A. M. (1986) The nature of photoaging: its prevention and repair. *Photodermatology*, 3(4):215-227.

Knight, M.J., Kirincich, A.N., Farmer, E.R., Hood, A.F. (2002) Awareness of the Risks of Tanning Lamps Does Not Influence Behaviour Among College Students. *Archives of Dermatological Research*, vol 138: 1311-1315.

Koch, T., Harrington, A. (1998) Reconceptualizing rigour: the case for reflexivity. *Journal of Advanced Nursing*, 28(4): 882-890.

Køster, B., Thorgaard, C., Clemmensen, I. H., & Philip, A. (2009) Sunbed use in the Danish population in 2007: A cross-sectional study. *Preventive Medicine*, 48(3): 288-290.

Krishnan, A., Feldman, D. (2011) Mechanisms of the Anti-Cancer and Anti-Inflammatory Actions of Vitamin D. *Annual Review of Pharmacology and Toxicology*, 51(1):311-316

Kristjánsson, S., Helgason, Á. R., Månsson-Brahme, E., Widlund-Ivarson, B., & Ullén, H. (2003) 'You and your skin': A short-duration presentation of skin cancer prevention for teenagers. *Health Education Research*, 18(1): 88-97.

Kuntsche, E. (2009) Decrease in adolescent cannabis use from 2002 to 2006 and links to evenings out with friends in 31 European and North America countries and regions. *Archives of Pediatric and Adolescent Medicine*, 163(2):119–125.

Laaksonen, C., Holmberg, J., von Schantz. (2012) Health promotion in adolescence: what about the social media? *AMK-lehti//Journal of Finnish Universities of Applied Sciences*, No 4(2012).

Lader, D., Matherson, J. (1991) *Smoking among secondary school children in 1990*. HMSO, London

Lake, J., Thompson, C., Twelves, C., Davies, E. (2013) A qualitative investigation of the motivations, experiences and views of female sunbed users under the age of 18 in England. *Journal of Public Health*:1-9 Downloaded from <http://jpubhealth.oxfordjournals.org/> at Sydney Jones Library, University of Liverpool on June 19, 2013.

Lamanna, L. M. (2004) College students' knowledge and attitudes about cancer and perceived risks of developing skin cancer. *Dermatology Nursing / Dermatology Nurses' Association*, 16(2), 161:164-175.

Lambert, S.D., Loiselle, C.G. (2008) Combining individual interviews and focus groups to enhance data richness. *Journal of Advanced Nursing* 62(2): 228–237.

Lawson, C., Baker, M., Hillhouse, J. (2012) *Maternal tanning influences daughters' perceived attractiveness and intention to tan*. Paper presented at the Appalachian Student Research Forum, Johnson City, TN.

Lazovich, D., Forster, J., Sorensen, G., Emmons, K., Stryker, J., Demierre, M., Hickie, A., Remba, N. (2004a) Characteristics Associated With Use or Intention to Use Indoor Tanning Among Adolescents. *Archives Pediatric Adolescent Medicine*, 158:918-924.

Lazovich, D., Sweeney, C., Weinstock, M. A., & Berwick, M. (2004b) Re: A prospective study of pigmentation, sun exposure, and risk of cutaneous malignant melanoma in women. *Journal of the National Cancer Institute*, 96(4): 335-8.

Lazovich, D., & Forster, J. (2005) Indoor tanning by adolescents: Prevalence, practices and policies. *European Journal of Cancer*, 41(1): 20-27.

Leary, M. R., Saltzman, J. L., & Georgeson, J. C. (1997) Appearance motivation, obsessive-compulsive tendencies and excessive suntanning in a community sample. *Journal of Health Psychology*, 2(4): 493-499.

Lens, M.B., Dawes, M. (2004) Global perspectives of contemporary epidemiological trends of cutaneous malignant melanoma. *British Journal of Dermatology*, 150(2): 179-185.

Lerner, R., & Villarruel, F. (1994). *Adolescence*. In T. Husen & T. Postlethwait (Eds.), *The international encyclopedia of education* (pp. 83-89). Oxford, England: Pergamon.

Leshner, G., Bolls, P., Thomas, E. (2009) Scare' Em or Disgust 'Em: The Effects of Graphic Health Promotion Messages. *Health Communication, 24(5): 447-458.*

Levine, J. A., Sorace, M., Spencer, J., & Siegel, D. M. (2005) The indoor UV tanning industry: A review of skin cancer risk, health benefit claims, and regulation. *Journal of the American Academy of Dermatology, 53(6): 1038-1044.*

Lewis, I.M., Watson, B., White, K.M., Tay, R. (2013) Promoting Public Health Messages: Should We Move Beyond Fear-Evoking Appeals in Road Safety? *Qualitative Health Research, 17: P 61-74.*

Lichtenstein, J., & Sherertz, E. F. (1985) Harmful effects of indoor tanning. *American Family Physician, 32(3):142-146.*

Lillquist, P.P., Baptiste, M.S., Witzigman, M.A., Nasca, P.C. (1994) A population-based survey of sun lamp and indoor parlor use in New York state 1990. *Journal of the American Academy of Dermatology, 31: 510-512.*

Lincoln, Y. S., & Guba, E. G. (2000) *Paradigmatic controversies, contradictions, and emerging confluences*. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 163-188). Thousand Oaks, CA: Sage.

Linn, M. W., Linn, B. S., & Stein, S. R. (1982) Beliefs about causes of cancer in cancer patients. *Social Science and Medicine, 16(7): 835-839.*

Livingston, P. M., White, V., Hayman, J., & Dobbinson, S. (2003) Sun exposure and sun protection behaviours among Australian adolescents: Trends over time. *Preventive Medicine, 37(6): 577-584.*

Llopis, E.J., Barry, M.M. (2005) What makes mental health promotion effective? *International Union for Health Promotion and Education. Promotion & Education Supplement (2):47-55*

Lofland, J., Lofland, L.H. (2005) *Analysing social settings: a guide to qualitative observation and analysis*, Part 2. Wadsworth, Social Science.

Loescher, L., Buller, M.K., Buller, D., Emerson, J., Taylor, A. (1995) Public education projects in skin cancer. The evolution of skin cancer prevention education for children at a comprehensive cancer center. *Cancer; 5(2): 651-656.*

Loiselle C, Profetto-McGrath J, Polit D, & Beck C. (2007) Polit & Beck *Canadian Essentials of Nursing Research*, 2nd edition. Lippincot Williams & Wilkins, Philadelphia, PA.

Lunt, P., Livingstone, S. (1996) Rethinking the Focus Group in Media and Communication Research. *Journal of Communication, 46:79-98*

Lupton, D., Tulloch, J (2002) 'Life would be pretty dull without risk': voluntary risk-taking and its pleasures. *Health, Risk & Society. Vol 4(2): 113-123.*

Mackay, H., Lowe, D., Edwards, D., & Rogers, N. (2007) A survey of 14 to 16 year olds as to their attitude toward and use of sunbeds. *Health Education Journal, 66: 141-152.*

MacKie, R. M. (1998) Incidence, risk factors and prevention of melanoma. *European Journal of Cancer, 34(Supplement 3), S3-S4.*

MacKie, R., Bray, C., Vestey, J., Doherty, V., Evans, A., Thompson, D., Nicolson, M. (2007) Melanoma incidence and mortality in Scotland 1979–2003. *British Journal Cancer, 96:1772–7.*

Macvarish, J. (2010) "The effect of 'risk-thinking' on the contemporary construction of teenage motherhood", *Health, Risk and Society*, Vol. 12(4):313-22.

Maddux, J., Desmond, D. (2000) Addiction or dependence? *Addiction*, 95: 661-5.

Magee, K.H., Poorsatter, S., Siedel, K.D., Hornung, R.L. (2007) Tanning device useage: What are parents thinking? *Pediatric Dermatology*, 24(3):216-221.

Mahler, H., Kulik, J., Gerrard, M., Gibbons, F. (2007) Long-term effects of appearance-based interventions on sun protection behaviors. *Health Psychology*, 26(3):350–60.

Mahler, H. I. M., Kulik, J. A., Harrell, J., Correa, A., Gibbons, F. X., & Gerrard, M. (2005) Effects of UV photographs, photoaging information, and use of sunless tanning lotion on sun protection behaviors. *Archives of Dermatology*, 141(3): 373-380.

Makin, J., Hearne, K., Dobbinson, S.J. (2011) Compliance with age and skin type restrictions following the introduction of indoor tanning legislation in Melbourne, Australia. *Photodermatology, Photoimmunology & Photomedicine*, 27(6):286–293.

Malcolm, K., Jensen-Campbell, L., Rex-Lear, M., Waldrip, A. (2006) Divided we fall: Adolescents friendships and peer victimization. *Journal of Social and Personal Relationship*, 25(5): 721–740.

Management of health and safety at work. *Management of Health and Safety at Work Regulations*, 1999 Approved Code of Practice and guidance L21 (Second edition) HSE Books 2000.

Martin, J., Ghaferi, J., Cummins, D., Mamelak, A., Schmults, C., Parikh, M., Speyer, L., Chuang, A., Richardson, H., Stein, D., Liégeois, N. (2009) Changes in skin tanning attitudes. Fashion articles and advertisements in the early 20th century. *American Journal of Public Health, 99(12):2140-2146.*

Masten, C.L., Eisenberger, N.I., Borofsky, L.A., Pfeifer, J.H., McNealy, K., Mazziotta, J., Dapretto, M. (2009) Neural correlates of social exclusion during adolescence: Understanding the distress of peer rejection. *Social Cognitive and Affective Neuroscience, 4: 143–157.*

Matsumura, Y., & Ananthaswamy, H. N. (2004) Toxic effects of ultraviolet radiation on the skin. *Toxicology and Applied Pharmacology, 195(3): 298-308.*

Mawn, V. B., & Fleischer Jr., A. B. (1993) A survey of attitudes, beliefs, and behavior regarding tanning bed use, sunbathing, and sunscreen use. *Journal of the American Academy of Dermatology, 29(6): 959-962.*

Maxwell, A. (1996) *Qualitative research design: An interactive approach.* Thousand Oaks CA: Sage.

Mayer, J.A., Woodruff, S.I., Slymen, D.J., Sallis, J.F., Forster, J.L., Clapp, E.J., Horester, K.D., Pichon, L.C., Weeks, J.R., Belch, G.E., Weinstock, M.A., Gilmer, T. (2011) Adolescents' Use of Indoor Tanning: A Large-Scale Evaluation of Psychosocial, Environmental, and Policy-Level Correlates. *American Journal of Public Health, 101(5): 930–938.*

McAdams, D., Josselson, R., & Lieblich, A. (2006) *Identity and story: Creating self in narrative.* Washington, DC: American Psychological Association.

McLean, K.C., Pasupathi, M., & Pals, J.L. (2007) Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review*, 11(3): 262-278.

McCoy, S.I., Jewell, N.P., Hubbard, A., Gerdtts, C.E., Doherty, I.A., Padian, N.S., & Minnis, A.M. (2010) A trajectory analysis of alcohol and marijuana use among Latino adolescents in San Francisco, California. *Journal of Adolescent Health*; 47: 564–574

McDougall, P., Hymel, S., Vaillancourt, T., Mercer, A. (2001) *The consequences of adolescence peer rejection*. In M.R. Leary (Ed.), *Interpersonal rejection* (pp. 3-20). New York: Oxford University Press.

McLean, K.C., Pasupathi, M., & Pals, J.L. (2007) Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review*, 11(3): 262-278.

McKinlay, A. F., Diffey, B. L. (1987) Reference action spectrum for ultraviolet induced erythema in human skin. *CIE-Journal*, 6(1): 17-22.

McRobbie, A (2007) Top Girls? *Cultural Studies* vol 1(4):718-737.

Merleau-Ponty M (1945) *Phénoménologie de la perception*, published by Gallimard, Paris.

Mermelstein, R. J., & Riesenberg, L. A. (1992) Changing knowledge and attitudes about skin cancer risk factors in adolescents. *Health Psychology*, 11(6): 371-376.

Merseyside and Cheshire Cancer Network (2009) A Social Marketing Initiative for Sun Exposure & Sun Bed Use. Available from:

<http://www.mccn.nhs.uk/userfiles/documents/MCCN%20-%20Final%20Report%20&%20Evaluation.pdf>

Michael, K., Ben-Zur, H. (2007) 'Risk-taking among Adolescents: Associations with Social and Affective Factors', *Journal of Adolescence* 30(1): 17–31.

Millar, M.G., Tesser, A. (1989) The effects of affective–cognitive consistency and thought on the attitude–behavior relation. *Journal of Experimental Social Psychology*, 25:189–202.

Miller, A.G., Ashton, W.A., McHoskey, J.W., Gimbel, J. (1990) What price attractiveness? stereotype and risk factors in sun tanning behaviour. *Journal of Applied Social Psychology*, 20(15):1272-1300.

Miller, S. A., Hamilton, S. L., Wester, U. G., & Cyr, W. H. (1998) An analysis of UVA emissions from sunlamps and the potential importance for melanoma. *Photochemistry and Photobiology*, 68(1): 63-70.

Miller, W., Crabtree, B. (1999) *Depth interviewing*. In: Crabtree, B., Miller, W., eds. *Doing Qualitative Research*. 2nd edn. Thousand Oaks, California: Sage: 89-107.

Minagawa, K.E., While, D., Charlton, A. (1993) Smoking and self-perception in secondary school students. *Tobacco Control*, 2(3): 215-221.

Moffitt, T.E., Caspi, A., Harrington, H., & Milne, B.J. (2002) Males on the life-course-persistent and adolescence-limited anti-social pathways: Follow-up at age 26 years. *Development and Psychopathology*, 14: 179-207.

Montella, A., Gavin, A., Middleton, R., Autier, P., Boniol, M. (2009) Cutaneous melanoma mortality starting to change: a study of trends in Northern Ireland. *European Journal Cancer*, 45: 2360-6.

Mongeau, P. (1998) *Another look at fear arousing messages*. In M. Allen & R. Preiss (Eds.), *Persuasion: Advances through meta-analysis* (pp. 53–68). Cresskill, New Jersey: Hampton Press.

Monfrecola, G., Fabbrocini, G., Posteraro, G. (2000) What do young people think about the dangers of sunbathing, skin cancer and sunbeds? A questionnaire survey among Italians. *Photodermatology, Photoimmunology Photomedicine*, 16:15-8.

Moreno, C. et al., (2009) HBSC Peer Culture Focus Group. Cross-national associations between parent and peer communication and psychological complaints. *International Journal of Public Health*, 54(Suppl. 2):235–242.

Morgan, D. (1997) *Focus groups as qualitative research*. Sage.

Morgan, D. L. (1998) *The focus group guide book*. London Sage Publications.

Morgan A and Ziglio E (2007) Revitalising the evidence base for public health: An assets model. *Promotion and Education* 14 (2): 17–22.

Moyer, V.A. (2012) Behavioral Counseling to Prevent Skin Cancer: U.S. Preventive Services Task Force Recommendation Statement. *Annals Internal Medicine*, 157:59-65.

Murray, C. D., & Turner, E. (2004) Health, risk and sunbed use: A qualitative study. *Health Risk & Society*, 6(1): 67-80.

Neenan, A., Lea, S.C., Lesesky, E.B. (2012) Reasons for Tanning Bed Use: A Survey of Community College Students in North Carolina. *North Carolina Medical Journal*, 73(2):89-92.

NICE (2011): *Skin cancer: prevention using public information, sun protection resources and changes to the environment*. PH32.

Nic Gabhainn S et al. (2009) How well protected are sexually active 15-year-olds? Cross-national patterns in condom and contraceptive pill use 2002–2006. *International Journal of Public Health*, 54:S209–S215.

Nolan, B.V., Taylor, S.L., Liguori, A., Feldman, S.R. (2009) Tanning as an addictive behaviour: a literature review. *Photodermatology Photoimmunology & Photomedicine*, 25(1):12-19.

Northern Ireland Cancer Registry on request, June 2012. Similar data can be found here:

<http://www.qub.ac.uk/researchcentres/nicr/CancerData/OnlineStatistics/>

Northern Ireland Cancer Registry (2011). Similar data can be found here: <http://www.nisra.gov.uk/demography/default.asp22.htm>. (Accessed January 2013).

Nunokoosing, K. (2005) The problems with interviews. *Qualitative Health Research*, 15(5), 698–706.

O'Brien, C., Volkow, N., Li, T. (2006) What's in a word? Addiction versus dependence in DSM-V. *American Journal Psychiatry*, 163: 764-5.

Office of National Statistics (2004) *The health of children and young people*. London, ONS.

Office of National Statistics. (2010) *Mortality statistics: Cause. England and Wales, 2008*. . London: TSO.

Office of National Statistics. (2011) *Registration of cancers diagnosed in 2008*. England. series MB1 No. 39).

Office for National Statistics on request, June 2012 Similar data can be found here:<http://www.ons.gov.uk/ons/search/index.html?newquery=cancer+registratio ns>

Office for National Statistics on request (2011) Similar data can be found here: <http://www.ons.gov.uk/ons/publications/allreleases.html?definition=tcm%3A77-27475>. (Accessed January 2013).

Oliphant, J. A., Forster, J. L., & McBride, C. M. (1994) The use of commercial tanning facilities by suburban Minnesota adolescents. *American Journal of Public Health, 84*(3): 476-478.

Oliver, H., Ferguson, J., & Moseley, H. (2007) Quantitative risk assessment of sunbeds: Impact of new high power lamps. *British Journal of Dermatology, 157*(2): 350-356.

O’Riordan, D.L., Field, A.E., Geller, A.C., Brooks, D.R., Aweh, G., Colditz, G.A., Frazier, L.A. (2006) The association of tanning bed use with weight concerns and other health risk behaviors. *Cancer Causes Control, 17*: 679–686.

Panjwani, C., Caraher, M. (2013) The Public Health Responsibility Deal: Brokering a deal for public health, but on whose terms? *Health Policy: 1-11*.

Parkin, D. M., Bray, F., Ferlay, J., & Pisani, P. (2005) Global cancer statistics, 2002. *Ca-A Cancer Journal for Clinicians, 55*(2): 74-108.

Paul, C. L., Girgis, A., Tzelepis, F., & Walsh, R. A. (2004) Solaria use by minors in Australia: Is there a cause for concern? *Australian and New Zealand Journal of Public Health, 28(1): 90.*

Paul, C. L., Stacey, F., Girgis, A., Brozek, I., Baird, H., & Hughes, J. (2005) Solaria compliance in an unregulated environment: The Australian experience. *European Journal of Cancer, 41(8): 1178-1184.*

Pavey, L.J., Sparks, P. (2009) Autonomy and reactions to health-risk information. *Psychology & Health, 25(7): 855-872.*

Paxton, S.J., Norris, M., Wertheim, E.H., Durkin, S.J., Anderson J. (2005) Body Dissatisfaction, Dating, and Importance of Thinness to Attractiveness in Adolescent Girls. *Sex Roles, Vol. 53(9):663-675.*

Peak, J. G., & Peak, M. J. (1991) Comparison of initial yields of DNA-to-protein crosslinks and single strand breaks induced in cultured human cells by far-and near- ultraviolet light, blue light and x-rays. *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 246(1):187-191.*

Peters, E., McCaul, K., Stefanek, M., Nelson, W. (2006) A heuristics approach to understanding cancer risk perception: Contributions from judgment and decision-making research. *Annals of Behavioral Medicine, 31(1): 45-52.*

Petry, N.M. (2006) Should the scope of addictive behaviors be broadened to include pathological gambling? *Addiction, 101(Supplement 1):152-60.*

Phillips, K. A., Conroy, M., Dufresne, R. G., Menard, W., Didie, E. R., Hunter-Yates, J., Fay, C., Pagano, M. (2006) Tanning in body dysmorphic disorder. *Psychiatric Quarterly, 77(2): 129-138.*

Polit, D. F., Beck, C. T., & Hungler, B. P. (2001) *Essentials of nursing research: Methods, appraisal and utilisation*. (5th ed.). Philadelphia PA: Lippincott.

Polit, D.F., Beck, C.T. (2010) Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, Volume 47(11):1451–1458

Pokorny, S.B., Jason, L.A., Schoeny, M. (2006) Youth supplying tobacco to other minors: evaluating individual and town level correlates. *Journal Youth Adolescents*, 35: 705–15.

Poorsattar, S.P., Hornung, R.L. (2007) UV light abuse and high-risk tanning behavior among undergraduate college students. *Journal American Academic Dermatology*, 56(3):375–379.

Popay, J., et al. (2003) Beyond 'beer, fags, egg and chips'? Exploring lay understandings of social inequalities in health. *Sociology Of Health & Illness* 25(1): 1-23.

Posovac, H.D., Posovac, S.S., Posovac, E.J. (1998) Exposure to media images of female attractiveness and concern with body weight among young women. *Sex Roles*,38:187-201.

Potenza, M.N. (2006) Should addictive disorders include non-substance-related conditions? *Addiction*, 101(Supplement 1):142–51.

Pujazon-Zazik, M., Park, J.M. (2010) To Tweet or Not to Tweet: Gender Differences and Potential Positive and Negative Health Outcomes of Adolescents' Social Internet Use. *American Journal of Men's Health*; 4(1): 77-85.

Radespiel-Tröger, M., Meyer, M., Pfahlberg, A., Lausen, B., Uter, W., Gefeller, O. (2009) Outdoor work and skin cancer incidence: a registry-based study in Bavaria. *International Archive. Occupational Environmental Health*, 82: 357–363.

Rasmussen M et al. (2005) School connectedness and daily smoking among boys and girls: the influence of parental smoking norms. *European Journal of Public Health*, 15(6):607–612.

Reimann, V., Kramer, U., Sugiri, D., Schroeder, P., Hoffmann, B., Medve-Koenigs, K., Jokel, K., Ranft, U., Krutmann, J. (2008) Sunbed use induces the photoaging-associated mitochondrial common deletion. *Journal Investigative Dermatology*, 128:1294–1297.

Reynolds, D. (2007) Literature review of theory-based empirical studies examining adolescent tanning practices. *Dermatology Nursing / Dermatology Nurses' Association*, 19(5): 440-447.

Rhains, M., De Guire, L., & Claveau, J. (1999) A population based survey on the use of artificial tanning devices in the province of Quebec, Canada. *Journal of American Academic Dermatology*, 40(4): 572-576.

Richards, M. (2009) The National Awareness and Early Diagnosis Initiative in England: assembling the evidence. *British Journal of Cancer*, 101: S1–S4.

Richter, M. et al. (2009) Parental occupation, family affluence and adolescent health behaviour in 28 countries. *International Journal of Public Health*, 54(4):203–212.

Rigel, D. S., Friedman, R. J., & Kopf, A. W. (1996) The incidence of malignant melanoma in the United States: Issues as we approach the 21st century. *Journal of the American Academy of Dermatology*, 34(5 1): 839-847.

Roberts, D., & Foley, K. (2009) Sunbed use in children-time for new legislation? *British Journal Dermatology*, 161(1):193-194.

Robinson, J. K., Rademaker, A. W., Sylvester, J. A., & Cook, B. (1997) Summer sun exposure: Knowledge, attitudes, and behaviors of Midwest adolescents. *Preventive Medicine*, 26(3):364-372.

Robson, C. (2002) *Real world research* (2nd ed.). Oxford: Blackwell.

Rodgers-Farmer, A.Y. (2000) "Parental monitoring and peer group association: Their influence on adolescent substance use", *Journal of Social Service Research*, vol. 27(2): 1-18.

Rodham, K., Hawton, K., Evans, E., Weatherall, R. (2005) Ethnic and gender differences in drinking, smoking and drug taking among adolescents in England: a self-report school-based survey of 15 and 16 year olds. *Journal of Adolescence* 28: 63–73.

Rosenstock I (1974) Historical Origins of the Health Belief Model. *Health Education Behaviour*, 2: 328-335.

Rosenstock, I.M. (1966) "Why people use health services", *Milbank Memorial Fund Quarterly* 44 (3): 94–127.

Robertson, J. (2000) The three Rs of action research methodology: reciprocity, reflexivity and reflection on- reality. *Educational Action Research*, 8(2):307-326.

Rubin, H., Rubin, I. (2005) *Listening, hearing and sharing social experiences*. Qualitative Interviewing: the Art of Hearing Data. Thousand Oaks, Ca. Sage: 1–18.

Sands, R.G., Roer-Strier, D. (2006) Using data triangulation of mother and daughter interviews to enhance research about families. *Qualitative Social Work, Vol 5(2): 237–260*.

Sarasin, A. (1999) The molecular pathways of ultraviolet-induced carcinogenesis. *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 428(1-2): 5-10*.

Sargent, J.D., Dalton, M.A. (2001) Does Parental Disapproval of Smoking Prevent Adolescents From Becoming Established Smokers? *Pediatrics, 108:6 1256-1262*.

Sartre, J (1943) *Being and Nothingness*. Trans. Hazel E. Barnes. New York: Washington Square Press.

Savage, M. and Egerton M. (1997) Social Mobility, Individual Ability and the Inheritance of Class Inequality. *Sociology 31(4): 645-672*.

Savona, M.R., Jacobsen, M.D., James, R., Owen, M.D. (2005) Ultraviolet radiation and the risks of cutaneous malignant melanoma and non-melanoma skin cancer: perceptions and behaviours of Danish and American adolescents. *European Journal of Cancer Prevention; 14(1): 57-62*.

Schneider, S., Zimmerman, S., Diehl, K., Breitbart, E.W., Greinert, R. (2009) Sunbed Use in German Adults: Risk Awareness Does Not Correlate With Behaviour. *Journal of the European Academy of Dermatology and Venereology, 89: 470–475*.

Schneider, S., & Kramer, H. (2010) Who uses sunbeds? A systematic literature review of risk groups in developed countries. *Journal European Academy of Dermatology and Venereology*, 24(6): 639-648.

Schneider, S., Diehl, K., Bock, C., Schlu"ter, M., Breitbart, E., Volkmer, B., Greinert, R. (2012) Sunbed Use, User Characteristics, and Motivations for Tanning Results From the German Population-Based SUN-Study. *JAMA Dermatology*, 149(1):43-49.

Scholte, H., Van Aken, M. (2006) *Peer relations in adolescent*. In S. Jackson & L. Goossens (Eds.), *Handbook of adolescent development* (pp. 175–199). Hove: Psychology Press.

Schulman, J. M., & Fisher, D. E. (2009) Indoor ultraviolet tanning and skin cancer: Health risks and opportunities. *Current Opinion in Oncology*, 21: 144-149.

Schutz A (1954) Concept and Theory Formation in Social Sciences. *The Journal of Philosophy*, vol 51(9):257-273.

Scott, C., Hillhouse, J., Turrisi, (2013) Evaluating a Theoretical Model of Indoor Tanning Using Structural Equation Modelling. *Public Health Reports; Volume 129:107-10*

Siedel, J. (1991) *Method and madness in the application of computer technology in qualitative data analysis*. In Lee, R., & Fielding, N. (Eds.), *Using computers in qualitative research* (pp. 107-116). London: Sage.

Shapira, N.A., Lessig, M.C., He, A.G., James, G.A., Driscoll, D.J., Liu, Y. (2005) Satiety dysfunction in Prader-Willi syndrome demonstrated by fMRI. *Journal Neurological Neurosurgery Psychiatry*, 76(2): 260-2.

Shoveller, J., Lovato, C., Young, R., Moffat, B. (2003) Exploring the Development of Sun-Tanning Behavior: A Grounded Theory Study of Adolescents' Decision-Making Experiences With Becoming a Sun Tanner. *International Journal of Behavioural Medicine*, 10(4): 299-314.

Silva, E (2005) Gender, home and family in cultural capital theory. *The British Journal of Sociology*, Vol 56 (1): 83-103.

Simons-Morton, B., Chen, R.S. (2006) Over time relationships between early adolescent and peer substance use. *Addictive Behaviours*, 31(7):1211–1223.

Situm, M., Bolanca, Z., Buljan, M. (2010) Lentigo malignant melanoma – the review. *Collegium Antropologicum*, 34(2):299–301.

Sjöberg, L., Holm, L.E., Ullen, H., Brandberg, Y. (2004) Tanning and risk perception in adolescents. *Health Risk & Society*, 6(1):81–94.

Slater, A., Tiggemann, M. (2002) A Test of Objectification Theory in Adolescent Girls. *Sex Roles*, Vol. 46, (9/10): 343-349.

Smith,C.A.,Ireland,T.O., Thornberry,T.P.(2005) Adolescent maltreatment and its impact on young adult antisocial behavior.*Child Abuse& Neglect*,29(10):1099-1119.

Social Exclusion Unit (2000) *Report on policy action team 12 on young people*. London: The Stationery Office.

Smith, D. (1997) *Phenomenology: Methodology and method* in J.Higgs(ed), *Qualitative research: Discourse on methodologies*. (pp. 75-80). Sydney New South Wales: Hampden Press.

Snow, J., Harris, M. (1985) Maintenance of weight loss: Demographic, behavioral and attitudinal correlates. *Journal of Obesity and Weight Regulation*, 4: 234-255.

Spencer, J. M., Amonette, R. A. (1995) Indoor tanning: Risks, benefits, and future trends. *Journal of the American Academy of Dermatology*, 33(2 Part 1): 288-298.

Spencer, G. (2014) Young people and health: Towards a new conceptual framework for understanding. *Health*, 18 (1): 3-22.

Stead, L., Lancaster, T. (2005) *Interventions for preventing tobacco sales to minors*. *Cochrane Database Systematic Review*, Issue 1, Art. No.: CD001497.

Steinberg, L., Morris, A. S. (2001) Adolescent development. *Annual Review of Psychology*, 52(1):83.

Stern, R. S. (2001) The risk of melanoma in association with long-term exposure to PUVA. *Journal of the American Academy of Dermatology*, 44(5): 755-761.

Stone, J. Focella, E. (2011) Hypocrisy, dissonance and the self-regulation processes that improve health. *Self and Identity*, 10(3): 295-303.

Strauss, A., & Corbin, J. (1990) *Basics of qualitative research: Grounded theory procedure and techniques*. Newbury Park, CA: Sage Publications, Inc.

Streubert, H., & Carpenter, D. (1999). *Qualitative research in nursing: Advancing the humanistic 2nd imperative* (2 ed.). Philadelphia, PA: Lippincott ethnography.

Stryker, J. E., Lazovich, D., Forster, J. L., Emmons, K. M., Sorensen, G., & Demierre, M. F. (2004) Maternal/female caregiver influences on adolescent indoor tanning. *Journal of Adolescent Health, 35(6): 528.e1-528.e9.*

Su, J., Pearce, D.J., Feldman, S.R. (2005) The role of commercial tanning beds and ultraviolet A light in the treatment of psoriasis. *Journal of dermatological treatment, 16(5-6):324-326.*

Sussman, S., Sussman, A. (2011) Considering the Definition of Addiction. *International Journal of Environmental Research, 8: 4025-4038.*

Swerdlow, A. J., English, J. S., MacKie, R. M., O'Doherty, C. J., Hunter, J. A., Clark, J. (1988) Fluorescent lights, ultraviolet lamps, and risk of cutaneous melanoma. *British Medical Journal, 297(6649): 647-650.*

Swerdlow, A. J., & Weinstock, M. A. (1998) Do tanning lamps cause melanoma? an epidemiologic assessment. *Journal of the American Academy of Dermatology, 38(1): 89-98.*

Taylor, B. (2005) The experience of overseas nurses working in the NHS: result of a qualitative study. *Diversity in Health and Social Care, 2: 17-27.*

Temin M, Levine R. (2009) *Start with a girl: a new agenda for global health.* Washington, DC: Center for Global Development.

Thieden, E., Jørgensen, H. L., Jørgensen, N.R., Philipsen, P. A., Wulf, H.C. (2008) Sunbed Radiation Provokes Cutaneous Vitamin D Synthesis in Humans- A Randomized Controlled Trial. *Photochemistry and Photobiology, 84:1487-1492.*

Thomas, K., Ricciardelli, L. A., & Williams, R. J. (2000) Gender traits and self-concept as indicators of problem eating and body dissatisfaction among children. *Sex Roles, 43*(7-8): 441-458.

Thompson, C. S., Foreman, D. (2009) Cancer survival in England and the influence of early diagnosis: What can we learn from recent EURO CARE results? *British Journal of Cancer, 101*(Supplement 2): S102-S109.

Thompson, C. S., Woolnough, S., Wickenden, M., Hiom, S., & Twelves, C. J. (2010) Sunbed use in children aged 11-17 in England: Face to face quota sampling surveys in the national prevalence study and six cities study. *British Medical Journal (Clinical Research Ed.): 340*:c877.

Thornton, B., & Moore, S. (1993) Physical attractiveness contrast effect; implications for self-esteem and evaluation of social self. *Personality and Social Psychology Bulletin, 19*: 474-480.

Tierney, P., Ferguson, J., Ibbotson, S., Dawe, R., Eadie, E., Moseley, H. (2012) Nine out of 10 sunbeds in England emit ultraviolet radiation levels that exceed current safety limits. *British Association of Dermatologists, 168*: 602–608.

Tiggermann, M., Pickering, A.S. (1996) Role of television in adult women's body dissatisfaction and drive for thinness. *International Journal of Eating Disorders, 20*:199-203.

Ting, W., Schultz, K., Cac, N. N., Peterson, M., & Walling, H. W. (2007) Tanning bed exposure increases the risk of malignant melanoma. *International Journal of Dermatology, 46*(12):1253-1257.

Tones, B.K. and Tilford, S. (1994) *Health Education: Effectiveness, Efficiency and Equity*. 2nd edition. London: Chapman and Hall.

Tryggvadóttir, L., Gislum, M., Hakulinen, T., Klint, A., Engholm, G., Storm, H. H., Bray, F. (2010) Trends in the survival of patients diagnosed with malignant melanoma of the skin in the Nordic countries 1964–2003 followed up to the end of 2006. *Acta Oncologica*, 49: 665-72.

Turrisi, R., Mastroleo, N.R., Stapleton, J., Mallett, K. (2008) A comparison of 2 brief intervention approaches to reduce indoor tanning behavior in young women who indoor tan very frequently. *Arch Dermatol* ;144: 1521-4.

Turner, R. J., Walshaw, D., Diffey, B.L., Farr, P.M. (2000) A controlled study of ultraviolet A sunbed treatment of psoriasis. *British Journal of Dermatology*, 143: 957-63.

Vajdic, C. M., Krickler, A., Giblin, M., Mckenzie, J., Aitkins, J. F., Giles, G. G., Armstrong, B. K. (2004) Artificial Ultraviolet Radiation and Ocular Melanoma in Australia. *International Journal Cancer*, Vol 112: 896–900.

Valentine, G. (2005) 'Tell me about . . . ': Using interviews as a research methodology. In R. Flowerdew & D. Martin (Eds.), *Methods in Human Geography a Guide for Students Doing Research Projects*, 2nd ed., (pp. 110–127). Harlow: Pearson Education.

Van Der Rhee, H., Coebergh, J. W., de Vries, E. (2009) Sunlight, vitamin D and the prevention of cancer: a systematic review of epidemiological studies. *European Journal Cancer Prevention*, Vol 49(6):1422-1436.

Van Maanen, J. (1996). *Ethnography*. In: A. Kuper and J. Kuper (eds.) *The Social Science Encyclopedia*, 2nd ed., pages 263-265. London: Routledge.

Van Manen, M. (1990) *Researching Lived Experiences: Human Science for an Action Sensitive Pedagogy*. State University of New York Press, London, Ontario.

Van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy* (2nd Ed.). London, Canada: The Althouse Press.

Veierod, M. B., Weiderpass, E., Thorn, M., Hansson, J., Lund, E., Armstrong, B., Odami, H. O. (2003) A prospective study of pigmentation, sun exposure, and risk of cutaneous malignant melanoma in women. *Journal of the National Cancer Institute*, 95(20):1530-1538.

Vieno A et al. (2004) School climate and well-being in early adolescence: a comprehensive model. *European Journal of Social Psychology*, 2:219–237.

Vereecken, C.A et al. (2005) The relative influence of individual and contextual socio-economic status on consumption of fruit and soft drinks among adolescents in Europe. *European Journal of Public Health*, 15(3):224–232.

Vereecken, C.A et al. (2009) Breakfast consumption and its socio-demographic and lifestyle correlates in schoolchildren in 41 countries participating in the HBSC study. *International Journal of Public Health*, 54(Suppl. 2):180–190.

Viner, R., Barker, M. (2005) Young people's health: the need for action. *British Medical Journal*; vol 330: 901-903.

Viner, R.M., Haines, M.M., Head, J.A, et al. (2006) Variations in associations of health risk behaviours among ethnic minority early adolescents. *Journal Adolescent Health*, 38(1): 55.

Viner, R.M., Ozer, E.M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., Currie, C. (2012) Adolescence and the social determinants of health. *Lancet*, 28; 379 (9826): 1641-52.

Vogt Yuan, A.S. (2010) Body Perceptions, Weight Control Behavior, and Changes in Adolescents' Psychological Well-Being Over Time: A Longitudinal Examination of Gender. *Journal Youth Adolescence*, 39:927-939.

Wadsworth, M.E. (1997) Health inequalities in the life course perspective. *Social Science & Medicine*, 44: 850-869.

Wainwright, D. (1997) *Can sociological research be qualitative, critical and valid?* Qual. Rep. 3(2), retrieved, February 29th 2012, from <http://www.nova.edu/ssss/QR/QR3-2/wain.html>

Walsh, A., Harris, S., Botwell, N., Verne, J. (2009) *Sunbed outlets and area deprivation in the UK*. Cancer Intelligence Service, The South West Public Health Observatory: 1-36

Walter, S. D., King, W. D., & Marrett, L. D. (1999) Association of cutaneous malignant melanoma with intermittent exposure to ultraviolet radiation: Results of a case-control study in Ontario, Canada. *International Journal of Epidemiology*, 28(3): 418-427.

Walter, S. D., Marrett, L. D., From, L., Hertzman, C., Shannon, H. S., & Roy, P. (1990) The association of cutaneous malignant melanoma with the use of sunbeds and sunlamps. *American Journal of Epidemiology*, 131(2): 232-243.

Walters, B. L., & Kelley, T. M. (1987) Commercial tanning facilities: A new source of eye injury. *American Journal of Emergency Medicine*, Vol 5(5): 386-389.

Wang, S. Q., Setlow, R., Berwick, M., Polsky, D., Marghoob, A. A., Kopf, A. W., Bart, R. F. (2001) Ultraviolet A and melanoma: A review. *Journal of the American Academy of Dermatology*, 44(5): 837-846.

Waylen, A., Stallard, N., Stewart-Brown, S. (2008) Parenting and health in mid-childhood: a longitudinal study. *European Journal of Public Health*, 18(3):300–305.

Wardle, J., Jarvis, M.J., Steggle, N., Sutton, S., Williamson, S., Farrimond, H., Cartwright, M., Simon, A.E. (2003) Socioeconomic disparities in cancer-risk behaviors in adolescence: baseline results from the Health and Behaviour in Teenagers Study (Habits). *Preventive Medicine* 36: 721–730.

Warthan, M. M., Uchida, T., & Wagner, R. F.Jr. (2005) UV light tanning as a type of substance-related disorder. *Archives of Dermatology*, 141(8): 963-966.

Weare, K., Nind, M. (2011) Mental health promotion and problem prevention in schools: what does the evidence say? *Health Promot. Int.* 26 (1): i29-i69.

Welsh Cancer Intelligence and Surveillance Unit on request, April 2012. Similar data can be found here:

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=242&pid=59080>

Weatherburn, D., Lind, B (2001) *Delinquent- prone communities*. Cambridge Criminology Series. Cambridge University Press. UK.

Wehner, M.R., Shive, M. L., Chren, M. M., Han, J., Qureshi, A. A., Linos, E. (2012) Indoor tanning and non-melanoma skin cancer: systematic review and meta-analysis. *British Medical Journal*; 345, e5909: 1-9.

Wengraf, T. (2001) *Qualitative Research Interviewing*. London: Sage.

Wensing, M., Laurant, M., Hulscher, M., et al (2000) *Methods for identifying barriers and facilitators for implementation*. In *Changing Professional Practice: Theory and Practice of Clinical Guidelines Implementation* (eds T. Thorsen & M. Makela), pp. 119-131. *Copenhagen: Danish Institute for Health Services Research and Development*.

Westerdahl, J., Olsson, H., Masback, A., Ingvar, C., Jonsson, N., Brandt, L., Jonnson, P., Moller, t. (1994) Use of sunbeds or sunlamps and malignant melanoma in southern Sweden. *American Journal of Epidemiology*, 140(8): 691-699.

Westerdahl, J., Ingvar, C., Maåsbäck, A., Jonsson, N., & Olsson, H. (2000) Risk of cutaneous malignant melanoma in relation to use of sunbeds: Further evidence for UV-A carcinogenicity. *British Journal of Cancer*, 82(9): 1593-1599.

White,A.M.(2005).The changing adolescent brain. *Education Canada*.

Downloaded from www.cea-ace.ca/media

Wichstrøm, L. (1994) Predictors of Norwegian adolescents' sunbathing and use of sunscreen. *Health Psychology*, 13(5): 412-420.

Wilfond, B.S., Diekema, D.S. (2012) Engaging children in genomics research: decoding the meaning of assent in research. *Genetics in Medicine*, 14: 437-443.

Williams, G.C., McGregor, H.A., Sharp, D., Levesque, C., Kouides, R.W., Ryan, R.M., Deci, E.L. (2006) Testing a self-determination theory intervention for motivating tobacco cessation: Supporting autonomy and competence in a clinical trial. *Health Psychology*, Vol 25(1): 91-101.

Wilmschurst J. & MacKay A (1999) *The Fundamentals of Advertising*. Butterworth Heinemann

Willig, C. (2001) *Interpretative phenomenology. Introducing qualitative research into psychology. adventures in theory and method*. Milton Keynes. Bucks: Open University Press.

Wilson, L.M., Tang, E.A., Chander, G., Hutton, H.E., Odelola, O.A., Elf, J.L., Heckman-Stoddard, B.M., Bass, B.E., Little, E.A., Haberl, E.B., Apelberg, B.J. (2012) Impact of Tobacco Control Interventions on Smoking Initiation, Cessation, and Prevalence: A Systematic Review. *Journal of Environmental and Public Health, Issue 1: 1-36*.

Witte, K., Allen, M. (2000) A Meta-Analysis of Fear Appeals: Implications for Effective Public Health Campaigns. *Health Education Behaviour, vol. 27(5): 591-615*.

Woodward M et al. (2003) Contribution of contemporaneous risk factors to social inequality in coronary heart disease and all causes mortality. *Preventive Medicine, 36(5):561–568*.

World Health Organisation. (2001) *The second decade: improving adolescent health and development*. Geneva: World Health Organization.

World Health Organisation. (2003) *Artificial tanning sunbeds: Risk and guidance*. Geneva.

WHO (2008) Why gender and health? <http://www.who.int/gender>

Yanovitzky, I. (2005) Sensation seeking and adolescent drug use: the mediating role of association with deviant peers and pro-drug discussions. *Health Communication; 17(1): 67–89*.

Yin, L., Grandi, N., Raum, R., Haug, U., Ardnt, V., Brenner, H. (2009) Meta-analysis: longitudinal studies of serum vitamin D and colorectal cancer risk. *Alimentary pharmacology & therapeutics*, 30(2):113-125.

Young, J.C., Walker, R. (1998) Understanding students' indoor tanning practices and beliefs to reduce skin cancer risks. *American Journal Health Studies*, 14:120–126.

Young, A. R. (2004) Tanning devices-fast track to skin cancer? *Pigment Cell Research*, 17(1): 2-9.

Yuan, K., Qin, W., Wang, G., Zeng, F., Zhao, L., Yang, X., Liu, P., Liu, J., Sun, J., von Deenan, K.M., Gong, Q., Liu, Y., Tian, J. (2011) Microstructure Abnormalities in Adolescents with Internet Addiction Disorder, *PLoS ONE* 6(6): p 1-8.

Zambon A et al. (2006) Do welfare regimes mediate the effect of socioeconomic position on health in adolescence? A cross-national comparison in Europe, North America, and Israel. *International Journal of Health Services*, 36(2):309–329.

Zambon A et al. (2010) The contribution of club participation to adolescent health: evidence from six countries. *Journal of Epidemiology & Community Health*, 64(1):89–95.

Zanetti, R., Rosso, S., Faggiano, F., Roffino, R., Colonna, S., & Martina, G. (1988) A case-control study on cutaneous malignant melanoma in the province of Torino, Italy. [Etude Cas-Temoins Sur le Melanome de la Peau Dans la Province de Torino, Italie] *Revue d' Epidemiologie Et De Sante Publique*, 36(4-5): 309-317.

Zeller, S., Lazovich, D., Forster, J., & Widome, R. (2006) Do adolescent indoor tanners exhibit dependency? *Journal of the American Academy of Dermatology*, 54(4): 589-596.

Zhang, Y., von Deneen, K.M., Tian, J., Gold, M.S., Liu, Y. (2011) Food addiction and neuro-imaging. *Current Pharmaceutical Design*, 17 (12): 1149–57.

Zuckerman, L. (1994) *Behavioural expressions and biosocial basis of sensation seeking*. New York. Cambridge University Press.

Appendix 1. Head teacher letter inviting the school to participate in the research



Headteacher



Paul Mackenzie
Merseyside & Cheshire
Cancer Network



Dear [redacted]

My name is Paul Mackenzie I am a PhD student at the University of Liverpool. I am very interested in understanding why young people use sunbeds, often in a hazardous way. This may have serious health consequences. Sunbed use amongst young people is increasing especially for those aged 14- 16 years of age. Alarming, cases of Malignant Melanoma skin cancer are also rising year on year, and are now the 2nd most common cancer for people aged 15-34. We know that excessive ultraviolet light exposure can lead to the development of skin cancer in later years and I believe schools can support us to understand why young people participate in risk taking behaviour and how we can modify this.

I would like your support to conduct research with students in your school and I propose that this would work very well within your PHSE lessons. The main purpose of the research is to explore and understand why young people use sunbeds, what motivates and influences them to use them? These valuable insights will influence the development of a prevention strategy involving many stakeholders including, schools, health organisations, cancer charities, local authorities and the government. One of the key outcomes of a prevention strategy will be an interactive education tool about sun awareness and sunbed use which can be used within your school.

The title of my proposed research is:

“An exploration of the attitudes and risk taking behaviours amongst young people who are regular users of sunbeds and the development of a prevention strategy”.

The approach that I would like to take with the school is to use qualitative research. This would involve focus groups and indepth interviews. (Please see the description of the approach that I would like to take, (attached)).

Prior to the research I will have had an up to date CRB (Criminal records Bureau) check and will have completed a comprehensive ethics application under the review of the University of Liverpool Ethics Committee.

As a way of thanks for your school supporting this research I would like to offer a gesture to the school..... I would therefore like to offer £200 which I hope can support PHSE lessons. Could you please inform me of your approval. I will contact you to discuss the next steps once I have received this.

I hope you will support this research.

Yours sincerely, Paul Mackenzie

[Redacted signature]

Work email

Mobile [Redacted]

Work contact [Redacted]

Appendix 2. Consent form for focus group discussions

Consent form for focus group discussions

Title of Research Project: An exploration of attitudes and risk taking behaviours among young people who are regular users of sunbeds and the development of a prevention strategy.

Researcher(s): Paul Mackenzie

**Please
initial box**

1. I confirm that I have read and have understood the information sheet dated June 2010 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected.
3. I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.
4. I agree to take part in the above study.

Participant Name/ Student	Date	Signature
Name of Person taking consent Parent/ Guardian/ Ward	Date	Signature
Researcher Paul Mackenzie	Date	Signature

The contact details of lead Researcher (Principal Investigator) is:

Professor Margaret Whitehead
Head of Division
 Division of Public Health
 3rd Floor Whelan Building
 Quadrangle
 Brownlow Hill
 Liverpool
 L69 3GB
 T 0151 794 5280/5576
 F 0151 794 5588
 E mmw@liverpool.ac.uk
 www.liv.ac.uk

Appendix 3. Participant information sheet guidelines focus group discussions



Participant information sheet guidelines focus group discussions

Recommended sections to include in your Information sheet

1. Title of Study

An exploration of attitudes and risk taking behaviours among young people who are regular users of sunbeds and the development of a prevention strategy.

(In other words I would like to understand why you may use a sunbed or not)

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends, relatives and GP if you wish. We would like to stress that you do not have to accept this invitation and should only agree to take part if you want to.

Thank you for reading this.

2. What is the purpose of the study?

My name is Paul Mackenzie; I am coming to your school and I would really like to discuss with you what you think of sunbed use. I really want to understand why young people use sunbeds, what influences them to use them and how they feel about the subject.

3. Why have I been chosen to take part?

I am asking 14 to 16 year olds what they think about sunbed use. In the focus group discussions there will be about 7 other students the same age as your self. I will be repeating similar interviews in 5 Liverpool schools 2 groups per school.

4. Do I have to take part?

You do not have to take part if you do not want to, that is fine. You are also free to stop being involved at anytime without giving a reason and this will also be okay. Your decision will be accepted and you will not be disadvantaged in any way.

5. What will happen if I take part?

For the focus group discussions I will be inviting around 8 young people to discuss sunbed use this will take about an hour in school.

Two researchers will help guide the discussions this will be (Paul Mackenzie and Maureen Sayer)

With your approval I would like to record our conversations with an audio recorder as this helps me to listen back carefully to what you have said, but don't worry, names will be removed so that nobody can be identified. Audio recordings will be kept for about a year following the publication of the research, in case there are any questions about the data. I will make sure that you get a copy of the results.

My role

1. To make you all feel comfortable and able to contribute.
2. To ask questions so that we can discuss the different issues together.
3. To listen to you and record our conversation.
4. To listen back and understand what has been said by you.
5. To feedback the results of the research to you.

Your role

1. To listen to my questions and prompts and feel able to discuss the issues with the group.
2. To contribute to discussions and give your honest answers or opinions.
3. To involve other people in the group.
4. To feel safe within the group and agree not to share personal stories with other people.

If there are things that you have not had chance to talk about you can fill a comment sheet and send this to me in a pre paid envelope

6. Expenses and / or payments

I hope you agree to get involved in the group discussions. As a gesture of thanks for your time I would like to offer you each a £5 gift voucher.

7. Are there any risks in taking part?

There is unlikely to be any risk for young people participating in this research. However if any participant becomes upset in anyway they would not be expected to continue and the lead researcher (Principal researcher) would be notified straight away.

8. Are there any benefits in taking part?

The research will provide an opportunity for young people to express their feelings about this subject.

9. What if I am unhappy or if there is a problem?

"If you are unhappy, or if there is a problem, please feel free to let us know by contacting [Principal Investigator Professor Margaret Whitehead on 0151 794 5280 and we will try to help. If you remain unhappy or have a complaint which you feel you cannot come to us with then you should contact the Research Governance Officer on 0151 794 8290 (ethics@liv.ac.uk). When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researcher(s) involved, and the details of the complaint you wish to make."

10. Will my participation be kept confidential?

The research data will be stored securely and will be anonymised, this will mean that no names will be used on the data and instead a code will be used. The data will be used to

enable me to analyse the findings but this will only be accessed by me as the researcher. The data will be stored for one year following publication of the research.

11. Will my taking part be covered by an insurance scheme?

This research is covered by a University insurance scheme.

12. What will happen to the results of the study?

Following completion of the research the results will be made available to the school. The results will be published but participants will not be able to be identified.

13. What will happen if I want to stop taking part?

If you want to stop taking part in the research you can do this at anytime, without explanation. Results up to the period of withdrawal may be used, if you are happy for this to be done. Otherwise you may request that they are destroyed and no further use is made of them.

14. Who can I contact if I have further questions?

Professor Margaret Whitehead
WH Duncan Professor of Public Health, Population, Community and Behavioral
Sciences
University of Liverpool
Whelan Building, Quadrangle,
Brownlow Hill,
L69 3GB
mmw@liverpool.ac.uk
0151 794 5280

15. Criminal Records Bureau check (CRB)

The researchers involved in this research have completed a Criminal Records Bureau check and research participants and the school may request evidence of the Disclosure

Appendix 4. Consent form for in-depth one-to-one interviews



Consent form for in depth one-to-one interviews

Title of Research Project: An exploration of attitudes and risk taking behaviours among young people who are regular users of sunbeds and the development of a prevention strategy.

Researcher(s): Paul Mackenzie

**Please
initial box**

- | | |
|--|--------------------------|
| 1. I confirm that I have read and have understood the information sheet dated June 2010 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. | <input type="checkbox"/> |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. | <input type="checkbox"/> |
| 3. I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish. | <input type="checkbox"/> |
| 4. I agree to take part in the above study. | <input type="checkbox"/> |

Participant Name/ Student	Date	Signature
Name of Person taking consent	Date	Signature
Parent/ Guardian/ Ward	Date	Signature
Paul Mackenzie Researcher	Date	Signature

The contact details of lead Researcher (Principal Investigator) is:

Professor Margaret Whitehead
Head of Division
 Division of Public Health
 3rd Floor Whelan Building
 Quadrangle, Brownlow Hill
 Liverpool. L69 3GB
 T 0151 794 5280/5576
 F 0151 794 5588
 E mmw@liverpool.ac.uk
www.liv.ac.uk

Appendix 5. Participant information sheet guidelines in-depth one-to-one discussions



Participant Information Sheet Guidelines In-depth one-to-one discussions

1. Title of Study

An exploration of attitudes and risk taking behaviours among young people who are regular users of sunbeds and the development of a prevention strategy.

(In other words I would like to understand why you may use a sunbed or not)

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends, relatives and GP if you wish. We would like to stress that you do not have to accept this invitation and should only agree to take part if you want to.

Thank you for reading this.

2. What is the purpose of the study?

My name is Paul Mackenzie; I am coming to your school and I would really like to discuss with you what you think of sunbed use. I really want to understand why young people use sunbeds, what influences them to use them and how they feel about the subject.

3. Why have I been chosen to take part?

I am asking 14 to 16 year olds who use sunbeds more than 20 times a year, what they think about sunbed use, in the one to one discussions. I will be interviewing about 30 young people from 5 Liverpool schools

4. Do I have to take part?

You do not have to take part if you do not want to, that is fine. You are also free to stop being involved at anytime without giving a reason and this will also be okay. Your decision will be accepted and you will not be disadvantaged in any way.

5. What will happen if I take part?

For the in depth one to one discussions we will spend about 30 minutes in school discussing what you think about sunbed use. I will be the only researcher involved in the discussions.

With your approval I would like to record our conversations with an audio recorder as this helps me to listen back carefully to what you have said, but don't worry, you will not be able to be identified.

Audio recordings will be kept for about a year following the publication of the research, in case there are any questions about the data. I will make sure that you get a copy of the results.

My role

1. To make you all feel comfortable and able to contribute.
2. To ask questions so that we can discuss the different issues together.
3. To listen to you and record our conversation.
4. To listen back and understand what has been said by you.
5. To feedback the results of the research to you.

Your role

1. To listen to my questions and prompts and feel able to discuss the issues with me.
2. To give your honest answers or opinions.

6. Expenses and / or payments

I hope you agree to get involved in the in depth interview. As a gesture of thanks for your time I would like to offer you each a £10 gift voucher.

7. Are there any risks in taking part?

There is unlikely to be any risk for young people participating in this research. However if any participant becomes upset in any way they would not be expected to continue and the lead researcher (Principal researcher) would be notified straight away.

8. Are there any benefits in taking part?

The research will provide an opportunity for young people to express their feelings about this subject.

9. What if I am unhappy or if there is a problem?

“If you are unhappy, or if there is a problem, please feel free to let us know by contacting [Principal Investigator Professor Margaret Whitehead on 0151 794 5280 and we will try to help. If you remain unhappy or have a complaint which you feel you cannot come to us with then you should contact the Research Governance Officer on 0151 794 8290 (ethics@liv.ac.uk). When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researcher(s) involved, and the details of the complaint you wish to make.”

10. Will my participation be kept confidential?

The research data will be stored securely and will be anonymised, this will mean that no names will be used on the data and instead a code will be used. The data will be used to enable me to analyse the findings but this will only be accessed by me as the researcher. The data will be stored for one year following publication of the research.

11. Will my taking part be covered by an insurance scheme?

This research is covered by a University insurance scheme.

12. What will happen to the results of the study?

Following completion of the research the results will be made available to the school. The results will be published but participants will not be able to be identified.

13. What will happen if I want to stop taking part?

If you want to stop taking part in the research you can do this at anytime, without explanation. Results up to the period of withdrawal may be used, if you are happy for this to be done. Otherwise you may request that they are destroyed and no further use is made of them.

14. Who can I contact if I have further questions?

Professor Margaret Whitehead
WH Duncan Professor of Public Health, Population, Community and Behavioral
Sciences
University of Liverpool
Whelan Building, Quadrangle,
Brownlow Hill,
L69 3GB
mmw@liverpool.ac.uk
0151 794 5280

15. Criminal Records Bureau check (CRB)

The researchers involved in this research have completed a Criminal Records Bureau check and research participants and the school may request evidence of the Disclosure

Appendix 6. Information and consent form for parents for young people involved in one-to-one interviews



Sunbeds

Information and consent form for parents for young people involved in the one to one interviews

Dear Parent/ Guardian,

My name is Paul Mackenzie I am a PhD student at the University of Liverpool. I am very interested to understand why young people use sunbeds.

I would like your permission to discuss with your child why young people use sunbeds, what influences them and motivates them to use them and how they feel about sunbeds. We do not know enough about young people's views of sunbeds and I feel it is important to understand this subject better.

The title of my proposed research is: *"An exploration of the attitudes and risk taking behaviours amongst young people who are regular users of sunbeds and the development of a prevention strategy"*.

I have obtained ethical approval by the University of Liverpool Ethics Committee. I also have an up to date Criminal Records Bureau certificate.

Young people in the school will benefit from this research as the findings will inform important lesson plans when young people discuss issues about their health.

As a way of thanks I would like to provide the school with some funding to support school health and social care lessons. As a thank you to your child I would like to offer them a HMV voucher worth £10.

I hope you will support this research.

Yours sincerely,

Paul Mackenzie (Researcher)

----- ✂ -----

I give permission for(Student's name) Y.....(Form) to be involved in the research about sunbeds in the school.

Parent/Guardian Name.....Signature.....

Please return this slip to Mr(s).....

The contact details of lead Researcher (Principal Investigator) is:

Professor Margaret Whitehead
Head of Division
Division of Public Health^{3rd} Floor Whelan
Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB
T 0151 794 5280/5576
F 0151 794 5588
E mmw@liverpool.ac.uk

NO UNDER
16s
ALLOWED
IN THIS
SALON.

SCHOOL
CHILDREN
2 FOR 1
OFFER ON
SUNBED
SESSIONS

ALL OUR
SUNBEDS
NOW
RE-TUBED
FASTER
TANNING
GUARANTEED

ALL
SUNBEDS IN
THIS SALON
250 WATTS

DANGERS:
◆ SKIN CANCER
◆ SKIN AGING
◆ BURNING
◆ SKIN
PROBLEMS
◆ EYE
PROBLEMS

**Jordan (Katie
Price)**



**Nicola Girls
Aloud**



**Ronaldo
Footballer**



(In your parent's
shoes)
WHAT WOULD
YOU THINK IF
YOUR CHILD
WENT ON A
SUNBED?

Appendix 8. Interview guide: Questions for focus groups

Warm up exercise game	
<ul style="list-style-type: none"> Who do you see as a role model? What is it that you admire about this person/ people? Is there any person you would like to look like or are you happy with your self? <i>(This may be parents, family members, celebrities, sports icons)</i> What do we think of celebrities' skin? 	Show a picture of Jordan v Nicola (girls aloud) Madonna, Ronaldo <i>(Describe what you see)</i>
<ul style="list-style-type: none"> If you wanted to change anything about yourself to look different, what would you change? Describe how you feel about yourself as you are now? 	
<ul style="list-style-type: none"> Are you happy with your skin colour? What is your ideal skin tone/colour? Is it important to you to look tanned? Why? 	
<ul style="list-style-type: none"> Who uses sunbeds? Thoughts on sunbeds 	
<ul style="list-style-type: none"> Why do young people use a sun bed? Peer pressure/ parents/ celebrity influence 	Mood board
<ul style="list-style-type: none"> What sun beds are – the different types and where they are used? 	
<ul style="list-style-type: none"> How much is too much? How often is 'too often'? What happens if you over use? What are the dangers of using sun beds? 	Mood board pictures
<ul style="list-style-type: none"> What would you think if your child went on a sun bed? Would you encourage your child to use sun beds? Would you treat a girl different from a boy? Why? Would you be frightened for your child if they used sun beds frequently? If you knew they were using sun beds what would you say to them? Would you want to put a minimum age on the use of sun beds by young people, if so what age? 	Mood board
<ul style="list-style-type: none"> If we wanted to encourage young people to stop using sunbeds what would they respond to? 	How can we change behaviour

<ul style="list-style-type: none">• What form of message delivery do they respond to?• Discussion on image style – shock, humour, emotional, inspirational etc• How would they respond to interactive software?• Should information be available for parents / schools?• If so, in what format?• Where should they access it?	amongst young people
--	-------------------------

Appendix 9. Research guide. Questions for one-to-one interviews

<p>Who do you see as a role model? What is it that you admire about this person/ people? Is there any person you would like to look like or are you happy with your self?</p> <ul style="list-style-type: none"> ◆ <i>(This may be parents, family members, celebrities, sports icons)</i> 	<p>Show a picture of Jordan v Nicole (girls aloud) Madonna, Ronaldo <i>(Describe what you see)</i></p>
<p>If you wanted to change anything about yourself to look different, what would you change? Describe how you feel about yourself as you are now?</p>	
<p>How would you describe your skin tone? Are you happy with this colour? What is your ideal skin tone/colour?</p>	
<p>Why do you feel you need to have a tanned look? How does having a tan make you feel?</p>	
<p>What do you think boys/ girls may think about the way you look? Is this important to you? Why?</p>	
<p>Have you ever used or considered using false tan? Describe your experience?</p>	
<p>Describe the first time you used a sunbed. What prompted you to use them? Can you recall what you were thinking and feeling?</p> <ul style="list-style-type: none"> ◆ How long did you go on for? ◆ Were you alone? ◆ Where protective goggles available? Did you use them 	
<p>How does using a sunbed make you feel when you use them now?</p>	
<p>How do you think it makes you look?</p>	
<p>How do you think other people/ friends feel about you using a sunbed? Is what they think important to you? Why?</p>	
<p>How do you think you would feel if you didn't use the sunbed?</p>	
<p>How do you feel in yourself if you don't get chance to use the sunbed or miss a session?</p>	
<p>Are you aware of any of the dangers of using a sunbed? How do you feel about this? Have you ever burnt</p>	
<p>What makes you still use them if you know the dangers?</p>	
<p>Do you think you will continue to use sunbeds?</p>	

Would you find it difficult to stop using sunbeds?	
What do your parents think about you using a sunbed?	
How do you pay for your sunbed sessions?	
Can you tell me how easy it is to access the sunbeds?	
Have you found any difficulties accessing sunbeds? Have you been asked your age?	
If the government banned children using sunbeds how would you feel about this?	
What would stop you using a sunbed? What would work?	

Appendix 10. Development of the skin cancer prevention strategy.

One of the objectives of this thesis was to support the development of a local skin cancer prevention strategy that would incorporate actions to prevent hazardous sunbed use amongst young people in Liverpool. In this appendix I present the process and outcome of the development work on such a strategy. It describes how the findings from the qualitative study with young people were used to inform the development of this strategy, including in setting the objectives, reviewing the evidence and agreeing actions. The appendix also describes the process of engaging and influencing partner organisations and the implications of resulting strategy for future policy.

Engaging partner organisations

Convincing stakeholders to agree to support the strategy was not an easy process. Firstly I had to convince my employing organisation, the Cancer Network, to agree that a skin cancer prevention strategy should be prioritised over other competing cancer prevention initiatives. The case for developing alternative tumour specific cancer prevention strategies could have been equally justified. For example, lung cancer has the highest rate of cancer mortality in the world and is threefold that of the next leading causes of death due to cancer, these being, colon, breast and prostate cancer (Hirsch and Lippman, 2005). It was therefore necessary for me to build a case for a skin cancer strategy. The emphasis was placed upon prevention rather than early diagnosis and as such the strategy was more likely to influence overall skin cancer incidence rather than poor mortality rates, which are more likely to be associated with late diagnosis and for less effective treatment.

I discussed the rationale for a skin cancer prevention strategy with the director of public health and the cancer director, arguing that although there may be higher mortality rates in other types of cancers, there are other contributing factors that would strengthen the rationale for developing a local skin cancer prevention strategy. The following rationale was proposed and was derived from my

literature review and from research findings. Firstly, skin cancer incidence is increasing year on year and has quadrupled since 1970s (CRUK, 2009). The results of an age cohort model to predict the future incidence of malignant melanoma in the UK suggested that there may not be a downturn in the rates of malignant melanoma even in light of intervention strategies. It may take 30 years or more before the incidence rate plateaus and the predicted age-standardized rate of melanoma in the following three decades may be around twice that presently observed (Diffey, 2004). I placed an emphasis upon skin cancer being largely preventable and on the fact that there have been too few campaigns about being safer in the sun, or about the dangers associated with excessive UV exposure. The real hook in convincing the director of public health and the cancer director to support the strategy was, however, the evidence in the literature of excessive sunbed use by young people in Liverpool. The number of young people using sunbeds hazardously emerged a specific local problem in that Liverpool had a significantly higher number of sunbed users aged 15-17 than other cities in a CRUK sponsored national prevalence study in England, with nearly 45% having used sunbeds (Thompson et al., 2010). I also highlighted that a team of world experts within the International Agency for Research on Cancer (IARC) had formerly categorised artificial UV as carcinogenic to humans (El Ghissassi et al., 2009); and that there have been very few interventions to help understanding of why young people use sunbeds or focusing on preventing sunbed use by modifying behaviours. The introduction of a ban in England on under-18s using sunbeds in commercial premises added further weight to the argument that organisations should be supporting a reduction in hazardous sunbed use. The final rationale put forward was the expectation for directors of public health to deliver the National Institute for Health and Clinical Excellence (NICE, 2011) guidance, "Skin cancer prevention: information, resources and environmental changes. This guidance states,

"The guidance is for NHS and other commissioners, managers and practitioners who have a direct or indirect role in, and responsibility for, preventing skin

cancer. This includes for example, GPs, local authority planners, pharmacists, practice nurses, public health practitioners, school nurses and skin cancer specialists (such as clinical nurse specialists [skin cancer], dermatologists and skin cancer surgeons). It also includes those involved in, or responsible for, employee health and wellbeing. NICE (2011)”.

The main guidance focusses on information provision, developing awareness campaigns, information delivery, protecting young people, children and outdoor workers and providing shade. The NICE guidance however, excludes any guidance on the management, restriction, or promotion of best practice or risk mitigation relating to artificial UV exposure, despite increasing evidence of the carcinogenic effect of artificial UV and the evidence that excessive sunbed use by young people was occurring. This evidence was enough to gain the support from the shadow Health and Wellbeing Board (HWB) in Liverpool to develop the strategy.

The NHS Outcomes Framework (DH, 2011) focussed on the delivery of five key domains of health, Domain 1- Preventing people from dying prematurely, Domain 2- Enhancing quality of life for people with long term conditions, Domain 3- Helping people recover from episodes of ill health or following injury, Domain 4- Ensuring people have a positive experience of care and Domain 5- Treating and caring for people in a safe environment and protecting them from avoidable harm. Disease prevention loosely features within this framework. Whilst the prevention strategy involves all stakeholders the prevention remit is now embedded within the public health strategic documents. The Public Health Outcomes Framework, improving outcomes and supporting transparency (DH, 2012). Domain 4, explicitly focusses on public health care supported by Public Health England (PHE) and involves preventing premature mortality (the objective being to reduce the numbers of people living with preventable ill health and people dying prematurely, while reducing the gap between communities). This policy framework provided and added reason to take forward the strategy

within Public Health, via the Liverpool shadow HWB. Partners such as Clinical Commissioning Groups (CCGs) are accountable for developing Joint Strategic Needs Assessments (JSNAs) that meet the health and social care needs of the local population for which they serve. The Directors of Public Health in Liverpool had a key role in providing leadership to deliver an outcome focussed prevention campaign. The shadow HWB was the most logical place to start to begin conversations around the need to reduce skin cancer incidence as well as reducing high risk behaviours such as potentially hazardous use of sunbeds.

The next step was to meet with the shadow HWB in order to persuade them to agree to prioritise skin cancer prevention. As well as targeting increasing skin cancer incidence, high use of sunbeds and the mandate to deliver NICE skin cancer prevention guidance, there was also an opportunity to collaborate more closely on skin cancer prevention in the city of Liverpool through a joint strategy. The establishment of HWBs albeit in shadow form, and the emerging new Clinical Commissioning Groups, although these were not authorised until April 2013, paved the way for a real opportunity for the new organizations to test their collaborative roles and to build stronger relationships. It was to be the shadow HWB that received the formal proposal to engage the city of Liverpool in developing a skin cancer prevention strategy. I presented this proposal to the steering group, and the rationale included evidence gathered and analysed within my literature review. During the verbal presentation I was able to draw on my knowledge and the evidence base to convince the steering group to formally accept the proposal despite the challenge by medical representatives as to the rationale for choosing skin cancer prevention. The clinicians were concerned that only a relatively small number of skin cancer cases result in mortality, in contrast to lung or stomach cancer, for example. I was able to satisfy them that skin cancer was an important priority to adopt, by placing greater emphasis upon prevention and therefore the long term burden of cancer incidence and high use of sunbeds. The proposal was successful in gathering support and the development of a skin cancer prevention strategy was authorised. The skin

cancer prevention strategy thus became one of three cancer prevention priorities for the shadow HWB. The other priorities included reducing smoking rates and increasing Human Papilloma Virus (HPV) vaccination for young girls. To some extent the development of the strategy also became a test for the emerging functions of the newly authorised HWB and associated partners as it was being formally established. This was to become the first collective piece of strategic work within the new HWB.

There were several other barriers during the early stages when the strategy was being planned. A change in government provided major challenges with massive reconfiguration of the NHS, substantial cuts to NHS budgets, redundancies and changes to personnel and organisations, threatening the development of the skin cancer prevention strategy. However, I was able to convince the emerging CCG, and the HWB to continue to support the strategy. This initiative provided a moral boost for the HWB and CCG as they were able to present a positive step towards collaborative action.

Local councillors within the HWB have a key role to play in the new NHS and they wanted to ensure that their constituent population receive the best care and services. Moreover; they were politically astute and the sunbed agenda offered a perfect opportunity for health and social care to collaborate in such a way that they could influence a change together. The city council were very keen to pursue a set of agreed regulations around sunbeds that would be enforced via a local act of parliament. This is not the first time that Liverpool has been involved in lobbying for tighter regulations. Liverpool was very active in lobbying for a smoking ban across Cheshire and Merseyside in 2004 and was the first city in England to ban smoking in public places. It was local councillors that were able to affect this change. Legislative changes on a national level occurred in 2007 as a consequence of the *“Health Act (2006) - a ban on smoking in public places”*, coming into effect. The introduction of sunbed legislation in response to

the lack of regulation, and a focus on public health prevention, has been a key motivator for councillors to support the strategy.

The strategy

This two-year skin cancer prevention strategy was developed in partnership with Cheshire and Merseyside Clinical Network, Liverpool City Council, Liverpool Clinical Commissioning Group, Liverpool Community Health, Chartered Institute Environmental Health (CIEH), Cancer Research UK (CRUK) and other local and national partners.

The aims of the strategy:

- To reduce the number avoidable deaths and new cases of skin cancer in Liverpool through education, policy, legislation, awareness raising and behaviour change.
- To deliver the key recommendations in the NICE skin cancer prevention guidance and to build on the 2010 government legislation banning under-18s from using sunbeds.

The objectives:

1. Identify groups of the population most exposed to UV rays by solar and artificial means and gain insights into their knowledge, attitudes, motivations and barriers to changing their behaviour.
2. Raise awareness of the dangers of exposure to harmful UV rays via solar and artificial means and how to protect them.
3. Challenge attitudes and beliefs which are leading to risky behaviours and encourage people to protect themselves from solar and artificial UV radiation.
4. Influence better compliance amongst the sunbed salon industry, in line with national policy, legislation and European standards to reduce artificial UV exposure.

5. Influence employers and schools to adopt sun safe policies (Including shade provision) and good practices to protect employees and children from over exposure to UV rays and to promote the importance of early detection.
6. Raise awareness of signs and symptoms of skin cancer and the importance of presenting early to the GP.

These objectives will be achieved by:

- Developing a behaviour-change plan that helps us understand, address and influence behaviours at an individual, social and environmental level.
- Working collaboratively with partners to embed skin cancer messages and interventions into existing programmes and services.
- Educate clinicians about the skin cancer strategy so that they can support it and respond appropriately to patients and the public.

Methods for developing the strategy

Skin cancer prevention workshop

Following shadow HWB endorsement to develop the strategy the first step was to organise a stakeholder event. This would serve to bring together a variety of organisations from NHS health and social care, local authority, environmental health, and third sector organisations. I felt that it was important to provide a local emphasis but with national endorsement. I arranged a suitable venue and date and I decided who would be invited to deliver the keynote speech. I made a trip to London and met with the Head of Policy at the CIEH and The Head of Policy, CRUK. CRUK has a strong mandate around preventing sunbed use and has lobbied hard in order to influence the sunbed ban on children under 18 years of age. They were very keen to support the first skin cancer prevention strategy in England following the authorisation of the new HWBs and the new public health body, Public Health England (PHE). The CIEH Head of Policy was very keen to support the event and wanted to support ways in which

environmental health could work more effectively locally within the context of such a strategy.

A small working group was established to begin to plan the event. It was incredibly important for me to bring a 'reality check' to this event and it was to be Georgia's story that would captivate the audience. Georgia was at the time a 19 year old young woman who had used sunbeds excessively for several years and had developed malignant melanoma. She gave a very passionate and frank personal testimony of her cancer treatment journey and this struck a chord with everyone present at the event.

The skin cancer prevention strategy event proved to be very successful and was met with a great deal of enthusiasm among delegates. Around sixty individuals attended the event and this included patients, public and professionals from a variety of organisations from within the city. The Associate Director of Public Health, (Liverpool Primary Care Trust) gave the opening presentation on the size of the problem within Liverpool and the implications of the NICE skin cancer prevention guidance. I provided him with the current facts from my literature review. CRUK provided an overview of CRUK policy on skin cancer prevention, as well as a summary of activity. A summary of the COMARE (Committee on Medical Aspects of Radiation in the Environment) report on sunbed use carried out by CRUK on behalf of the DH was outlined. CRUK were committed to support the development of a local skin cancer prevention strategy.

The nurse consultant for skin cancer, based in the Royal Liverpool and Broadgreen University Hospital presented a summary of the challenges faced by the dermatology service over the last decade and how the profiles of patient attendees had altered in recent years; with younger patients presenting with earlier skin problems and major increases in clinic activity, which had tripled. The nurse consultant introduced Georgia, a young patient recovering from malignant melanoma who had used sunbeds. The Head of Policy, CIEH was keynote speaker and presented a very powerful summary of the present political

position in the UK. It was clear from the presentation that England is lagging behind other constituent countries of the UK, in developing policy to protect sunbed users. Wales for example, is ensuring that all salon staff who supervise sunbed salons are deemed 'competent'. Northern Ireland is promoting training for salon staff. As the Associate Director for Health Inequalities (Merseyside & Cheshire Cancer Network) and a Health Promotion Specialist, (Liverpool Community Health) I presented the findings from local surveys on sunbed use amongst young people in Liverpool. This local work highlighted high sunbed use and high intention to use sunbeds by young people and was to be a precursor to the CRUK COMARE study. It was this local work in Liverpool that was highlighted and informed the National Cancer Czar Professor Mike Richards who subsequently included research on this issue in the national cancer policy document, the Cancer Reform Strategy (DH, 2007). This local work had also supported my application for my PhD studies. Councillor Roy Gladden, lead for cancer in Liverpool Council, summarised the need for us all to work together to develop and implement a good strategy across the city.

Interactive group work took place with delegates working together adding thoughts and ideas onto large posters. Four posters were developed covering the following themes, information, health protection, sunbeds and shade. These were enlarged to A1 size enabling delegates to add narrative to the posters. This was an iterative process, whereby delegates moved from poster to poster adding and refining thoughts and ideas until saturation was achieved. The following is an example of the sunbed poster.

Example of A1 size poster from the skin cancer prevention strategy workshop)

<p>Skin cancer: prevention using public information, sun protection resources and changes to the environment (NICE, 2011)</p>	<h2>SUNBEDS</h2>		<p>Section (E). What are the key actions for ensuring safer practice and improving compliance in relation to health and safety and the law? Timescales for delivery should be applied 30 days, 60 days, 90 days, 1 year. Who should lead these responsibilities?</p>
<p style="text-align: center;">Skin prevention strategy</p> <p>The recommendations focus on the following:</p> <ul style="list-style-type: none"> • Delivery of national mass-media campaigns and local information provision (including verbal advice and printed and visual material) (recommendation 1). • How to develop and evaluate information campaigns and interventions (recommendation 2). • The factual content of information (recommendation 3). • The tone of messages and how to tailor them for specific audiences (recommendation 4). • The workplace, to help reinforce recommendations 1 and 2, in particular, to protect children, young people and outdoor workers (recommendation 5). • Provision of shade as part of the design of new buildings (recommendation 6). 	<p>Section (B). How will we manage compliance with the sunbed regulations banning under 18s using artificial UV devices?</p>	<p>1.</p>	
<p>Section (A). How can we ensure that sunbed salons are complying with national guidelines on health and safety and information giving?</p>	<p>How</p>	<p>2.</p>	
<div style="border: 1px solid black; border-radius: 15px; padding: 5px;"> <p>Age</p> <p>Artificial UV equipment</p> <p>Environment</p> <p>Information</p> <p>Assessment</p> </div>	<p>Who</p>	<p>3.</p>	
	<p>Section (C). How will we ensure that young people and adults are aware of the dangers of sunbed use? Media/ education</p>	<p>4.</p>	
	<p>Section (D). How can we better understand and support people using sunbeds to alter or modify their behaviour?</p>	<p>5.</p>	
	<p>Other comments:</p>	<p>Other comments:</p>	
	<p>Liverpool skin cancer prevention strategy</p>	<p>Liverpool skin cancer prevention strategy</p>	

Posters were analysed after the workshop and below are a summary of the poster group work.

Information poster summary

1. Insights, young people 24-44yrs attitudes to sun safety and behaviour change
2. Campaigns Social marketing. Consistent, local format sustainable, evaluation, involves the media and celebrities, real cases studies? Utilise health checks specific messages.
 - a. Target groups- ?Antenatal, nursery, primary and secondary education
16-18yrs, 24-44yr, over 50s male, outdoor workers
 - b. Everton football skin cancer training
 - c. Every contact counts training
 - d. Social media

- e. Organisations signing up to good practice/ kite marking
- 3. Strong brand like slip , slap , slop to include understanding of UV message
- 4. Key partners Local and national CRUK
- 5. Funding for this activity

Health Protection poster summary

- 1. Partnerships with employers
- 2. Policy for outdoor workers/ Protective clothing package for outdoor workers/ shade. Police, fire, schools, Primary Care Trust, city council, Tool hire kit
- 3. Public health road show
- 4. Schools sun safe policy, shade, allowing hats and glasses and sun protection factor, encourage use before outdoor activity
- 5. Engage trade union bodies/ HSE/ OFSTED

Sunbed poster summary

- 1. Agree local authority byelaw
 - a. Information in sunbed use risks
 - b. No advertising about health benefits looking at premises and sports facilities and report false advertising
 - c. Align to Welsh Assembly recommendations
- 2. Environmental Health, neighbourhood officers to enforce existing law
 - a. Develop a Local Authority plan
 - b. Mystery shopper
 - c. Dose emission testing current specification against European Union and HSE standards
 - d. Young parliament contacts
 - e. Support for young people under 18 with addiction and dysmorphia-pathways
- 3. Social media, Facebook etc. campaigns
- 4. Training for salon staff? kite training / GP awareness
- 5. Lobbying for additional regulation and licensing
- 6. Working towards light touch approach to regulation with Liverpool salons

Shade poster summary

1. Work with planning authority, architects in the city to include consideration of shade provision within each build and within local planning- linked to green space
2. Shaded areas in cafes, schools as part of policy i.e. times of the day (Benchmark schools with shaded areas- 12 new schools), bus stops
3. Natural shade in park areas and within events in the city
4. Building designers encouraged to have UV filters glass
5. Shade could be made with solar panel synergy with energy

Skin cancer prevention strategy development group meetings

Following the event we asked for volunteers to join a skin cancer prevention strategy development group. There was a very good response and I asked the Assistant Cabinet Member for Adult Health and Social Care and Cancer Champion for Liverpool City Council to act as chair for the group. The Chair was thus strategically placed within both public health and the city council. Terms of reference were established for the skin cancer prevention development group. Broad membership included CCG, HWB, public health, environmental health, University of Liverpool, community outreach services, disability link officers, neighbourhood managers, GPs, a social marketing insight team, health promotion representatives, members of the public and the city council. The group agreed to meet every six weeks initially, with a smaller sub-group meeting every four weeks in order to complete themed sections. It was difficult to theme the groups because the agenda was multifaceted. We eventually decided upon three groups to work on the strategy detail. This included an outdoor worker group, a sunbed user group and a children's group. However, each of the groups also considered the relevance of educational opportunities, information and shade provision generically. The table below shows the timeline for the development of the strategy.

Skin cancer prevention strategy timeline



Implementation of the resulting strategy

The strategy was used to support the objective around reducing hazardous sunbed use. There were several priority areas of work identified with the high level action plan. Detailed action was taken forward into the implementation phase in July 2013, with the establishment of a skin cancer prevention implementation group. The role of the implementation group was to ensure that the actions set out in the strategy were being achieved; the group reported directly to the HWB.

During the analysis of the qualitative study in this thesis, several emerging themes reoccurred during the interviews and focus groups. These became extremely relevant and important in informing the strategy action plan. These

themes included emerging findings around reported poor practice by sunbed establishments, hazardous use of sunbeds by young people, inadequate sunbed regulations and the need for good lobbying at a national level, more effective awareness and education for young people about the dangers of sunbed use, the need for a sunbed campaign which focussed on maternal influences, as there was emerging evidence from my data of direct and indirect maternal influence as a reason why young people started to use sunbeds or continued to use them. Another theme that emerged was that some participants reported that they were addicted to sunbeds. Clinicians in the strategy development group were unaware of the possibility of such addiction and as a consequence there had been little provision for psychological support pathways for young people who were dependent on sunbeds or addicted to sunbed use.

A high level action plan was developed for the various elements of the strategy. The table below shows the sunbed specific parts. Further detailed actions have been developed by the skin cancer prevention strategy implementation group which superseded the development group.

Sunbed actions from the skin cancer prevention strategy

WORKSTREAM 2: Sunbeds			
OBJECTIVES	TASK	TIMESCALES	RESPONSIBILITY
To reduce the availability of sunbeds to minors through enforcement	Lobbying and regulation to prohibit the use of sunbeds.	May 2013 – Mar 2015.	LCC: Environmental Health, LCC: MPs.
To raise awareness of the legal duties of sunbed operators	Advise and educate operators of sunbed shops about their legal obligations to prevent minors from using sunbeds and to enforce the requirements of the law.	May 2013 – Mar 2015.	Environmental Health, Local Authority enforcement officers.
To understand the motivations for sunbed use amongst young girls and to what extent mothers influence their daughters sunbed use	Insight research to explore why teenage girls use sunbeds and the role of maternal influence	November 2012.	LCC: Public Health – Insight and Social Marketing.
	Behaviour change campaign to reduce sunbed use amongst teenage girls.	May 2013 – Mar 2015.	LCC: Public Health – Insight and Social Marketing, LCH: Health Promotion.

To ensure adequate psychological support	Ensure young people addicted to sunbeds receive adequate psychological support.	September 2013	CCG.
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Sunbed regulations and lobbying

Plans to influence regulations and legislation formed a major part of the skin cancer prevention strategy. Prior to the in-depth interviews and focus groups in my PhD research there were no legal restrictions on young people accessing or using sunbeds. In April 2010 the English government introduced regulations that banned under-18 year olds from using sunbeds, or hiring of sunbeds and they were also subject to restrictions in certain areas within salons. In chapter 6 I discussed the variances and limitations of England’s sunbed legislation and presented the argument that they fell short of those of the other constituent countries in the UK. To recap, in Scotland sunbed use needs to be supervised within salons and in addition the provision of information for any user of a sunbed should be made available. In Wales any use of sunbeds in commercial properties should be supervised by a “competent supervisor”; and in Northern Ireland sunbed staff now need to be trained before supervising sunbed premises. The (NICE, 2011) guidance, “Skin cancer prevention: information, resources and environmental changes” as previously mentioned omitted any reference to artificial UV guidance. The strategy group added a further recommendation to the six recommendations within the guidance.

The main recommendations were:

Recommendation (1) Information provision: delivery

Recommendation (2) Information provision: developing national campaigns and local activities

Recommendation (3) Information provision: message content

Recommendation (4) Information provision: tailoring the message

Recommendation (5) Protecting children, young people and outdoor workers

Recommendation (6) Providing shade

An additional recommendation was put forward to the HWB by the skin cancer prevention strategy group these recommendations were subdivided into the following points.

Recommendation (7) Develop guidance and local regulations to reduce the public's exposure to artificial UV rays.

- Support Liverpool lobbying for stronger sunbed regulations.
- Scope the number of establishments in Liverpool delivering artificial tanning.
- Audit the specification of tanning devices and their emissions against national and European guidelines.
- Develop plans that ensure compliance with banning under-18s from using sunbeds or accessing areas that are restricted.
- Ensure a code of practice is implemented and adhered to.
- Raise the public's awareness of the dangers of sunbed use.

Health and safety and environmental health interventions prior to the introduction of the legislation have been largely ineffective. A recent qualitative study by CRUK explored the views of regular sunbed users aged 15-17 years of age and found that young people were likely to receive sunbed legislation negatively and would circumvent strategies to limit use, including home sunbed use. However, the research also showed that young people may be receptive to harm reduction methods (Lake et al., 2013).

The introduction of the legislation has provided limited powers for environmental health officers to prosecute salon owners if they do not comply with the sunbed regulations. The current Sunbeds (Regulation) Act 2010 which came into force on 8th April 2011 aimed to prevent under-18s using sunbeds in commercial premises. The act imposes a duty on anyone involved in conducting a sunbed business to ensure that no person under 18 years of age uses a sunbed, is offered the use of a sunbed or is present in a restricted zone. This duty

excludes home salon use. Designated local authority officers can inspect any commercial sunbed premises reactively if they have received a complaint or 'proactively' for example, in a compliance visit to check awareness of compliance with the Act. Authorised officers do not need to give prior notice of inspection.

The development of a Liverpool skin cancer prevention strategy had a strong focus on sunbed practice and provided a unique opportunity to influence local and national regulation and policy. The newly established HWBs provided a good platform to engage not only clinicians but local MPs, city council workers such as, public health, environmental health, education and children's services. The strategy development group was chaired by the cancer champion for the Liverpool City Council and he was well placed to communicate with, influence and collaborate with local members of parliament, as well as interdepartmental organisations. The Director of Public Health is now orientated within the city council and this has resulted in a real synergy in efforts to seek tighter sunbed regulations. The skin prevention strategy group presented additional regulations for consideration within Liverpool City Council. These additional regulations were unanimously endorsed. It was agreed that Liverpool should lobby to introduce a local act of parliament which would improve the practice of sunbed salons and protect the citizens of Liverpool to over-exposure of artificial UV damage. A focus group was convened led by the senior executive members of the City Council. It was recognised that there needed to be sustained efforts to bring about regulatory changes as the strategy was being implemented. However, the City Council has shown great determination and enthusiasm in order to achieve these enhanced regulations. The regulations that have been proposed and accepted by Liverpool City Council are as follows:

1. The licensing of all establishments who have any sunbeds on their property;
2. The prohibition of the use, sale and hire of sunbeds to under 18's;
3. Operators to be fully trained;

4. Protective eye goggles to be provided;
5. The supervised use of sunbeds;
6. To display and give only prescribed health information to all users;
7. Assessment of skin type by trained operators before sun bed equipment is used

Proactively enforcing the existing legislation to reduce the prevalence of underage sunbed use will be challenging. The Public Protection Division of Liverpool City Council is responsible for enforcing the requirements of the Sunbeds (Regulation) Act 2010, which prohibits person's aged under-18 years of age from using sunbeds. Although the evidence suggests that the prevalence of under-age sunbed use is very high in Liverpool, Liverpool City Council receives a very low number of complaints about under-age sunbed use. This may be explained by the illicit nature of the trade. Given the very high prevalence of underage sunbed use and the low number of complaints about underage sunbed use received by the City Council, it is necessary to proactively intervene to reduce the availability of sunbeds to minors.

Within the actions specified in the prevention strategy, Liverpool City Council's Public Protection Division will carry out a programme of regulatory interventions to advise operators of sunbed premises of their legal responsibilities and will enforce the requirements of the law. These interventions will include advisory work, inspection of sunbed premises and test purchasing activities. Any regulatory activity needed will be carried out in accordance with the Council's enforcement policy and national legislation, particularly the Protection of Freedoms Act (2012). Within the Sunbeds (Regulation) Act 2010 the schedule to the legislation indicates that *"[a]n authorised officer may make such purchases and secure the provision of such services as the officer considers necessary for the purpose of proper exercise of the officer's functions under this Act"*. This would therefore allow authorised officers to utilise the services of a suitable person under the age of 18 trying to procure an 'offer' for the use of a sunbed.

During 2014, several test purchases will be carried out across the city. The findings from my research directly influenced the pursuit of these regulations. For example, evidence from young people discussed in chapter 6 highlighted that they were not using protective eyewear. They told me how salons often did not have protective goggles available and that they were rarely advised to wear them. Young people were also unaware of the dangers of not protecting the eyes. It may seem somewhat counter-intuitive to ensure that protective goggles are available if young people will be using sunbeds less; however, sunbed users of any age will benefit from this regulation. Prohibiting the sale and hire of sunbeds will also place a legal restriction on home sunbed use by making it explicit that parents allowing children to use sunbeds at home would be acting unlawfully. Of course this may not stop under age sunbed use in domestic premises, but it may act as a deterrent. Young people in the current research also described how they were not offered advice about the risks of sunbeds, skin type assessment or how to use sunbeds by salon staff. The commitment to provide adequate training for staff and ensure that they are 'competent supervisors' will also ensure that all sunbed users will benefit from the advice from better trained salon staff and that sunbed awareness is heightened.

A specific strategic focus on maternal influences

Chapter 5 presented evidence from some participants that mothers and older sisters had influenced their sunbed use directly or indirectly. Evidence from the literature is a little sparse but several researchers have emphasized the role of maternal influences. Baker et al. (2010), in a US survey of 227 females, discovered that 38% of participants went on sunbeds for the first time with their mothers. Styker et al. (2004), found that maternal modelling, monitoring and permissiveness provided a significant prediction of young people's tanning behaviour. The prevalence of sunbed use in the previous year was 30-55% for young people aged 12-18 years when their parent or caregiver also used sunbeds, (Cokkinides et al., 2002; Magee et al., 2007). Young people whose parents believed that a tan looked more attractive were significantly more likely

to have used a sunbed themselves (Lawson et al., 2012). The literature suggests that there is inadequate parental knowledge and awareness of the risks associated with sunbeds and highlights the need for enhanced parental education (Magee et al., 2007).

As part of the Liverpool skin cancer prevention strategy, research was commissioned to investigate further the reasons why teenage girls in particular in Liverpool continued to use sunbeds despite being under-age and despite highly publicised information about the dangers of sunbed use. In chapter 5 the evidence was presented about how participants reported being influenced by their mothers and how maternal influences seemed to directly or indirectly affected their sunbed behaviour. Young people were quick to dismiss the potential dangers of sunbeds through a process that could be conceived as cognitive dissonance (Festinger, 1957), whereby, they would attempt to eliminate negative conflicting views in favour of the positive rewards of sunbed use to help justify their use. Mothers were reported to often finance their daughter's sunbed use, encouraging their daughters to use them together. Overall it appeared that mothers were directly or indirectly supporting their daughters to use sunbeds.

Findings from the thesis qualitative study were presented to the skin cancer prevention strategy development group, who decided that maternal influences needed to be explored further in order to understand the extent of possible influences by mothers. The presentation of the thesis findings therefore stimulated the commissioning of a further study - a rapid assessment of maternal knowledge and attitudes towards sunbed use, current and past sunbed behaviours, motivators and influencers around sunbed use. The findings from the commissioned work with mothers (unpublished) supported the findings of this thesis and both pieces of work subsequently influenced the development of a sunbed awareness campaign which focussed on both young people and their mothers.

Strategy to raise awareness: The sunbed campaign

Raising awareness was another key part of the prevention strategy. The skin cancer prevention group wanted to raise awareness across the city via a designated awareness raising campaign, and we wanted to involve as many stakeholders as possible. In order to do this the skin cancer prevention strategy development group led by Liverpool City Council commissioned a series of concept tests with young girls who use sunbeds and their mothers. The aim was to build on what was discovered during the commissioned work conducted with mothers and daughters and the evidence from my thesis studies, such as motivations for sunbed use, appearance related goal setting, testing alternative tanning methods, communicating and engaging with young people. The concept-testing commissioned work explored reactions to a series of creative routes for the sunbed campaign in Liverpool. This included slogans and images of young people in a variety of designs using different models. Reactions to communication channels and types of interventions were explored. The work also tested the likelihood of people with social influences and how young people might respond to and change behaviour.

Strap lines for the campaign were explored and were tested, "*Don't bake, go fake*" was limited to fake tanners. "*Tans fade the damage doesn't*" put heavy sunbed users off. "*Tan safe*" did not provide a clear message. "*Say no to sunbeds*" was viewed as too dictatorial. "*Skip the sunbeds*" did not elicit strong reaction. The overwhelmingly supported strapline was "The look to die for. Bin the beds". This was liked by all age groups, "bin" being a Liverpudlian expression for stopping something. This strapline was the most successful at both attracting the attention of users and making the risks of sunbeds relevant to the target audience.

The image of a model's face with sunbed risk messages on them successfully made the risks associated with sunbeds relevant to underage users. The combination of an aspirational model, striking skin damage and the sunbed acts"

created a strong impact on respondents. They were drawn to the damage of the skin and attracted to the way the models looked.

'The look to die for' campaign Liverpool 2013



Some studies in the literature suggest that focussing on appearance related effects of sunbeds may provide a more effective way of sustaining long term behaviour change (Hillhouse et al., 2002; 2008; Mahler et al., 2007; Moyer, 2012). The campaign magazine proved a great aid to getting users to read the information, as many were attracted to its magazine format. Respondents felt that the impact of the campaign magazine could be enhanced if it were given out in conjunction with face-to-face interactions such as at the city centre events.

'Look to die for' magazine concept



The engine of the online and social media-based aspects of the campaign was its increased engagement among both users and influencers. It encouraged the public to take ownership of the problem and participate in the promotion of the campaign. All the social media concepts were appealing and respondents were keen to follow and share. There was an indication that the ideas could potentially “snowball” across social media sites.

There was strong indication that the city centre events would be a highly popular component of the campaign. Users and influencers said that they would be likely to attend. The promotion of fake tan was seen as a powerful hook—teenagers are attracted by the free gifts and the prospect of learning how to use fake tan better was appealing. The events had the potential to inspire users to consider replacing sunbeds with fake tan.

The schools and colleges talks were also very well received. It was thought that this strategy would have most impact especially amongst younger girls. The face-to-face interaction with someone who had had experience of skin cancer was perceived as a powerful motivator.

Other activities in the campaign included support from Liverpool fashion week. Liverpool modelling agencies banned all models from using sunbeds prior to and during the fashion week and this was articulated at the event. Several competitions were organised such as ‘girls’ night in’ pamper sessions, and vouchers for popular shopping locations in reward for uploading case stories and keeping diaries. Schools and colleges were also involved in the campaign and said that they would value listening to stories from people who had personal experiences of skin cancer as a result of sunbed use. This mirrors the findings from my research. Participants placed value on personal stories. A local radio station that appealed to the target audiences advertised health messages and sunbed dangers, ran competitions and informed the public of the local events. The credibility and importance of the campaign was enhanced by having

endorsement by the NHS and CRUK. Both users and influencers said that they would have more trust in a campaign associated with these organisations.

Lobbying for better regulations of sunbeds

There was also a positive response to the possibility of Liverpool becoming active in taking a stand in sunbed legislation – this could add value and depth to the campaign. On the whole, both users and influencers were supportive of Liverpool both tightening up on sunbed regulation and lobbying the government. Influencers said that they would be happy to sign a petition to support Liverpool City Council to put pressure on the government to make changes.

The results of the evaluation of the campaign will not be included in this thesis; but the plan is to evaluate the reach of the campaign and this will be measured in several ways. Online activity (e.g. page impressions, advert views, the number of people who share campaign activity, etc.), media activity (column inches, radio coverage), event visitors and the number of young people reached through the schools activity will all be analysed. To monitor engagement with the campaign, online activity (e.g. click-through rates, number of followers, number of downloads, people pledging to ‘say no to sunbeds’) will be measured. The number of people who request information at events, the number of people and organisations publicly pledging to ‘say no to sunbeds’ via media activity will also be recorded and analysed. To measure changes in attitudes and behaviours, surveys with pupils at schools will be undertaken before and after talks and online surveys will be conducted via social media sites and carried out at events. To measure changes in behaviour, voucher redemption and sales data from the proposed collaborative work with a commercial fake tanning company will be analysed. This will provide an indication of whether the use of fake tan is increasing in Liverpool.

The sunbed campaign work will be monitored for online figures, numbers of advert viewings, media activity and numbers of visitors. The regulatory aspects

of the work will be evaluated through the work of the Environmental Health team, who will be engaged to monitor and enforce legislation in relation to sunbed outlets and their use. A marker of the impact and reach of the strategy should be the overall reduction in the density of licensed sunbed premises. Primary care data will also be used to quantify any increases in presentations to the GP with concerns about suspicious skin symptoms as a result of the campaign work.

Psychological support pathways-addiction and body dysmorphic disorder

Chapter 7 presented results on how young people said that they would find it difficult to stop using sunbeds. Some sunbed users felt that they were addicted and would be in need of psychological support from professionals. Sunbeds have been associated with psychological morbidity, dysmorphia (Philips et al., 2006), seasonal affective disorder (Kaur et al., 2006; Hillhouse et al., 2010), addiction and dependency (Cui,R et al., 2007; Kaur et al., 2006), and sensation seeking (Armes, 2002, Bagdasarov et al., 2008). Little is known about addictive sunbed use amongst young people and NHS services needed to react to the potential support needs of young people in Liverpool. This is especially important as the introduction of the sunbed ban for under 18 year olds may make it difficult for those addicted to gain access to salons and this may have a substantial impact upon the individual.

Improving access to psychological therapies (DH, 2008) is a key nationally mandated service requirement and is part of a stepped care model. Step four in the model requires the most intensive support and access to highly specialised psychological support services. The National Treatment Agency for Substance Misuse provides addiction support for young people and in many parts of the country it is the Child and adolescent mental health service (CAMHS) service that offers this support, with addiction psychiatrists providing the expertise. This, however, has by and large focussed on substance misuse. There are no specific services available for supporting young people who may be addicted to

sunbeds in Liverpool as the size of problem is not known. The findings from my research provided evidence that young people reported being addicted to sunbeds and we wanted to address this with the CCG so that psychological support pathways could be developed.

A key concern from the strategy development group was that young people may be reluctant to seek support for fear of being identified as using sunbeds illegally. Another concern (expressed within the CCG) was that there is no explicit service pathway currently. It is important to ensure that young people and their parents are aware of help that may be available so that psychological support therapies can be offered to them.

Policy implications

The launch of the skin cancer prevention strategy raised considerable interest locally and nationally as it was one of the first in the country since the establishment of the new HWBs and CCGs. CRUK were keen to learn from the findings of the strategy, moreover; they were keen to understand the evidence that shaped the development of the strategy particularly around sunbeds and young people. As previously mentioned CRUK want to support further lobbying to restrict hazardous sunbed use and a key finding within my research that demands closer attention to the consequences of sunbed use is that of addiction. The UK government needs to recognise that some young people under the age of 18 may be addicted to sunbeds and may require the support of specialist psychological support services and child support services. The government's reluctance to enforce further regulation such as monitoring compliance within the law, and the lack of desire to improve the training and competency of salon staff who supervise sunbeds, may leave young people vulnerable and at risk of psychological morbidity.

Conclusion

The development of a local skin cancer prevention strategy was an ambitious piece of work. While intuitively sunbeds are thought to be dangerous, little effort to reduce sunbed use in young people had been taken in Liverpool. Increasing evidence of risks of UV damage associated with skin cancer and high rates of sunbed use identified in young people in Liverpool set the challenge to the new NHS and health social care organisations. Liverpool has a history of preventative medicine, going back to Dr William Henry Duncan, the first Medical Officer for Health in the country, who served the city between 1847-1863 and who through the Sanitary Act in 1846, helped to reduce the spread of cholera and save many lives. While I would not begin to compare the two preventive approaches, the adoption of the skin cancer prevention strategy by Liverpool City Council demonstrates that the city cares about preventative medicine.

The development of this strategy was challenging. Had this not been included in my research proposal, the likelihood of the strategy being developed in Liverpool was low. The opportunity to develop such a strategy and initiatives within the research process presents us with exciting policy opportunities and further opportunities for research. The research process enabled me to influence the development of an evidence based strategy, both guiding colleagues and testing emerging research findings.

Liverpool Skin Cancer Prevention and Early Detection Strategy 2013-15

Changing behaviours



READER INFORMATION	
Title	Liverpool Skin Cancer Prevention and Early Detection Strategy 2013-15
Team	Skin cancer prevention strategy development group
Author(s)	Paul Mackenzie, Maureen Sayer, Emma Page
Contributor(s)	Kerry Lloyd, Cllr Roy Gladden
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Contact details	Kerry.lloyd@liverpool.gov.uk
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Liverpool Skin Cancer Prevention and Early Detection Strategy (2013-15)

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This strategy has been endorsed by:



Mayor Joe Anderson
Chair Health & Wellbeing Board



Councillor Roz Gladden
Assistant Mayor and
Cabinet Member for Adult
Health and Social Care



Councillor Roy Gladden
Assistant Cabinet Member for
Adult Health and Social Care
and Cancer Champion for
Liverpool City Council



Dr Paula Grey
Director for Public
Health Liverpool

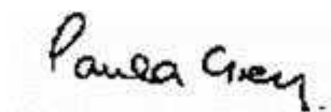
Foreword

Exposure to Ultra Violet (UV) radiation is the leading cause of skin cancer, occurring naturally via sunlight, and artificially through the use of sun lamps and tanning beds. This strategy aims to raise awareness and increase knowledge of the risks of UV exposure, influence attitudes and encourage behaviour change in Liverpool. The strategy outlines Liverpool's approach to tackle rising rates of skin cancer in the city. Skin cancer is one of the most common cancers in the UK and the number of people who develop it is increasing. Based on historical data Liverpool is likely to experience a 60% projected increase in cases of skin cancer by 2020. A report by Cancer Research UK highlighted Liverpool as the 'sunbed capital' of England, with 50% of Liverpool females aged 15-17 years using sunbeds, as opposed to only 11% nationally.

The number of sunbed outlets is higher in areas of social deprivation, and local insight suggests that individuals living in areas of social deprivation are more likely to use sunbeds, and use them more frequently.

Raising awareness and changing behaviour is essential if we are to achieve a sustainable programme that improves prevention and early detection of skin cancer. This strategy has been developed with multiple stakeholders as a response to this public health challenge.

Working in partnership, we have a number of tools at our disposal to stimulate behaviour change from legislation, regulation, commissioning and policy development, as well as information, persuasion and engagement. It is envisaged that this strategy will support in reducing the inequality associated with outcomes in relation to cancer, by making the healthy choice the easiest to make.



Dr Paula Grey (Director of Public Health – Liverpool City Council).

1. Introduction

- 1.1 The global incidence of non-melanoma skin cancer and malignant melanoma skin cancers have been increasing rapidly over the last three decades and are increasing year upon year ¹.
- 1.2 Each year in the UK there are approximately 12,800 new cases of malignant melanoma (the most deadly form of skin cancer) and around 100,000 people are also diagnosed with non-melanoma skin cancer.
- 1.3 Over the last 25 years rates of malignant melanoma in Britain have risen faster than any of the top ten cancers in males and females ². Although incidence rates are higher among females, more men die from it ⁸.
- 1.4 The incidence of non-melanoma is rising in younger people, especially among those aged 30–39 ⁷.
- 1.5 In 2010 there were 2,203 deaths from malignant melanoma and around 500 deaths attributed to non-melanoma skin cancer ³. Overall, skin cancer increases with age; however, there is an increasing concern about malignant melanoma which is now the second most common cancer in people aged 15-34 years ².
- 1.6 Skin cancer is preventable in many cases and if it diagnosed at an earlier stage the outcomes are usually very good. Five-year survival rates are 98.7% for skin cancer that has been diagnosed in the early stages but only 15.5% for disease that has spread ⁹.
- 1.7 Skin cancer is caused by over exposure to the sun's rays and sunbed use. Most skin cancers can be prevented by:
 - Avoiding over exposure to the sun
 - Avoid burning (red to blistering)
 - Avoiding sunbed use
 - Covering up- Using clothes, hats and sunglasses
 - Seeking shade at the hottest parts of the day (11-3pm)
 - Using sunscreen- SPF 15+

- ^{1.8} Sunshine is good for us, it can make us feel happy and exposure to the sun helps us to synthesis Vitamin D which is important to prevent a number of ailments, however, over exposure to UV solar light and artificial light significantly raises the risk of the development of skin cancer. There is also evidence that although use of sunbeds can increase vitamin D levels, this reaches a plateau after a few sessions ¹². Many experts have concluded that use of fatty fish in the diet and supplements are a preferable means of increasing vitamin D levels in all ethnic groups around the world and are a safer option than UV tanning devices ^{24, 25}.
- ^{1.9} In 2009 The International Agency for Research on Cancer (IARC) raised the category of sunbeds from probably carcinogenic to humans to the highest cancer risk category (Group 1-carcinogenic to humans) ¹³.
- ^{1.10} A six city national prevalence study of sunbed use among 11-17 year olds was completed by CRUK in England in 2009. Sunbed use was reported to be the highest in Liverpool for 15-17 year olds girls with 49.7% compared to 11% nationally. Forty per cent of sunbed users aged 11-17 in Liverpool use them at least once a week ⁵ IARC, (2007) concluded that malignant melanoma was positively associated with individuals having ever used a sunbed, with a 75% increased risk of developing skin cancer, compared to those never having done so.
- ^{1.11} There is an increasing body of evidence that suggests that there is association between sunbed use and psychological problems such as seasonal affective disorder, addictive tendencies ^{28, 29} sensation seeking behaviour, and body dysmorphic disorder ³⁰.

Skin cancer prevention has been identified as a key priority by the Health and Wellbeing board in Liverpool, as a response to the year on year increasing number of new cases of skin cancer. This two-year skin cancer prevention strategy has been developed in partnership with Cheshire and Merseyside Clinical Network, Liverpool City Council, Liverpool Clinical Commissioning Group, Liverpool Community Health, Chartered Institute Environmental Health (CIEH), Cancer Research UK (CRUK) and other local and national partners.

2. Aims and Objectives:

Aims

- 2.1 To reduce the number avoidable deaths and new cases of skin cancer in of Liverpool through education, policy, legislation, awareness raising and behaviour change.
- 2.2 Deliver the key recommendations in the NICE skin cancer prevention guidance and to build on the 2010 government legislation banning under-18s from using sunbeds⁴.

Objectives

- 2.3 Identify groups of the population most exposed to UV rays by solar and artificial means and gain insights into their knowledge, attitudes, motivations and barriers to changing their behaviour.
- 2.4 Raise awareness of the dangers of exposure to harmful UV rays via solar and artificial means and how to protect them.
- 2.5 Challenge attitudes and beliefs which are leading to risky behaviours and encourage people to protect themselves from solar and artificial UV radiation.
- 2.6 Influence better compliance amongst the sunbed salon industry, in line with national policy, legislation and European standards to reduce artificial UV exposure.
- 2.7 Influence employers and schools to adopt sun safe policies (Including shade provision) and good practices to protect employees and children from over exposure to UV rays and to promote the importance of early detection.
- 2.8 Raise awareness of signs and symptoms of skin cancer and the importance of presenting early to the GP.

These objectives will be achieved by:

- 2.9 Developing a behaviour-change plan that helps us understand, address and influence behaviours at an individual, social and environmental level.
- 2.10 Working collaboratively with partners to embed skin cancer messages and interventions into existing programmes and services.
- 2.11 Educate clinicians about the skin cancer strategy so that they can support it and respond appropriately to patients and the public.

3. Developing the strategy:

- 3.1 The strategy has been developed in several stages. The first stage was to galvanise support across the city. This was achieved by holding a stakeholder workshop in Liverpool in March 2012. The second stage was the development of the strategy. A steering group was tasked with developing the strategy which was endorsed by the Health and Wellbeing Board in May 2013.
- 3.2 Organisations in Liverpool will work collaboratively to implement the strategy. This will involve working closely with employers of outdoor workers, schools, leisure services, planning authority, health workers, environmental health and health protection, commercial partners and the local and national media. The strategy implementation will be led by Public Health and overseen by the Liverpool Health and Wellbeing Board.
- 3.3 The strategy facilitates local implementation of the national guidance on the prevention of skin cancer. The National Institute of Clinical Excellence (NICE) developed this guidance which became effective in January 2011 ⁴.
(See Appendix a)
- 3.4 The NICE document omitted any guidance on sunbed use and other artificial UV devices. Liverpool has included sunbeds as a major focus of the strategy following a Department of Health (DH) funded study by CRUK. This six city prevalence study flagged Liverpool as having the highest number of 15 to 17 years olds using sunbeds, reporting that 47% of 15-17 year olds had used a sunbed ⁵.

(Participants working on plans and ideas at the event)



4. Changing behaviours:

- 4.1 The strategy is focused on preventing, changing or modifying behaviours. Behaviour change is a complex area which requires a strategic approach – one which hasn't previously been taken for skin cancer prevention in Liverpool until now.
- 4.2 There are many different social psychological models that seek to explain behaviours but most of them can be split into three levels⁶.

Personal

Personal factors which are intrinsic to the individual, such as their level of knowledge or their belief in their ability to change their behaviour and their habits.

Environment factors

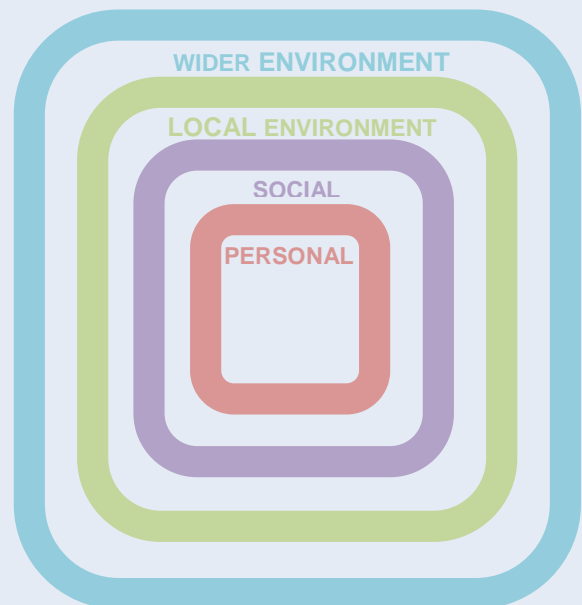
Environmental factors for which individuals have little control of.

These include both:

- Local environmental factors, for example the area in which an individual lives – the services and information that they come into contact with on a day-to-day basis.
- Wider environmental factors such as the economy, technology and legislation.

Social

Social factors which are concerned with how individuals relate to each other and the influence of other people on their behaviour.



- 4.3 In seeking to influence behaviour an approach that identifies and addresses the factors influencing behaviour at all three levels is most likely to be effective at bringing about behaviour change.
- 4.4 Working in partnership, we have a number of tools at our disposal to stimulate behaviour change from legislation, regulation, commissioning and policy development to providing information, persuasion and engagement.
- 4.5 The strategy includes a behaviour change plan that uses this framework to bring together expertise and resources from across the city so that we can utilise these tools to address the factors influencing behaviours related to skin cancer.
- 4.6 Based on local needs, a number of priority audiences have been identified that require a multi-disciplinary approach to address the factors influencing their behaviour at a personal, social and environmental level.
- 4.7 The priority target audiences for the 2013 - 2015 periods are children, male outdoor workers and underage girls using sunbeds.
- 4.8 Where gaps in knowledge exist, local insight will be commissioned to understand the factors that influence the behaviours of these three priority audiences.

5. Male outdoor workers:



- 5.1 Studies show that people who work outdoors receive 3 to 4 times more UV sun exposure than people working indoors, and are at greater risk of developing skin cancer. Almost three quarters of male cases of skin cancer occur in those aged over

50. There is generally a time lag of 10 to 30 years for the clinical appearance of skin cancer to occur. It is therefore important for male outdoor workers to be aware of the cumulative effect of unprotected sun exposure and the importance of early detection.

Men are more likely to present later to their GP with symptoms and signs of skin cancer. As a consequence men are more likely to die of skin cancer than women

- 5.2 Little is known about the sun safety behaviours of male outdoor workers. However, one qualitative study in the UK suggested that a key barrier in practicing sunsafe behaviour was the difficulty of staying out of the sun. The study further highlighted that there were a lack of policies mandating the use of sunglasses, sunscreen and hats^{14, 15}.
- 5.3 For us to be able to develop behaviour change interventions for this audience we first need to better understand the personal, social and environmental factors that influence their behaviour. Insight research has been commissioned with local outdoor workers and their employers to inform the strategy.

Influencing behaviour at a personal level

- 5.4 There is a considerable amount of ignorance and confusion relating to sun protection amongst outdoor workers, and men generally.
- 5.5 Local insight research will explore attitudes and behaviours of male outdoor workers and their employers
- 5.6 The results will be used to develop marketing interventions aimed at increasing sunsafe behaviours and raising awareness of the importance of early detection
- 5.7 The insight research will also explore whether it is possible to influence behaviours outside of work through the workplace setting
- 5.8 Employees of local organisations that employ outdoor workers will be targeted through organisations such as the Chamber of Commerce.

Influencing behaviour at a social level

The insight research will explore the concept that men are less likely to adopt sun safe behaviours because of peer and societal pressure to conform to the macho

- 5.9 ideal. This is often prevalent in the outdoor workers sector and may influence attitudes and behaviours.
- 5.10 The insight research will explore the role of other social influences including partners, who may be able to help men to check their skin for changes and persuade them to visit their GP

Influencing behaviour at an environmental level

- 5.11 The Health and Safety at Work Act (1974) details the legal duty of every employer to provide '*information, instruction, training and supervision*' to protect the health and safety of their employees. Moreover, the Management of Health and Work Regulations (1999) also requires that employers conduct suitable assessments of the risks to the health of their workforce this extends to the risks from UV radiation.
- 5.12 Legislation has resulted in some employers offering support to outdoor workers in relation to sun safety. Employers may encourage staff to wear protective clothing and use sunscreen, with some providing these for their employees.
- 5.13 The insight research will explore whether there are any gaps in sun protection measures – for example, are employees encouraged to protect high-risk areas such as the tips of their ears and lips?
- 5.14 The insight will explore whether employers are educating staff about the symptoms of skin cancer and the benefits of early presentation.
- 5.15 The insight research will identify best practice, explore what improvements could be made and will identify what support could be offered to employers to improve sun protection and early detection.

A small study of construction workers found that only 59% of construction workers use sunscreen at work, and CRUK found that outdoor workers see it as impractical and uncomfortable as it rubs in the dust and dirt.

- 5.16 Three local employers are taking part in the insight research so that current practice across the industry can be explored.

- 5.17 The insight research will be used to develop company sun protection policies in line with health and safety requirements.
- 5.18 Organisations that have a strong influence on local industry will be engaged to encourage and facilitate changes to working practices in relation to skin cancer. For example the Health and Safety Executive (HSE), The Cheshire and Merseyside Occupational Health Group and the Cheshire and Merseyside Construction Safety Group.

6. Sunbeds:



- 6.1 There is strong evidence linking sunbed use to the risk of developing malignant melanoma skin cancer. International experts identified sunbeds as carcinogenic to humans¹³. Other research has made significant associations with sunbed and an increased risk of developing skin cancer^{17, 18, 19, 20, 21}.
- 6.2 Liverpool is considered to be the sunbed capital of England following research conducted by CRUK⁵. In this six city prevalence study young people were interviewed face to face and Liverpool was identified as having the highest number of 15 to 17 years olds reporting that they used sunbeds (n=45%). This was significantly higher than other cities in the study except Sunderland which also had high prevalence of sunbed use.
- 6.3 There is emerging evidence from a local PhD study in the University of Liverpool which reports that some young people may be dependent on sunbeds or

addicted to sunbed use. We will need to ensure that psychological support services are available in Liverpool if this is considered to be an important factor.

- 6.4 In 2010 legislation was passed that restricts the use of sunbeds to over 18s. In Liverpool, approximately half of girls aged 15-17 have used a sunbed (vs. 11% nationally) and two out of five sunbed users aged 11-17 use them at least once a week.
- 6.5 A UV spectra survey took place of 402 artificial tanning units in England. The UV emissions from these units were measured against the British and European standard (2003) ²⁷. Nine out of 10 sunbeds in the study emitted UV levels exceeding the maximum European standard ²⁶ in some cases the UV levels were six times greater than the midday Mediterranean sun.
- 6.6 Local insight research was commissioned to support the strategy to understand how to influence the behaviours of underage sunbed users. It also explored whether maternal influence has a significant role to play in young people making decisions about sunbed use.

Influencing behaviour at a personal level

- 6.7 Whilst many teenage girls in Liverpool know that there is a link between sunbeds and skin cancer, they believe this only relates to extreme use. There is a belief that they aren't using sunbeds enough to be at risk and people locally perceive that using them 2 - 3 times a week is '*normal*' and '*safe*'. Girls use sunbeds for a variety of reasons all of which are based on the perception that obtaining a tan from sunbeds increases confidence and self-esteem. There is less motivation to use alternatives such as fake tan, as young people prefer the natural, low-cost, streak-free tan they get from sunbeds.
- 6.8 Some young people display extreme behaviours, using sunbeds three or more times a week for up to 12 minutes at a time.
- 6.9 To influence behaviours at a personal level a series of targeted interventions will be developed. This will include targeting girls through schools and beauty events in the city centre, as well as through online campaigns and social networking.

Influencing behaviour at a social level

- 6.10 Local evidence suggests that mothers directly or indirectly influence their daughter's sunbed use. Mothers lack an understanding of the risks of sunbed use and are largely unaware of the legislation restricting under-18s from using sunbeds. As a consequence mothers are more reluctant to tackle the issue of sunbed use with their daughters.
- 6.11 Parents will be targeted through schools, the media and social networking sites to educate them and encourage them to discuss the dangers of sunbeds with their children.
- 6.12 A media campaign using traditional and social media channels will be developed to begin to tackle the wider sunbed culture in Liverpool. Local influencers will be recruited to act as ambassadors for the campaign. For example, Liverpool Fashion Week has already agreed to ban models from using sunbeds and will help raise the awareness of the dangers of sunbed use. GPs will be encouraged to dispel the myth that sunbeds should be used to treat acne and prevent sunburn

Influencing behaviour at an environmental level

- 6.13 There is very low awareness of the sunbed legislation in Liverpool. Teenagers who are aware of the legislation don't take it seriously, as salons don't enforce it. The proliferation of sunbed outlets in the city adds further to the common perception that they aren't dangerous.
- 6.14 Proactively enforcing the existing legislation to reduce the prevalence of underage sunbed use. The Public Protection Division of Liverpool City Council is responsible for enforcing the requirements of the Sunbeds (Regulation) Act 2010, which prohibits persons aged under-18 years of age from using sunbeds. Although the evidence suggests that the prevalence of underage sunbed use is very high, Liverpool City Council receives a very low number of complaints about underage sunbed use. This may be explained by the illicit nature of the trade. Given the very high prevalence of underage sunbed use and the low number of complaints about underage sunbed use received by the City Council, it is necessary to proactively intervene to reduce the availability of sunbeds to minors.

6.15 Liverpool City Council's Public Protection Division will carry out a programme of regulatory interventions to advise operators of sunbed premises of their legal responsibilities and will enforce the requirements of the law. These interventions may include advisory work, inspection of sunbed premises and test purchasing activities. Any regulatory activity will have to be in accordance with the Council's enforcement policy and national legislation, particularly the Protection of Freedoms Act 2012.

6.16 A policy regarding the extension to sunbed regulations has been passed by Liverpool City Council which seeks to propose a Local Act of Parliament. This includes action to:

Liverpool MPs will lobby at national level to introduce a local byelaw that will enable the introduction of tighter regulations of sunbed outlets in the city, this will include ensuring that:

- The sale and hire of sunbeds to under-18s is prohibited
- All sunbed operators are fully trained.
- Protective eyewear is provided.
- All use of sunbeds is supervised.
- All establishments display and provide prescribed health information to all sunbed users.
- Skin type is assessed by trained operators before sunbeds are used.

7. Sun protection children and young people:



Introduction

- 7.1 To ensure a holistic approach to health, it is important to recognise that this strategy should not discourage children from participating in outdoor physical activity. Outdoor activities will be encouraged ensuring that children are sunsafe and that they receive adequate exposure to sunlight to maintain Vitamin D levels.
- 7.2 Nearly 80% of a person's lifetime sun exposure occurs before the age of 21, this highlights the importance of strategies that prevent over exposure to UV particularly with children²².
- 7.3 Painful sunburn or blistering before 20 years of age is associated with increased risk of skin cancer²³.

Influencing behaviour at a personal level

- 7.4 The strategy will develop routine action for engaging all children and young people in applying their own sunscreen prior to any outdoor physical activity session during spring/summer and autumn months. For example we will work with role models from Liverpool and Everton Football Clubs to spread positive sun safe messages to supporters on match days.

Influencing behaviour at a social level

- 7.5 A life course and family focussed approach to sun safety will be taken for children and young people. The aim is to build on existing interventions and relationships wherever possible.
- 7.6 Sun safety training for Children's Centre (CC) and nursery staff will be provided to engage with pregnant women, families and children 0 – 4 to learn sun safety strategies – encouraging self-application of an appropriate factor sunscreen for all children over 3 and provision and use of hats and sunglasses.
- 7.7 Sun safety training for all front line staff in educational settings with children 5 - 16 will be provided. All schools will be encouraged to have a designated area of shade, all children and young people to wear a hat, sunglasses and sunscreen for protection.
- 7.8 Sun safety and sunbed awareness educational sessions will be delivered in schools via PHSE leads.

Influencing behaviour at an environmental level

- 7.9 The strategy includes work with the Green Infrastructure Strategy and the Chamber of Commerce to provide easily accessible areas of shade across the city in public open spaces and buildings.

8. Embedding skin cancer prevention into existing programmes and services

- 8.1 Embedding skin cancer messages through a partnership approach will raise the profile of skin cancer as an important issue amongst the public and professionals.
- 8.2 Existing programmes or services that target audiences at high risk of skin cancer or who are more likely to engage in risk taking behaviours will be identified. Skin cancer messages, interventions and signposting will be embedded within services.

- 8.3 This will complement the behaviour-change plan by ensuring that partners send out consistent messages and avoid multiple approaches to the same issue. Pooling and maximising resources is likely to achieve greater impact. For example, key messages could be promoted to parents of pre-school children through Sure Start centres, by Health Visitors through the Healthy Child programme and be included in personal child health records. Another example could be the promotion of sun safety messages at outdoor events organised or licensed by Liverpool City Council and other key partners.
- 8.4 The outcome of the embedding skin cancer into existing programmes and services is a long-term, sustainable approach to raising the profile of skin cancer and communicating key messages to target audiences.

9. Health professionals

NHS staff are well placed to provide information and support about skin cancer. The role of health professionals in supporting the skin cancer strategy is central to its success

- Health professionals need to have enhanced knowledge about sun safety, dangers of sunbed use, early diagnosis and impact on health services. Information needs to be consistent and should be communicated to the targeted groups.
- Working together with health professionals to develop appropriate education materials and / or training is crucial in order to deliver appropriate health messages.
- Ensuring early identification and referrals into appropriate psychological services for those individuals who exhibit addictive behaviour.

- The outcome of the staff education is that health professionals will be able to effectively deal with enquiries about skin cancer, and will support the behaviour-change plan so that it has a greater impact upon local behaviours.

10. Monitoring and evaluation

The success of the strategy will be measured using a range of techniques appropriate to the programme of work being undertaken

10.1 Outdoor workers

Evaluation will take the form of a questionnaire with outdoor workers, pre and post the programme of work. The questionnaire will look to establish whether there has been a shift in knowledge, attitudes, predicted behaviours and recognition of signs and symptoms of skin cancer.

Telephone interviews will be conducted with the three employers engaged as part of the insight work. The interviews will seek to ascertain whether they have found the toolkit effective. Based upon this feedback the toolkit can then be further developed for wider dissemination to other employers in Liverpool.

The toolkit will be embedded in the websites of The Health and safety Executive, Industry Bodies, Trade Union organisations and the Merseyside Occupational Health Service. Monitoring will take place as to the number of professional organisations promoting the use of the toolkit.

Educational work with local further education colleges will be measured with regard to number of visits and numbers of students engaged.

10.2 Sunbeds

To monitor the campaign reach we will measure online activity (e.g. page impressions, advert views, the number of people who share campaign activity, etc.), media activity (column inches, radio coverage, etc.), event visitors and the number of young people we reach through the schools activity

To monitor engagement with the campaign we will measure online activity (e.g. click-through rates, number of followers, number of downloads, people pledging to 'say no to sunbeds', etc.), the number of people who request information at events, the number of people and organisations that publicly pledge to say no to sunbeds via media activity

To measure changes in attitudes and behaviours we will undertake surveys with pupils at schools before and after talks, undertake online surveys via our social media sites and carry out surveys at events

To measure changes in behaviour we will analyse voucher redemption and sales data from the proposed collaborative work with a commercial fake tanning company. This will give us an indication of whether the use of fake tan is increasing in the area.

The sunbed campaign work will be monitored for online figures, numbers of advert viewings, media activity and numbers of visitors

The regulatory aspects of the work will be evaluated through the work of the Environmental Health team, who will be engaged to monitor and enforce legislation in relation to sunbed outlets and their use. A marker of the impact and reach of the strategy should be the overall reduction in the density of licensed sunbed premises. Primary care data will also be used to quantify any increases in presentations as a result of the campaign work.

^{10.3} **Sun Protection – Children and Young People**

Systematising sun safety - skin cancer is everyone's business and the effects of sun are often not felt for many years following exposure. This strategy takes a life course and a whole family approach - everyone who works with or is responsible for children and young people will give consistent messages re-skin cancer.

Organisational structures will be used to ensure that front line workers: GP, School Nurse, teachers, youth workers, sports centres provide role models.

Liverpool will work toward a Whole Centre/School Charter for sun safety this will include – standardised policies within each children's centre/ nursery and all educational settings. Policies will encourage the use of sunscreen and guidelines will be provided for schools on how to help children apply sunscreen (and how children can help each other to apply it). Sun safety will be included as part of the Healthy Schools criteria and will align with guidance regarding Vitamin D, as well as the promotion of physical activity. Evaluation will look to ascertain uptake of standardised policies within educational settings.

Many schools have open playgrounds with little shade, feasibility studies will be considered in each school to identify if sheltered areas can be developed. The city will ensure architects; design and builders incorporate shaded areas and consider sun safety for all new build premises and refurbishments.

School leaders will assess the training needs of staff responsible for policy-making in outdoor, educational or leisure environments. Staff will have the necessary skills and information to give their colleagues advice on sun protection issues. For example, teachers and others working in education may need training in understanding risk and risk factors, the types of behaviours to avoid and how to encourage children and young people to apply their own sunscreen.

Schools PHSE sessions will provide learning on sun safety as part of personal care for children and young people. www.pshe-association.org.uk

^{10.4} Embedding skin cancer prevention into existing programmes and services

In order to measure whether skin cancer messages have been embedded into services, monitoring will take place as to the numbers attending training and development events, as well as the numbers of services adopting the strategy.

Appendix a

NICE (2011) Skin cancer: prevention using public information, sun protection resources and changes to the environment.

The Department of Health (DH) asked the National Institute for Health and Clinical Excellence (NICE) to produce public health guidance for the NHS and local authorities on the prevention of skin cancer with specific reference to: provision of information, physical changes to the environment and the supply of sun protection resources” *“The guidance is for NHS and other commissioners, managers and practitioners who have a direct or indirect role in, and responsibility for, preventing skin cancer. This includes for example, GPs, local authority planners, pharmacists, practice nurses, public health practitioners, school nurses and skin cancer specialists (such as clinical nurse specialists [skin cancer], dermatologists and skin cancer surgeons). It also includes those involved in, or responsible for, employee health and wellbeing. NICE (2011)”.*

Recommendation (1) Information provision: delivery

- To raise awareness of the risk of UV exposure and ways of protecting against it.
- Integrating skin cancer prevention messages into existing local health promotion campaigns and activities. Examples include employee wellbeing initiatives or activities related to the Healthy Child Programme and Sure Start.
- Ensure national and local messages are repeated over time and regularly revised to keep the audience’s attention. Spring and summer.

Recommendation (2) Information provision: developing national campaigns and local activities

- Target groups at higher risk- skin type, children and babies, young people, outdoor workers, immuno-compromised, history of skin cancer, those with more than 50 moles.
- Those who sunbathe a lot and those who use artificial tanning devices.
- Ensure national and local prevention activities are based on evidence.

- Establish clear, measurable objectives for national and local prevention activities.
- Ensure the need to tackle health inequalities is taken into account when developing national and local prevention activities.

Recommendation (3) Information provision: message content

- Ensure messages include a simple explanation of how UV exposure can damage the skin and how environmental factors can affect the level of sun exposure. (Factors include: geographical location, cloud cover, seasonal variations, UV forecasts or solar UV index and the availability of shade).
- Ensure messages explain how someone can assess their own level of risk.
- Ensure messages give a balanced picture of both the risks of overexposure and the benefits of being out in the sun.
- Messages should include
 - Avoid getting sunburnt
 - When and how to protect
 - Sunscreens
 - Sunscreen application.

Recommendation (4) Information provision: tailoring the message

- Ensure messages:
 - Are simple, succinct and tailored for the target group.
 - Take account of cognitive ability.
 - Address the social and practical barriers to using sun protection.
 - Are phrased in such a way that they enhance people's belief in their ability to change.
 - Are delivered in a way that meets the target audience's preferences.

Recommendation (5) Protecting children, young people and outdoor workers

- Ensure policies aim to prevent children and young people from getting sunburnt by encouraging them to seek shade whenever possible.

- Ensure policies encourage outdoor workers to wear clothing to avoid getting sunburnt (including a hat that shades the face and back of the neck, where possible).
- Assess the training needs of staff responsible for policy-making in outdoor, educational or leisure environments.

Recommendation (6) Providing shade

- When designing and constructing new buildings, consider providing areas of shade created either artificially or naturally (for example, by trees).
- When developing or redeveloping communal outdoor areas, check whether it is feasible to provide areas of shade. Shade could be created by constructing a specific structure or by planting trees.
- For all new developments, ensure there is adequate access to areas of shade for people with a disability.

Additional local recommendation (7)

To develop guidance and local regulations to reduce the public's exposure to artificial UV rays

- Support Liverpool lobbying for stronger sunbed regulations.
- Scope the number of establishments in Liverpool delivering artificial tanning.
- Audit the specification of tanning devices and their emissions against national and European guidelines.
- Develop plans that ensure compliance with banning under-18s from using sunbeds or accessing areas that are restricted.
- Ensure a code of practice is implemented and adhered to.
- Raise the public's awareness of the dangers of sunbed use.

Appendix b

Skin cancer prevention workshop March 2012.

The skin cancer prevention and early detection strategy event was held in March 2012 at Blackburn House in Liverpool. Key stakeholders from Liverpool attended.

Workshop speakers included.

John Lucy (Associate Director of Public Health, Liverpool PCT).

Chit Selvarajah from CRUK .

Linda Mullen Nurse consultant for skin cancer the Royal Liverpool University Hospital .

Georgia a young patient recovering from malignant melanoma.

Paul Mackenzie (Associate Director for health inequalities Cheshire & Merseyside Clinical Network) and **Maureen Sayer** (Health promotion specialist, Liverpool Community Health).

David Kidney (Head of Policy, Chartered Institute Environmental Health) presented the findings of local surveys on sunbed use amongst young people in Liverpool was our keynote speaker.

Councillor Roy Gladden the lead for cancer in Liverpool Council summarised the need for us all to work together to develop and implement a good strategy across the city.

High level action plan

WORKSTREAM 1: Outdoor workers			
OBJECTIVES	TASK	TIMESCALES	RESPONSIBILITY
To reduce the risk of UV over exposure and burning to outdoor workers	Insight research to explore how to increase sun safe behaviours and early presentation amongst outdoor workers.	May 2013	LCC: Public Health – Insight and Social Marketing
	Behaviour change interventions targeting employers and professional organisations to increase sun safe behaviours and early presentation amongst outdoor workers.	June 2013 – Mar 2015	LCC: Public Health – Insight and Social Marketing, LCC: Health and Safety.
WORKSTREAM 2: Sunbeds			
To reduce the availability of sunbeds to minors through enforcement	Lobbying and regulation to prohibit the use of sunbeds.	May 2013 – Mar 2015.	LCC: Environmental Health, LCC: MPs.
To raise awareness of the legal duties of sunbed operators	Advise and educate operators of sunbed shops about their legal obligations to prevent minors from using sunbeds and to enforce the requirements of the law.	May 2013 – Mar 2015.	Environmental Health, Local Authority enforcement officers.
To understand the motivations for sunbed use amongst young	Insight research to explore why teenage girls use sunbeds and the	November 2012.	LCC: Public Health – Insight and Social Marketing.

girls and to what extent mothers influence their daughters sunbed use	role of maternal influence		
	Behaviour change campaign to reduce sunbed use amongst teenage girls.	May 2013 – Mar 2015.	LCC: Public Health – Insight and Social Marketing, LCH: Health Promotion.
To ensure adequate psychological support	Ensure young people addicted to sunbeds receive adequate psychological support.	September 2013	CCG.

WORKSTREAM 3: Sun protection children and young people			
OBJECTIVES	TASK	TIMESCALES	RESPONSIBILITY
To develop effective training programmes for Children Centres and educational settings.	Develop and deliver training for Children’s centre and nursery staff to engaging with pregnant women, families and children 0 – 4 to learn sun safety strategies.	May 2013-Mar 2015	Public Health and Children’s services. LCH.
	Develop and deliver training for front line staff in educational settings with children 5 - 16 in sun safety. Encourage schools to adopt a sun safe policy.	May 2013-Mar 2015	Public Health and Children’s services. LCH.
Raising awareness of the need to apply sunscreen.	Sun awareness campaign with Liverpool and Everton FC promoting sun safe behaviours.	May 2013-Aug 2013	Children’s services.

To ensure greater provision of shade within the city.	Work with the Green Infrastructure strategy and the Chamber of Commerce to provide easily accessible areas of shade across the city in public open spaces and buildings.	May 2013-Mar 2015	Local Authority, Public Health, Chamber of Commerce.
WORKSTREAM 4: Sustainability			
To ensure that the prevention of skin cancer messages are integrated across services.	Embed sun safe and early detection messages into existing programmes and services.	May 2013-Mar 2015	LCC: Public Health Cancer Lead
	Engage and educate health professionals about skin cancer prevention strategy.	May 2013-Mar 2015	LCC: Public Health Cancer Lead, LCH: Health Promotion.

References

- (1) Committee on Medical Aspects of Radiation in the Environment (COMARE). 13TH Report. The health effects and risks arising from exposure to ultraviolet radiation from artificial tanning devices. COMARE 2009. Available at: <http://www.comare.org.uk/documents/COMARE13thReport.pdf>.
- (2) Cancer Research UK: Skin cancer statistics - Key Facts. <http://info.cancerresearchuk.org/cancerstats/types/skin/> (Accessed March 2013)
- (3) Cancer Research UK . CancerStats – UK skin cancer mortality statistics. Available at: <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/skin/> accessed March 2013
- (4) NICE (2011): Skin cancer: prevention using public information, sun protection resources and changes to the environment.
- (5) Thomson, C. S., Woolnough, S., Wickenden, M., Hiom, S., & Twelves, C. J. (2010). Sunbed use in children aged 11-17 in England: Face to face quota sampling surveys in the national prevalence study and six cities study. *BMJ (Clinical Research Ed.)*, 340.
- (6) Central Office of Information: Communications and behaviour change (2009)
- (7) Bath-Hextall F, Leonardi-Bee J, Smith C et al. (2007) Trends in incidence of skin basal cell carcinoma. Additional evidence from a UK primary care database study. *International Journal of Cancer*, 121: 2105–8
- (8) Office for National Statistics Mortality statistics: cause. England and Wales 2008. London: *Office for National Statistics*.
- (9) American Cancer Society. Cancer Facts & Figures—2008. Atlanta, GA: *American Cancer Society*, 2008.
- (10) Morris, S., Cox, B., Bosanquet, N. (2009) Cost of skin cancer in England. *European Journal Health Economics* 10:267–273.

- (11) Diffey, B. (2004) The future incidence of cutaneous melanoma within the U.K. *British Journal of Dermatology*, 151: 868–872.
- (12) Thieden, E., et al.(2008) Sunbed radiation provokes cutaneous vitamin D synthesis in humans – a randomized controlled trial. *Photochem Photobiol*, 84:1487-1492.
- (13) Ghissassi, F., et al (2009) A review of human carcinogens-part D: radiation. *Lancet Oncology*, 10:751–2.
- (14) Eagle, L., Kemp, G., & Jones, S. (2009) *Social Marketing-Based Sun Protection Intervention Strategy for Cornwall PCT*. Report for South West Public Health Observatory.
- (15) McCool, J., Reeder, A., Robinson, E., Petrie, K., Gorman, D. (2009) Outdoor workers' perceptions of the risk of excess sun exposure. *Journal Occupational Health*, 51:401-411.
- (16) Marks, R., Staple, M., Giles, G. (1993) Trends in non-melanocytic skin cancer treated in Australia. The second national survey. *International Journal of Cancer*, 53:585-90.
- (17) Westerdahl, J., Olsson, H., Masback, A., Ingvar, C., Jonsson, N., Brandt, L., et al. (1994) Use of sunbeds or sunlamps and malignant melanoma in southern Sweden. *American Journal of Epidemiology*, 140(8): 691-699.
- (18) Autier, P., Joarlette, M., Lejeune, F., Lienard, D., Andre, J., & Achten, G. (1991) Cutaneous malignant melanoma and exposure to sunlamps and sunbeds: A descriptive study in Belgium. *Melanoma Research*, 1(1): 69-74.
- (19) Swerdlow, A. J., English, J. S., MacKie, R. M., O'Doherty, C. J., Hunter, J. A., Clark, J., et al. (1988) Fluorescent lights, ultraviolet lamps, and risk of cutaneous melanoma. *BMJ*, 297(6649): 647-650.
- (20) Veierod, M. B., Weiderpass, E., Thorn, M., Hansson, J., Lund, E., Armstrong, B., et al. (2003) A prospective study of pigmentation, sun exposure, and risk of cutaneous malignant melanoma in women. *Journal of the National Cancer Institute*, 95(20): 1530-1538.

- (21) Walter, S. D., Marrett, L. D., From, L., Hertzman, C., Shannon, H. S., & Roy, P. (1990) The association of cutaneous malignant melanoma with the use of sunbeds and sunlamps. *American Journal of Epidemiology*, 131(2): 232-243
- (22) Laughlin, R (2000) Sun exposure and skin cancer prevention in children and adolescents. *The Journal of school nursing : the official publication of the National Association of School Nurses*, 16(2):20-6
- (23) Kennedy, C., Bajdik, C., Willemze, R., De Gruijl, F., Bouwes Bavinck, J. (2003) The influence of painful sunburns and lifetime sun exposure on the risk of actinic keratoses, seborrheic warts, melanocytic nevi, atypical nevi, and skin cancer. *Journal Invest Dermatology*,120(6):1087.
- (24) IARC. (2008) Vitamin D and Cancer. Lyon: IARC
- (25) Autier, P. (2004) Perspectives in melanoma prevention: the case of sunbeds. *European Journal Cancer*,40:2367-76.
- (26) Tierney, P., Ferguson, J., Ibbotson, S., Dawe, R., Eadie, E., Moseley, H. (2012) Nine out of 10 sunbeds in England emit ultraviolet radiation levels that exceed current safety limits. *British Association of Dermatologists*, 168: 602–608.
- (27) The International Commission on Non-Ionizing Radiation Protection. (2003) Health issues of UV tanning appliances used for cosmetic purposes. *Health Phys*, 84:119–27.
- (28) Murray, C. D., & Turner, E. (2004) Health, risk and sunbed use: A qualitative study. *Health Risk & Society*, 6(1): 67-80.
- (29) Heckman, C.J., Egleston, B.L., Wilson, D.B., Ingersoll, K.S. (2008) A preliminary investigation of the predictors of tanning dependence. *American Journal of Health Behaviour*, 32(5): 451-64.

⁽³⁰⁾ Phillips, K. A., Conroy, M., Dufresne, R. G., Menard, W., Didie, E. R., Hunter-Yates, J., et al. (2006). Tanning in body dysmorphic disorder. *Psychiatric Quarterly*, 77(2): 129-138.

Skin Cancer Prevention Strategy Development Members

Name	Role	Organisation
Paul Mackenzie	Senior Quality Improvement Manager	Cheshire and Merseyside Clinical Network & University of Liverpool
Maureen Sayer	Health Promotion Specialist	Liverpool Community Health
Cllr Roy Gladden	“Cancer Champion” Assistant Cabinet member for Adult Health and Social Care and Cancer Campion	Liverpool City Council
Kerry Lloyd	Health Needs Assessment Manager –Public Health Directorate	Liverpool City Council
Emma Page	Senior Insight and Social Marketing Executive	Liverpool City Council
Linda Mullen	Nurse Consultant Skin cancer	Royal Liverpool & Broadgreen University Hospital
Ladan Shayanfar	Environmental Health Officer	Liverpool City Council
Mike Hughes	Environmental Health Officer	Liverpool City Council
Carmel Dersch	Lay person Healthy Communities Collaborative (HCC)	HCC
Annette James	Head of Children and Young People’s Health Improvement – Public Health	Liverpool City Council
Rachael Gosling	Consultant in Public Health	Liverpool Community Health NHS Trust
Sandra Davies	Consultant in public health	Liverpool City Council
Stella Cairns	Disability Link Officer LINK	Liverpool Link
Dr Steve Connolly	GP HWBS lead	Liverpool Clinical Commissioning Group
Susan Cumming	Insight manager	Liverpool City Council
Vivien Marshfield	Primary Health Care Facilitator (RNLD)	Mersey Care NHS Trust
Dr Peter Cole	Radiation Protection Adviser	University of Liverpool
Danielle Sharp	Social Marketing Manager	Liverpool City Council

