

Edith Cowan University  
**Research Online**

---

Theses : Honours

Theses

---

2009

## Young women's perspectives on tanning in solariums: A constructivist grounded theory study

Michelle Louise Russell  
*Edith Cowan University*

Follow this and additional works at: [https://ro.ecu.edu.au/theses\\_hons](https://ro.ecu.edu.au/theses_hons)



Part of the [Cognitive Psychology Commons](#)

---

### Recommended Citation

Russell, M. L. (2009). *Young women's perspectives on tanning in solariums: A constructivist grounded theory study*. [https://ro.ecu.edu.au/theses\\_hons/1033](https://ro.ecu.edu.au/theses_hons/1033)

This Thesis is posted at Research Online.  
[https://ro.ecu.edu.au/theses\\_hons/1033](https://ro.ecu.edu.au/theses_hons/1033)

# Edith Cowan University

## Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

## USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

EDITH COWAN UNIVERSITY  
LIBRARY

Young Women's Perspectives on Tanning in Solariums: A Constructivist Grounded  
Theory Study

Michelle Louise Russell

A report submitted in Partial Fulfilment of the Requirements for the Award of  
Bachelor of Arts (Psychology) Honours, Faculty of Computing, Health and  
Science,

Edith Cowan University.

Submitted (May, 2009)

**I declare that this written assignment is my own  
Work and does not include  
(i) material from published sources  
used without proper acknowledgement or  
(ii) material copied from the work of  
other students.**

Signature

Young Women's Perspectives on Tanning in Solariums: A Constructivist Grounded  
Theory Study

Abstract

Despite Australia's general public awareness regarding the dangers of UVR exposure, young women continue to tan in solariums. This study utilised a qualitative approach with eight in-depth interviews to explore young women's perspectives on tanning in solariums. The 'core category' or storyline underlying participants' responses was 'being in control'. Three core themes emerged from the data: 'positive reinforcers', which related to attractions and motivations to tan, 'possessing knowledge' which concerned the different types of knowledge which participants held, and 'change' which represented participants' outcomes from external pressures. It was found that body image concerns and reinforcing rewards were motivators to use solariums and that a tanned skin may trigger psychological dependence for some women. The findings from the current study make a unique contribution to the body of knowledge and provide a case for further studies in order to inform practice and policy formation.

Author: Michelle Russell  
Supervisor: Dr Paul Chang

## COPYRIGHT AND ACCESS DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) Contain any material previously published or written by another person except where due reference is made in text; or
- (iii) Contain any defamatory material.
- (iv) Contain any data that has not been collected in a manner consistent with ethics approval.

Signed.

Dated.....15-07-09.....

### Acknowledgements

I would like to acknowledge the people who have contributed in making my thesis possible. Firstly, thank you to the generous women who gave their time and revealed their experiences to me, without you this study would not have been possible.

I would like to thank my supervisor Dr Paul Chang for his time, advice, and patience; through his knowledge and experience I have been able to achieve my goal, gained some valuable insight, and commenced my first steps of what I hope will be the first of many into the fascinating world of research.

Thank you to Kathryn Russell for proofreading my thesis draughts, your skills and expertise are truly appreciated.

I would also like to thank my friends, and fellow students, especially my study buddies Sam Shooter and Kristy O'Bryan for their support and faith in my abilities when at times I myself was not so sure. I would not have made it this far with out you, and my experience at university would definitely not have been so much fun!

Finally, a big thank you to my wonderful family, for their love, encouragement, and support; especially my husband Malcolm who without his unconditional love and understanding I would not have been able make yet another one of my dreams come true, and my children Aaron, Helen, Vincent, Alex, Johnny, and Declan who provide me with inspiration to achieve.

## Table of Contents

Title.....	i
Abstract.....	ii
Declaration.....	iii
Acknowledgments.....	iv
Table of Contents.....	v
Introduction.....	1
Harms Associated with UVR Exposure.....	2
Historical and Social Aspects of Tanning.....	5
Prevalence of Solarium Use.....	7
Motives for Solarium Use.....	9
Knowledge and Tanning Behaviours.....	13
Conclusion.....	20
Method.....	20
Research Design.....	21
Sample.....	21
Interview Schedule.....	23
Procedure.....	24
Ethical Considerations.....	25
Analysis.....	26
Findings and Interpretations.....	27
Positive Reinforcers.....	28
Body image.....	29



Attention.....	30
Me time.....	30
It’s Addictive.....	31
Possessing Knowledge.....	32
Health impacts.....	33
Positive health spin.....	35
Change.....	36
Personal experience.....	36
Societal attitudes.....	36
Cumulative pressure.....	37
Summary and Conclusions.....	38
References.....	42
Appendix A. Media Release.....	53
Appendix B. Poster.....	54
Appendix C. Interview Schedule.....	55
Appendix D. Interview Schedule.....	56
Appendix E. Participant Consent Form.....	57

## Young Women's Perspectives on Tanning in Solariums: A Constructivist Grounded Theory Study

Increases in skin cancer in the world's white-skinned populations have been referred to as epidemic in scale (Martin, 1995). The scientific community worldwide generally acknowledges that ultraviolet radiation (UVR) is the primary cause of skin cancer (Gordon & Hurst, 2007) and the association between suntanning behaviour and skin cancer is now widely confirmed (Fiala, Kopp, & Gunther, 1997). Australia has the highest rate of skin cancer in the world (Australian Institute of Health and Welfare [AIHW] and the Australasian Association of Cancer Registries [AACR], 2007). Approximately half of all Australians will be diagnosed with a type of skin cancer at some point during their life (Staples et al., 2006). Skin cancer causes over 1,600 deaths each year in Australia (AIHW, 2005a). The diagnosis of new cases of melanoma, the deadliest form of skin cancer, has increased a staggering 40% from 1993 to 2003 causing a significant burden to Australia's health care system. Indeed, where the most expensive cancer treatment is for skin cancer (AIHW, 2005b).

Most diagnosed skin cancers are thought to be largely preventable if a person limits their exposure to UVR from the sun (Glanz, Saraiya, & Wechsler, 2002). Health promotion and education programmes in Australia, aimed at informing people of the risks of overexposure to the sun, have resulted in a fairly well-informed public who know about melanoma and non-melanoma skin cancers. This knowledge has contributed to significant increases in sun-protective behaviours (Marks, 1994). Many young people, however, still actively seek a tan via the sun (Monfrecola, Fabbrocini, Posteraro, & Pini, 2000), and will expose themselves to UVR in tanning salons (solariums) (International Agency for Research on Cancer [IARC], 2007). The majority of health promotion and education programmes are designed to deliver

information regarding the health risks associated with UVR and sun exposure. Some authors, however, have questioned the effectiveness of these campaigns in changing people's behaviours, especially those who expose themselves on purpose with the intention to get a deep tan (Boldman, Jansson, Nilsson, & Ullen, 1997; Mahler, Kulik, Gerrard, & Gibbons, 2007).

Psychological research into behaviours related to UVR exposure is a relatively new field of interest within the area of health promotion and disease prevention (Arthey & Clarke, 1995). The majority of the literature has focused on collecting descriptive data on skin cancer knowledge and tanning behaviours (Arthey & Clarke, 1995; Reynolds, 2007). The use of tanning salons has increased, especially amongst young women, despite advice to the contrary from health professionals. The aim of the present study is to uncover the psychological aspects of young women's use of solariums and their motivations behind an increase in their use of tanning salons. This paper provides a brief examination of the harms associated with UVR exposure and an outline of the historical social aspects of tanning relevant to social influences on intentional tanning behaviour. The characteristics of intentional UVR exposure in relation to age and gender differences are discussed; subsequently, the literature which addresses issues relevant to UVR tanning behaviour is reviewed from a psychological perspective with a focus on the role of psychosocial factors in understanding tanning practices. This paper aims to draw on constructs from a range of health behaviour concepts previously developed to explain sunbed use with the intention of providing a platform of reference for this grounded theory research study.

*Harms Associated with UVR Exposure*

UVR is a powerful energy source emitted by the sun. UVR is classified by three common wave bands: Ultraviolet A, (UVA) Ultraviolet B (UVB) and Ultraviolet C (UVC) (Australian Radiation Protection and Nuclear Safety Agency, (ARPNSA) 2003). The earth's atmosphere prevents harm from UVC and filters a small amount of UVA and UVB. UVA and UVB, however, are considered to be carcinogenic to humans (International Agency for Cancer Research, Solar and Ultraviolet Radiation, 1992). Other harmful effects of UVR include photocarcinogenesis, erythema, chemical hypersensitivity, alterations to the skin's immune system, photoaging, and eye damage (Ohnaka, 1993). Due to complex interactions between environmental, lifestyle, and personal factors, the relationship between UVR exposure and an individual's risk of developing skin cancers is difficult to determine (IARC) 2007).

Nonetheless, a vast amount of research now indicates exposure to UVR can cause three major types of skin cancer: melanoma, squamous cell carcinoma, and basal cell carcinomas (IARC, 2007). Cumulative UVR exposure is closely linked to non-melanoma skin cancers (Gailani et al., 1996), whereas more intense and intermittent UVR exposure is thought to be related to developing melanoma skin cancer (Gandini et al., 2005). Predictors of melanoma also include increased age, a family history of melanoma, and having numerous moles (Goldstein & Tucker, 1995). In Australia it is estimated that 99% of non-melanoma skin cancers and 95% of melanomas are attributed to UVR exposure (Armstrong, 2004). The risk factors believed to contribute to the possibility of developing one or more of these skin cancers are ethnic origin, skin type, sun-related skin damage, sunburn history, and lifetime accumulative and recreational exposure to UVR (IARC, 2007). Moreover,

an individual's skin sensitivity in relation to unprotected UVR exposure is thought to be the most strongly associated risk of developing skin cancer (Kaplan, 1992).

Skin sensitivity is genetically predetermined by a person's skin colour which is dependent on the presence of pigment (melanin) in the skin (Ibrahim & Brown, 2008). Although people of different ethnic origins may have more or less similar levels of melanin, there is a difference in the distribution and size of the skin cells that contain the melanin (Kaplan, 1992). Depending on an individual's skin colour, their reactivity and sensitivity to UVR exposure varies. Fitzpatrick (1988) classified skin sensitivity into six skin types ranging from Type I (describing white skin that burns easily, but does not tan) through to Type VI (describing black skin that does not burn, but does tan). This classification scale has been found to be a reliable and valid measure of an individual's susceptibility to burning and related skin cancer risks (Fitzpatrick, 1988). Furthermore, a large amount of research indicates that the development of non-melanoma and melanoma skin cancer is strongly associated with UVR exposure in fair-skinned individuals who burn, find it difficult to tan and consequently are most at risk (Ibrahim & Brown, 2008). According to Pagoto, McChargue, Schneider, and Cook (2004), people with this skin type actively pursue a tan and are less likely to consistently engage in UVR protective behaviour.

Research has clearly shown that UVR emitted from solariums is almost five times stronger than the sun and can damage the eyes, the skin's immune response and cause photoaging of the skin (IARC, 2007). A report published by the Australian Radiation Protection and Nuclear Safety Agency adds further support to these claims (Gordon & Hurst, 2007). Results from this report which included a systematic review and a meta-analysis of 21 studies investigating the risks of skin cancers in relation to solarium use indicated a 22% increased risk of developing melanoma for

individuals who have used a solarium compared to individuals who had never used a solarium (Gordon & Hurst, 2007). Gordon and Hurst (2007) conducted a separate meta-analysis using a different metric to the IARC (2007) meta-analysis, and found that for those individuals whose first use of a solarium was under the age of 35 years, there was a 98% increased risk of developing melanoma (compared to a 75% risk suggested by IARC, 2007). Furthermore, the risk of squamous cell carcinoma is doubled for all solarium users compared to non-users (Gorden & Hurst, 2007).

It is evident throughout the literature that there are numerous potential health dangers to young women who engage in solarium tanning. Despite these findings, solarium use continues. To develop an understanding why young women continue to use solariums and its importance to the health care system, the social aspects of tanning need to be considered. The next section of this paper reviews the historical and social aspects of tanning.

### *Historical and Social Aspects of Tanning*

Social acceptability and the desire for a tanned skin colour have changed over time. The sophistication of new technologies brought with it changes in lifestyle and attitudes towards a tanned appearance (Salpietro & Del Campo, 1995). The introduction of air travel was initially only possible for the rich, and the ability to fly to warmer climates in winter and return with a tan became fashionable and a visual affirmation of their wealth (Salpietro & Del Campo, 1995). In the 1940s, revealing bathing suits such as the bikini further enhanced the popularity of sunbathing. Combined with reduced working hours and annual paid holidays, sunbathing was firmly entrenched in western cultures by the 1960s and 1970s (Randle, 1997). Today, the trend for tanned skin persists as women's magazines continue to promote revealing clothing fashions and images of young women with moderate to dark tans

as an attribute and fashion norm (Dixon, Dobbinson, Wakefield, Jansen, & McLeod, 2007).

Scientific findings initially suggested that there are health benefits from exposure to sunlight, which probably contributed to the popularisation and justification for tanning behaviours (Randle, 1997). For example, medical research has revealed the link between sunlight and vitamin D production for the cure and prevention of rickets provided a positive association between tanning and health (Salpietro & Del Campo, 1995). Initially, sunlamps that provided a UVR source were sold in the 1970s to treat a range of conditions including psoriasis (Randle, 1997). In 1978 the first commercial tanning salons/solarium enterprises opened in the United States advertising to the public a 'safe tanning' experience without burning. The commercial tanning industry was estimated to have increased from an annual revenue of one billion dollars in 1992 to a five billion dollar a year business by 2005 (Levine, Sorace, Spencer, & Siegel, 2005). The tanning salon industry has continued to promote health benefits and safety of artificial tanning (Levine et al., 2005) despite numerous scientific studies to the contrary.

Likewise in Australia, the increase in the popularity of artificial tanning is evident by the number of new solarium businesses which have opened over the past decade (Makin, Dobbinson, & Herd, 2007). A recent audit (using the Yellow Pages) found that the number of establishments whose core business was to provide indoor tanning services dramatically increased over the past ten years (Makin et al., 2007). Surprisingly, Perth, Western Australia (WA) which has the highest annual total UVR Index measurement compared to any other capital city (Gies et al., 2004), was reported to have the highest increase of tanning facilities, indicating an increase of over 1000% in the decade 1996 to 2006 (Makin et al., 2007). Sheilds (2007),

however, contended that this audit was a 'gross' underestimate of the true number of establishments that offer indoor tanning facilities because many other businesses such as resorts and day spas, hairdressers, beauty salons, and health and fitness centres also offer indoor tanning services.

Until recently, the Australian solarium industry has operated in each state under a voluntary code of practice (Jalleh, Donovan, Lin, & Slevin, 2008). Nationally, compliance with the standard has been poorly demonstrated (Lawler et al., 2006; Paul et al., 2005). Research in WA conducted by the Department of Health (2006) found 80 % of businesses were not in compliance with the voluntary standard. A study of solariums in Melbourne found that 90% permitted customers with skin Type I to use the facilities to tan and 75% of these centres advised skin Type I customers it was safe for them to tan (Dobbinson, Wakefield, & Sambell, 2006). Similarly in Queensland, results of a cross-sectional survey indicated that operators failed to inform customers of potential risks with more than 50% of solarium users not signing consent forms prior to use (Lawler et al., 2006).

Such findings, combined with intense media coverage resulting in increased public awareness following the highly publicised deaths of young women with melanoma attributed to solarium use (Jalleh et al., 2008), has led to several states, including Victoria, South Australia, and WA to introduce legislation to ensure tighter controls of solaria use control.

#### *Prevalence of Solarium Use*

In relation to estimates of cosmetic UVR exposure, research of comparisons between countries indicates differences which vary significantly in tanning behaviour (Gordon & Hurst, 2007). The highest prevalence of solarium use was in Sweden, where up to 28% of the population aged 19-40 years were reported to be



current solarium users (Boldeman et al., 2001). A systematic review by Lozovich and Foasters (2005) identified nine studies from the US and six from Europe showing that artificial UVR was used for cosmetic reasons. Lozovich and Foasters reported 24-30% of youth aged between 13-19 years had used artificial UVR for cosmetic reasons with 8-12% considering themselves frequent users. Although an in-depth review is limited by the paucity in the literature, generally in comparison, the prevalence and frequency of solarium use in Australia, is lower than countries in the northern hemisphere which get much less sunlight.

Australian research examining solarium tanning from cross-sectional population surveys involving 11,241 New South Wales residents (Centre for Epidemiology and Research [CER], 2005) and 9,298 Queensland residents (Lawler et al., 2006) report similar levels of solarium use (10 and 10.7%, respectively) (CER, 2005; Lawler et al., 2006). However, differences between Australian states are found in relation to current use of solariums. Survey responses indicated that 1% of Queenslanders (Lawler et al., 2006), 2% of New South Wales participants (CER, 2005) and 3% of 1,426 Victorian survey respondents reported using solariums in the past 12 months (Dobbinson & Borland, 1999). Nonetheless, approximately 400,000 Australians used solariums in 2006 (Gordon, Hurst, Gies, & Green, 2008). Furthermore, several studies indicate 22-39% of people who go to solariums are regular users; of these regulars, 35% visited solariums as many as one to four times a fortnight (CER, 2006).

National and international research examining the prevalence of solarium use have consistently confirmed a gender bias with females being significantly more frequent users of tanning salons than males (Demko, Boworaski, Debanna, Copper, & Strange, 2003; Hillhouse, Turrisi, & Kastner, 2000; Lawler et al., 2006; Lozovich

& Foster, 2005; Lazovich et al., 2004; McGinley, Martin, & MacKie, 1998; Paul, Girgis, Tzelepis, & Walsh, 2004). Australian studies indicated adolescent girls and women younger than 40 were higher solarium users compared to older women (Dobbinson et al., 2006; Lawler et al., 2006). US research reports of the one million people who used tanning salons daily, 70% are females aged between 16 and 49 years (Demko et al., 2003). The use of solariums rises rapidly with age, from ages 14 to 15 it more than doubles (7-15%) and again by age 17 (35%) (Geller, Brooks, Colditz, Koh, & Frazier, 2006).

When considering these research findings in relation to potential health hazards such as skin cancers, there is a sub-population of females among solarium users who are of special interest, and warrant further enquiry to examine the psychological determinants of why they use solariums. This is especially relevant for Australian solarium users because the majority of the population is of European descent with light skin (the group most at risk for skin cancer), who are already exposed to high levels of sun UVR due to Australia's well documented beach culture and a national engagement with outdoor sports and activities. So, the question is, despite the well documented risks, why do people still tan? A review of the literature which suggests the possible motives for solarium use is presented in the following section.

#### *Motives for Solarium Use*

The general trend from the literature is that most individuals, especially young women, generally reported tanned skin as being more attractive than untanned skin (Banks, Silverman, Schwartz, & Tunnessen, 1992; Broadstock, Borland, & Gason, 1992; Miller, Ashton, McHoskey, & Gimbel, 1990; Wichstrom, 1994), and perceived others as more attractive when they are tanned (Broadstock et al., 1992;

Clarke, Williams, & Arthey, 1997). Perceived attractiveness has been found to be an important factor with regards to the amount of time an individual will spend actively engaged in achieving a tan (Amir, Wright, Kernohan, & Hart, 2000; Leary, Saltzman, & Georgeson, 1997). Additionally, the desire to achieve a tan is strongly associated with tanning salon use (Hillhouse, Stair, & Adler, 1996). Leary and colleagues (1997) found individuals who were highly motivated by appearance to be significantly more likely to use tanning salons, which was also predictive in individuals engaging in tan maintenance by utilising both tanning salons and sunbathing.

Some authors contend that people are not only motivated to tan because they enjoyed what they believed to be an enhanced appearance but also importantly the attention they received from other people (Murray & Turner, 2004). This view is alluded to in other research findings which suggest tanning is motivated by beliefs that tanned skin makes an individual more attractive and therefore more sexually appealing (Broadstock et al., 1992; Miller, Ashton, McHosk, & Gimbel, 1990). Murray and Turner's (2004) study suggested that frequent solarium users gained increased confidence from the positive attention received from other people in relation to their tanned skin. Furthermore, there is an element of peer pressure involved in the motivation to tan, a view that is supported by several other investigators (Arthey & Clark, 1995; Broadstock et al., 1992; Jackson & Aiken, 2000; Keesling & Freidman, 1987; Lazovich & Foster, 2005).

However, Fiala et al., (1997) suggested an alternative explanation as to why young women regularly used sunbeds for appearance-related reasons. Their study is one of the few that involved participants (20-35 years of age) from the general population, and employed a control group. The differences between females who

frequently used sunbeds and those who did not were compared on their knowledge of UVR exposure risk and attitudes to tanning, self concept, narcissistic regulation, generalised self-efficacy and social assertiveness. Well established, psychological questionnaires designed specifically to measure narcissistic regulation, self-concept and social competence with validity of scales were utilised. Of the range of reasons cited for tanning, 93% of the participants cited that they did it for attractiveness reasons, and of the same participants, health reasons were cited 67% of the time. Of frequent sunbed users, 93% reported they tanned for appearance-related reasons such as being beautiful, attractive and erotic and 67% also indicated health reasons as a motivator for sunbed use. Interestingly, sunbed users had significantly higher measures of object devaluation, that is they feel other people are not worthy of their affection, hence, they are devalued and in regard to their feelings and relationships with other people, they were also found to have higher levels of anxiety. The authors concluded that tanning behaviour signified psychological influences in that, by engaging in sunbed use to become beautiful, users could devalue others which could in turn counterbalance their own anxiety regarding engaging in close relationships (Fiala et al., 1997). It is quite credible then, that if a frequent sunbed user's belief is that a tanned appearance is more beautiful, attractive and erotic, and people without a tan are perceived as less valued, the sunbed user's self confidence could be bolstered with feelings of superiority and self control.

Various quantitative studies overwhelmingly suggest that young women are motivated to use solariums for appearance-based reasons because they believe it improves their appearance. However, there is a noticeable lack of qualitative data which could provide deeper understanding into why the perception of tanned skin as attractive is such an important motivator for young women who use solariums.

Indeed, there may be other reasons which could be revealed through examining this topic by using a qualitative approach of enquiry.

Health reasons, the belief that the appearance of tanned skin projects an image of being healthy, or may assist in a person feeling healthy is another noticeable theme in the literature (Amir et al., 2000; Beasley & Kittel, 1997; Broadstock et al., 1992; Ezzidine et al., 2008; Knight, Kirincich, Farmer, & Hood, 2002; Murray & Rurner, 2004). Broadstock et al.'s (1992) research examined levels of tan in relation to the perceptions of being healthy. Their results indicated a medium tan to be judged as healthier than having no tan, although a dark tan was viewed to be less healthy than medium or light tans. However, as no system of defining 'more' or 'less healthy' is provided, how to interpret these findings is questionable because different participants may view what is healthy differently to each other. Perceptions of what is healthy may be a subjective issue.

Murray and Turner (2004) found participants related a tan to a 'healthy glow' which made them look healthy. A major reason participants had initially engaged in sunbed use was the perceived health benefits, including a desire to help to clear up any skin problems and having a pre-vacation tan to prevent sunburn. The belief that a tan acquired via a sunbed prior to going away on vacation would be beneficial in preventing sunburn has been reported in several studies (Beasley & Kittel, 1997; Cokkinides, Weinstock, O'Connell, & Thrun, 2002; Knight et al., 2002; McGinley, Martin, & MacKie, 1998). However, the concept of developing a 'base tan' and the perception that it is a protective measure is one of several myths associated with solarium use. According to Cancer Research UK (2006) such a tan offers little or no protection from sunburn. Holding such a belief could provide a false sense of

security and lead to increased UVR exposure by failing to utilise adequate sun protective behaviours while on holiday (Ezzedine et al., 2008).

Some authors have suggested that individuals, who reported they are motivated by the relaxing effect they enjoyed from tanning, may possibly have a form of psychological dependence implying that tanning could be addictive in nature (Beasley & Kittel, 1997; Knight et al., 2002; Zeller, Lazovich, Forster, & Widome, 2006). According to Bargh and Chartrand (1999), once habit-related behaviour is established, it is believed to be triggered by external or internal stimulus cues, and automatic activation of the behaviour is believed to occur in the presence of something which activates the behaviour. Feldman and colleagues (2004) conducted a double-blind controlled study aimed at ascertaining if frequent tanning bed users had psychological preferences for UVR light sunbeds over non-UVR light sunbeds. Their findings suggested that UVR exposure may be a reinforcing stimulus such that frequent tanning bed users significantly prefer using UVR light sunbeds (95%) compared to non-UVR sunbeds.

Kaur and his colleagues (2006) suggest support for neurobiological mechanisms as a possible mediator to frequent tanning behaviour. The authors hypothesised, that if cutaneous endorphins had a role in solarium users' drive to obtain UVR exposure, then conversely, a pharmaceutical endorphin could block the effect. Their small randomised, controlled trial of an opioid blockade (escalating doses of naltrexone) tested for psychological preferences for UVR light sunbeds over non-UVR light sunbeds and included frequent solarium users and infrequent solarium users. Participants were given either a placebo or naltrexone and after an hour's rest, were randomly exposed to both sunbed conditions. Following each session, participants gave their preference for a particular sunbed. The study found

that, on doses of naltrexone (15 and 25mg), frequent solarium users preferred to use UVR light sunbeds and infrequent solarium users taking the placebo drug showed less preference for the UVR light sunbeds. In addition, consistent with symptoms of opiate withdrawal induced by the opioid blockade, frequent solarium users also experienced withdrawal-like symptoms such as nausea and or jitteriness. Furthermore, none of the infrequent tanners reported any withdrawal-like symptoms.

Conversely, research conducted to explore possible connections between psychological benefits for solarium users and the role of neuroendocrine mediators such as serotonin, melatonin, and plasma levels of opioid peptides have found no such association (Gambichler, et al., 2002; Gambichler, et al., 2002). However, research in this particular paradigm is in its infancy, consequently there are a small number of studies, and published reports are limited in their generalisation due to small population samples. To date, the examination of this paradigm in relation to solarium use has been confined to dermatological practitioners rather than practitioners who specialise in the field of addiction research or psychological phenomena.

### *Knowledge and Tanning Behaviours*

In the examination of tanning practices several theoretical models have been developed to gain understanding why individuals may engage in unhealthy and healthy behaviours (Murray & Turner, 2004; Reynolds, 2007). A popular model developed to assist in the understanding health related behaviour is the Health Belief Model (Rosenstock, Strecher, & Becker, 1988). In relation to behaviour, the Health Belief Model suggests that an individual when exposed to UVR will adopt protective behaviours if they have certain beliefs. For example, if an individual believes they are susceptible to a medical condition such as skin cancer and also believe that skin

cancer can have potentially serious consequences, then protective behaviour will help reduce susceptibility or the severity of skin cancer and that any possible barriers to protective behaviour can be overcome (Rosenstock et al., 1988). Support for the Health Belief Model is found in many health-related domains and is one of the most widely used models for understanding health behaviour (Janz & Becker, 1984; Harrison, Mullen, & Green, 1992). Individual components of the model have support whereas others do not, and there are conflicting opinions on its application and usefulness for certain health issues (Janz & Becker, 1984; Harrison et al., (1992). The effectiveness and relevance of the four different components of the model being able to predict behavior appears to be related to the particular health issues (Greene & Brinn, 2003). Perceived susceptibility is thought to be key to this model of persuasion and is important for tanning behaviours because individuals need to acknowledge personal risk (Greene & Brinn, 2003). Public health promotion initiatives are theoretically based, and provide the impetus for educational interventions that advise of potential health hazards and promote preventative measures designed to reduce an individual's risk (Murray & Turner, 2004).

Research generally has shown mass media health promotion campaigns to be effective in raising awareness but it is less clear about the benefits of increasing knowledge or behaviour change (Smith, Ferguson, McKenzie, Bauman, & Vita, 2002). The evidence regarding how effective such campaigns are in relation to skin cancer is limited due to poor study design and measurement problems (Smith et al., 2002). Amongst the general population, studies have reported increase in skin checks (Lowe, Balanda, Del Mar, Purdie, & Hilsdon, 1994), increase in knowledge of risk factors and significantly higher increased protective behaviours (Smith et al., 2002). However, like other public health concerns, a number of researchers examining



tanning practices suggest possessing knowledge of the consequences of potentially detrimental risky behaviour does not necessarily lead to behaviour change (Hillhouse, Turrisi, & Kastner, 2000; Keesling & Friedman, 1987; Miller et al., 1990).

There is support for this notion from several authors who have examined health knowledge about UVR exposure behaviour. Monfrecola and his colleagues (2000) found that young people were aware of the risks associated with sunbathing and solarium use when they assessed their knowledge regarding the potential hazards of UVR exposure. Data was collected utilising an interview questionnaire from a stratified random sample of 756 students aged 16-21 years from 10 different high schools in Southern Italy. Items addressed sunbed use, sunbathing and sunscreen use, knowledge about the possible risk of sun UVR exposure or sunbed use, skin reaction to sunbed use, and skin cancer. Results showed that on a sunny day more than 50% actively enjoyed sunbathing (with greater prevalence among females). Of those who did not use solariums, 32% believed sunlamps to be dangerous and 90% of solarium users knew ultraviolet lamps could cause skin damage. Participants stated mass media as the main source where they had acquired almost all of their knowledge regarding UVR exposure. Enthusiastic sunbathers also used solariums, with 77% of solarium users also sunbathing for pleasure, which indicated users of solariums would be exposed to a cumulatively higher dose of UVR thus increasing their risk of developing skin cancer. The authors of the report concluded, although young people were well informed regarding the health dangers caused from UVR exposure they did not convert this knowledge into UVR protective behaviours (Monfrecola et al., 2000).

Likewise, Beasley and Kittel (1997) reported the impact of knowledge regarding health warnings and solarium use regulations on patrons of tanning facilities had little effect on their solarium use. Moreover, a positive correlation was found for patrons who more frequently visited solariums and their perceived immediate benefits of convenience and attractiveness of a solarium tan (Beasley & Kittel, 1997). A similar result was obtained by Knight and colleagues (2002), who found that despite college students' exceptional knowledge of associated risks in regard to solarium use and skin cancer detection, they continued to frequently use sunlamps. Cosmetic appeal was cited as the main reason for solarium use with most students enjoying a tanned appearance (Knight, Kirincich, Farmer, & Hood, 2002).

Collectively, these research findings suggest that people can possess high levels of knowledge regarding the potential health risks related to UVR exposure and regardless of this knowledge, they continue to use solariums. However, we do not know why this is so, it appears that there may be underlying factors which counteract the impact of personalising the potential hazards of solarium use. Future research is therefore necessary in order to acquire qualitative data of the phenomenological experiences of young women who use solariums to investigate these factors more fully.

Individuals who have experienced skin cancer or have had family members with skin cancer are presumed to have greater knowledge of associated risks of UVR exposure and of protective behaviours (McClendon & Prentice-Dunn, 2001). Higher rates of UVR protective behaviour have been found in people who have personal experience or family history of skin cancer, perhaps because of a perception of vulnerability (Weinstock, Rossi, Redding, Maddock, & Cottrill, 2000). In Keesling and Freidman's (1987) exploratory study, beachgoers were interviewed regarding

sunscreen use and sun tanning behaviour. Sun tanning behaviour was clearly related to relaxed mood, risk taking, little knowledge about skin cancer, friends who sunbathed and maintaining a positive physical appearance. They reported females used more sunscreen and sunscreen use correlated positively with skin cancer knowledge, knowing people with skin cancer, and reporting high levels of anxiety (Keesling & Friedman, 1987).

Conversely, a family history of skin cancer is found to be positively associated with tanning bed use (Knight et al., 2002). This finding is consistent with Geller and colleagues (2008) who found no difference in tanning bed use between the children of mothers diagnosed with skin cancer or who had a family history of melanoma when compared to adolescents without an affected mother or family history of melanoma. Moreover, Robinson (1990) reported over 38% of 1042 patients who had been treated for skin cancer and who had received an intensive health-based education intervention intended to reduce UVR exposure, failed to comply. Furthermore, even when individuals perceive vulnerability (Beasley & Kittel, 1997), or feel susceptible to skin cancer, it has little influence on changing their tanning behaviour (Broadstock et al., 1992). However, a positive association of tanning bed use and individuals with a family history of skin cancer (Knight et al., 2002; Geller et al., 2008) could be partially explained if an individual believed in the 'base tan' sunbed tanning myth as discussed previously.

Nevertheless, it appears that although individuals may be informed by mass media campaigns (Monfrecola et al., 2000; Smith et al., 2002) or education interventions (Robinson, 1990), possess a high level of knowledge regarding the risk associated with exposure to UVR (Knight et al., 2002; Monfrecola et al., 2000; Robinson, 1990; Fiala et al., 1997), know how to detect skin cancer (Knight et al.,

2002), and be aware of health warnings and solarium use regulations (Beasley & Kittel, 1997), these factors do not necessarily lead to changes in risky behaviours. The literature fails to explain why unsafe tanning behaviour continues even though people appear to have knowledge of the potential hazardous health consequences of such risky behaviour. Furthermore, if health promotion interventions primarily aim to educate the public on the potential health hazards in relation to risk taking behaviours rather than considering psychological determinants which may ultimately facilitate change, then it is not surprising that research findings regarding their effectiveness in behaviour change are unclear. This is especially so for a subgroup of tanners such as solarium users.

However, the phenomenon of ‘unrealistic optimism’ has been demonstrated to be a relevant factor in regard to individuals underestimating perceived risks associated with potential health problems (Weinstein, 1982). Unrealistic optimism is when a person sees themselves in the future as less susceptible than others and they underestimate the probability that bad things will happen to them (Weinstein 1980). This concept could partly explain why people continue to use solariums even though they are well informed about the potential health hazards they expose themselves to. According to Weinstein (1982), unrealistic optimism can minimise an individual’s motivation in protective health behaviour in relation to many health risks including skin cancer.

Miller and colleagues (1990) reported support for this position when they examined participants’ depth of skin tan level and self ratings regarding their chances of developing skin cancer. Participants’ self-reported suntan levels indicated that regardless of an individual’s skin tan level – light, medium, or dark – unrealistic optimism was found. Disturbingly, individuals with the darker tan level were least

concerned about associated risks (Miller, et al., 1990). Similarly, Beasley and Kittel (1997) found that indoor tanning frequency was significantly correlated with items such as “The tan I get from using the tanning bed is healthy” and “I can acquire a tan without damaging my skin”. Further support for this concept was suggested by Wichstrom (1994) who found that despite adolescent participants reporting frequent exposure to UVR, they perceived that they have the same or less chance than anyone else of developing skin cancer.

These few studies findings suggest that people who use solariums use may be engaging in optimism bias behaviour. However, the examination of unrealistic optimism as a mediating factor is noticeably missing from the literature and warrants further investigation. Moreover, the investigation of unrealistic optimism amongst solariums users could be enhanced by utilising a qualitative methodology of examination, which could uncover why these people attribute their rationale in relation to their solarium with an unrealistic optimism.

### *Conclusion*

Although there has been much investigation examining the health risks and prevalence of exposure to UV radiation surprisingly, there has been little research into the psychological aspects (e.g., motivations, attitudes and fears) of solarium use. This paper has examined the literature in relation to the psychological aspects and motivations behind why young women use solariums. From the literature reviewed thus far it is evident that solarium tanning behaviour is appearance based, although, why the perception of tanned skin as attractive, and why it appears to be such an important factor is unclear and requires further exploration. Solarium users are generally aware of health warnings, possess a high level of knowledge regarding the health dangers associated with exposure to UVR but still continue to tan via solarium

exposure to UVR. Why it is they continued to practice this risky behaviour remains a relative mystery.

However, the 'base tan' myth in conjunction with demonstrated findings of the solariums industry's poor compliance to regulations suggests there may be a connection to why solarium users believe that sunbeds to be safer than the exposure to the sun's UVR ray. It is possible, the belief that solarium UVR exposure as a healthy form of exposure is generated by solarium industry propaganda. Importantly, this paper has identified a lack of research, which addresses the possible addictive nature of solarium use and the impact it may have on young women's behaviour in relation to solarium use. Likewise, the concept of unrealistic optimism as possible mediator for solarium use remains relatively uninvestigated. In conclusion, the literature reviewed thus far strongly indicates a qualitative approach of enquiry which could facilitate the ability to access information-rich data to provide further knowledge of why young women use solariums would be beneficial.

Understanding young women's perspectives on solarium use is typically absent in the literature. In order to inform the design of effective primary-prevention programs for at-risk users of solariums, investigating the thoughts and feelings of those at-risk from tanning via a tanning bed is vital to understanding the motivations young women have when they tan. The broad aim of this study was to explore young women's perspectives on engaging in solarium use and the contextual factors which may influence their use. Accordingly, this study attempted to answer the following research question: What are young women's perspectives on engaging in solarium tanning?

## Method

### *Research Design*

This qualitative study utilised the principles of a constructivist grounded theory framework. A constructivist believes in the notion that people are unique; consequently their understanding and perceptions of an experience will be constructed differently (Crotty, 1998). Therefore, although many perceptions may exist, not one point of view is more valid or 'truthful' (Crotty, 1998). Grounded theory is inductive in nature and aims to construct theory by careful observations of the perceptions of the dynamic interactions of people and their social situations (Charmaz, 2006). The methodology of grounded theory is that the data is systematically gathered and analysed so that the data drives the conceptual categories (Strauss & Corbin, 1998). Theory is thereby developed during the research process from the emerging data and the reciprocal relationships between the data and analysis (Strauss & Corbin, 1998). Consequently, this approach was considered to be the most appropriate method to investigate the phenomenon of interest given the exploratory nature of the research and the paucity of literature that examines young women's perspectives on engaging in solarium use.

### *Sample*

Participants were recruited for inclusion in the study utilising several different sampling and recruitment techniques with the intention to minimise potential sampling bias (Morse, 2001). In the initial stage of recruitment, to identify suitable volunteers, eligibility for inclusion to the study was established by using criterion sampling selection (Patton, 2002). Female participants were required to be aged between 18 to 35 years, English speaking, residing in Perth metropolitan area, and who have gone to solariums for the purpose of tanning. Participant recruitment was further refined by engaging in purposive sampling with the aim of achieving greater variability of women's experiences in solarium use (Morse, 2001, Patton,

2002). Purposive sampling facilitates the ability to access information-rich participants and similarities across respondents can be identified which enables the researcher to acquire a deeper level of understanding of the investigated phenomena (Patton, 2002).

To assist in the construction of ideas and theoretical categories from the data collection and analysis, theoretical sampling (a form of purposive sampling) was also utilised (Charmaz, 2006). Consistent with the methodology of grounded theory, theoretical sampling strategies can direct the researcher to expand, focus, and refine the sample as the data evolves from analysis (Strauss & Corbin, 1998). By utilising this particular approach, the number of participants required for the study was controlled by the data gathered which enabled saturation of categories and the emerging theory (Charmaz, 2006).

Potential participants were recruited in three ways. First, a media release (Appendix A) containing information about the study and a request for participants was sent to community newspapers in the Perth metropolitan area. Second, a poster (Appendix B) containing information about the study was posted on ECU noticeboards and was distributed to fitness and beauty establishments which offered solarium services. Third, a snowball sampling technique was employed in which participants recommended the study to other potential participants. These sampling and recruitment techniques resulted in eight female participants whose first language was English, aged between 22 and 40 years with solarium use varying from as little as three solarium sessions to 20 years of solarium use experience. This was an educated sample of women; seven had completed tertiary education and one had completed high school. All the women resided in Perth metropolitan area.

#### *Interview Schedule*



A semi-structured recursive in-depth interview schedule (Appendix C) was employed which enabled interviews to be conversational in style. Recursive interviews allow the participant and researcher to create structure to the interview from the conversational interaction which develops between the researcher and the participant (Minichiello et al., 1995). A collaborative approach was pursued whereby the interviewer adopts an active listening style (Burgess-Limerick & Burgess-Limerick, 1998). The semi-structured approach allows some consistency across participants regarding topics discussed and facilitates the researcher to be spontaneous to participants' responses by generating appropriate questions and probes (Berg, 2001; Smith, 1995). In essence, the interview is a directed conversation which is particularly useful in obtaining in-depth data of an individual's perceptions of situations, and their interpretations of feelings and experiences (Charmaz, 2006).

### *Procedure*

Following approval from the Faculty of Computing, Health, and Science Research Ethics Committee, potential participants who had expressed interest and met the initial sampling criteria were contacted via telephone to arrange a mutually convenient time and date to conduct the interview and to answer any questions regarding the purpose and aims of the research. To ensure a comfortable non-threatening environment interviews were conducted at a private and safe location chosen by the participant. Prior to each interview, the researcher introduced herself and re-explained the purpose of the research (reading from Appendix D). Participants gave their written consent (see Appendix E) to being recorded for their interview. They were informed prior to the interview that their participation was

voluntary and that they could refuse to answer any questions, or to withdraw from the study at any time without consequence.

Each in-depth conversational interview was audio recorded with the intention of revealing participants' perceptions and interpretations of their experiences. The interview was flexible and ranged from 45 minutes, to 15 minutes. This flexibility in the interviews reflected an accommodation for the responses of each participant and their level of engagement in the interview process. After each interview, participants were debriefed and provided with contact details of several counselling services (Appendix E). The debriefing session was not digitally recorded and all of the women advised the interviewer that they did not require counselling. The women were thanked for their participation, and offered a summary of the results to be sent to them on completion of the study. After each interview, the recording was transcribed verbatim.

### *Ethical Considerations*

Although it was not anticipated that the interviews would cause participants any distress or be intrusive in nature, the interviewer was sensitive to the participants. Thus, the interviewer attempted to minimise any potential distress or upset by displaying no opinions about their solarium use, so the participant did not feel judged in any way.

To ensure confidentiality a number of strategies were employed. First, when interviews were transcribed, no name or identifying information was used and all participants were assigned a pseudonym. Second, all consent forms were kept separately from interview transcriptions. Finally, all interview transcripts and digital recordings were locked in a filing cabinet located in the School of Psychology and Social Science at Edith Cowan University in Joondalup.

*Analysis*

Data collection and analysis occurred concurrently until saturation (defined as no new information being revealed) was achieved via the confirmation and recurrence of data and themes from participants' data (Charmaz, 2006; Strauss & Corbin, 1998). Following transcription of the interviews to analyse the data in a grounded theory framework, several techniques were engaged in coding, memo-writing, and theoretical sampling, (Charmaz, 2006). Initial coding of the data involved categorising the data by reviewing, underlining and circling the data transcript and then rewriting a concept of the meaning as an action in the margin of the document (Charmaz, 2006). A 'constant comparative method' (Glaser & Strauss, 1967, as cited in Chamaz, 2006) was adopted to guide and inform the researcher's analysis. In this method, what participants said was compared with both what they had already said and with what other participants said. The goal of this comparative method was to try and establish connections between initial coding, focus codes and core categories to make 'analytical sense' of the data (Charmaz, 2006).

Once an analytical direction had been established with a line by line analysis approach to the data, 'focused codes' were introduced which are a more selective, direct and conceptual in nature (Charmaz, 2006). The frequent and most significant earlier codes were re-examined, questioned and decisions were made in regard to re-categorising and collapsing into more focused coding (Charmaz, 2006). With the intention of achieving a coherent and comprehensible analysis with conceptual order once the categories had become sufficiently dense, they were then linked by clarifying context, specific conditions, relationships between concepts, directions of relationships and outcomes (Chamaz, 2006). Furthermore, diagramming (in the form of situational mapping) was used at several stages of

analysis to provide concrete visual representation and as a tool to assist in identifying the relationships between codes and categories (Charmaz, 2006).

To complement coding of data and to assist in analysis of data, memos were written throughout the data collection. Memo writing is considered a useful tool, which assists in identifying common themes or contradictions in the data, as well as provide a place for reflection, question and hypothesis development so developing theories can be documented (Charmaz, 2006; Strauss & Corbin, 1998). These memos took several forms such as reminder notes, summaries of research activities and meetings with supervisor, and reflections on the research process. The memos also provided an audit trail which also assisted in establishing rigor (Liamputtong & Ezzy, 2005).

Additional methods were employed to establish rigor (Patton, 2002; Liamputtong & Ezzy, 2005). For example, data was collected from purposively sampled participants, observations during interviews and by the reading articles about solarium use in newspapers, magazines, and websites. Rigor was also established by examining the publicity put out by the solariums themselves and the Association for Solarium Proprietors. Finally, to ensure interpretive rigor, coded themes were verified with the supervising researcher, and the participants, to confirm that the findings were reflective of participants' perspectives (Sandelowski, 1986). By engaging in all of the above processes, rigor of the research was ensured.

### Findings and Interpretations

Regardless of the participants' experience with past or present solarium use, perspectives on engaging in solarium use were reasonably consistent and formed a set of coherent core themes. Whilst interviewees highlighted the attractions and benefits of solarium use, the negative impacts resulting from engagement in solarium

use were also identified. The main finding of this study is that ‘being in control’ was the ‘core category’ or storyline underlying participants’ responses. Three core themes emerged from the data. These core themes, along with the sub-themes that generated them are presented in Table 1.

Table 1.

*Core Themes and Focus Codes Related to Women’s Solarium Use*

Core Themes	Sub-Themes
Positive reinforcers	Body image
	Attention
	Me time
	It’s addictive
Possessing knowledge	Health impacts
	Positive health spin
Change	Personal experience
	Societal attitudes
	Cumulative pressure

*Positive Reinforcers*

The core theme ‘positive reinforcers’ evolved because it represented key attractions to solarium tanning and maintaining a tanned skin. All of the participants reported experiencing some form of psychological impact, such as an emotional response or change in mood with the physical reward of having achieving a tanned skin. For example “*I think for me, it was [solarium tanning] definitely an appearance thing, probably self-esteem thing*” (Vicky), “*I like it, I think it makes*

*you feel nice” (Gail), “I actually liked the way I felt and looked with a tan”, “It just makes me feel good; I like when I have a tan. I feel a lot healthier, a lot happier” (Susan)*

*Body image.* When participants were asked to talk about their solarium tanning and what it meant to them, a major positive reinforcement identified in the data was ‘body image’. For example, *“initially it was purely a wanting to be a tanned ... have a tan, for image reasons...it just makes you feel a bit better about your self” (Gail), and “body image, it does ... having a tan is ... everyone gorgeous in glossy magazines is brown” (Wendy)*

Some participants expressed how they could control self-presentation (impression management) with a tanned skin.

*Depending on how white your skin is, you see veins, you see all imperfections, when you've got a tan you don't tend to see so much, the veins and imperfections and, you know, whether you've got spider veins here and that's because it's covered by a tan (Vicky),*

*“I think um having a browner skin is more attractive, well a very tanned skin hides a lot of flaws, cellulite all those good things [laugh]” (Anna).*

The belief that a tanned skin projected an image of being thinner, enhanced muscle definition and therefore a person appeared to be healthier, was an important factor for some participants. For example, Vicky stated, *“darker skin, or a tan, people look slimmer, people look healthier, people presume you're healthier because you obviously must spend a lot of time outdoors because you're tanned”,*

*I suppose I do get quite preoccupied with my weight and whatever, uhm, and I do honestly think, like tanned bodies look skinnier, like look more toned, look nicer...but I do think the browner I am the happier I am with my size. It's weird. I think brown bums are smaller bums”... (Wendy).*

Although the finding that the perception of tanned skin as attractive is consistent with the literature (Banks et al., 1992; Broadstock, et al., 1992; Miller et al., 1990;

Wichstrom, 1994), the importance young women place on their perceptions of their own physical appearance in relation to a solarium tan and the control over self presentation without a tan is absent. Thus, the current study's findings were particularly important as they indicate that interventions may be more effective if the aspect of control over body image and self-presentation were targeted.

*Attention.* Related to the sub-theme 'body image' is the sub-theme 'attention'. Several participants expressed how they enjoyed the attention they received when tanned. *"people are like, "you're looking really good"...you'd get the comments like people saying, "you're looking nice and brown",... that's always got to make you feel a bit nice"* (Wendy). Some participants believed that a tan made them more sexually attractive: *"I want to look attractive, I want to be noticed, yes it's about being noticed"* (Joanne), and *"like the guys from work would go, "why are you so tanned"?"* (Vicky). These findings support previous research, which indicated people are not only motivated to tan for an enhanced appearance but also the attention they received as a result of a tanned body (Murray & Turner, 2004). Furthermore, the finding that the belief a tan is more sexually attractive is important given the value women may place on the potential reward of such important interpersonal relationships.

*Me time.* "Me time" was selected as a sub-theme because it represents several enjoyable benefits that were identified which are illustrated by the following participants' quotes: *"it's nice the creams they put on and that's always nice too, you know, pamper yourself, you feel nicer... It's like going to get your nails done"* (Jill), *"You're coming from the cold outside, you go in there [solarium] for 10 or 15 minutes and it's so warm it's just relaxing you just fall asleep...you don't do anything you just lay there"* (Gail).

*Next thing I know I'd be half-asleep. Then I'd wake up after it's done and kind of go, right, off I go, and carry on with my day. So for me it was 20 minutes out of my day that I just did nothing. Stopped still, didn't talk, didn't do anything, that was it ... yeah ... relax. It was quite relaxing' (Vicky).*

The findings of relaxing effects are reported in the literature as a motivator to tan (Beasley & Kittle, 1997; Knight et al., 2002; Zeller et al., 2006). However, it appears from this current study's findings that relaxing effect is just one aspect of the value attached to being able to control the pace and demands of a busy life by spending time on one's self.

*It's Addictive.* 'It's addictive' was identified as an 'in vivo code', as such, the code evolved from the participant's exact words, words that were continually repeated (Glaser & Strauss, 1967). Indeed, over 50% of the participants expressed how they believed their solarium use was as a form of addiction. For example, *"it's addictive because you get a tan and you want to keep going to prolonging it... I was over using it ...was kind of addictive in a way"* (Gail), *"it becomes addictive it's like exercise, you know, if you exercise every day they say that it starts to become addictive that's how I felt about tanning"* (Helen). One participant related solarium use with the feelings achieved by drinking alcohol and taking drugs.

*It can be addictive. Because it's ... like with anything, if you enjoy it, it looks good, or it makes you feel good, why wouldn't you do it? Whether it be drugs, alcohol, drugs and alcohol, uhm, why wouldn't you?.. it gives you a feeling of, not so much pleasure but feeling good. Why would you not? It can get, as I said, addictive. (Vicky)*

Joanne reported that she had recently suffered distress whilst on holiday in South Africa. *"I felt awful because I hadn't been to the solarium; I felt panic because I hadn't been for days... I could see my tan fading... I've felt the same if something*



*happens and I can't get to the solarium"* It is quite understandable that such experiences would be a barrier to stop tanning.

Some participants expressed some feelings of guilt and intention to conceal their use from friends, *"I kind of hide it, I'd get a tan on the day I wasn't going to see her and then I'd say oh no no I haven't been tanning"* (Helen), and boyfriends, *"he knows I'm using the spray tan so he probably thinks that I'm not doing the solarium at all. He probably just doesn't realise I go to the solarium"* (Gail).

The finding 'it's addictive' focus code is important because although very few studies have hypothesised about the possible link between solarium tanning and psychological dependence (Beasley & Kittle, 1997; Knight et al., 2002; Zeller et al., 2006), this current study finding strongly suggests people can become psychologically dependant on having a tan. Therefore, future interventions should acknowledge and accommodate for people who are in a dependant state and as such may be experiencing difficulty (ranging from mild to severe intensity) in not engaging in the behaviour.

### *Possessing Knowledge*

Possessing knowledge emerged from the data because it reflected the different types of knowledge articulated by the participants. This knowledge included facts, probabilities, and opinions. However, it appeared from the data many of the participants did not necessarily recognise if the knowledge was actually a fact, a probability, or an opinion. This could be because of the many sources from which information had been accessed such as health education campaigns, media, solarium proprietors, and personal experience. Further, the conviction participants had in the supplier of the information was also a factor in how such information was received.

Despite this, all the participants were quite knowledgeable and acknowledged the real possibility of negative health impacts associated with their solarium use.

*Health impacts.* The sub-theme of ‘health impacts’ was a major focal point for all participants. For many participants it was the possible negative health impacts, which appeared to be uppermost in their thoughts. Most participants appeared to want to press the point that they were knowledgeable and aware of the dangers of UVR exposure. The following comments illustrate this: “ *well er you’re basically burning your skin when your tanning*” (Anna), “*I’m not stupid, I know that, you know, sunbeds cause cancer and all the rest of it, just like the sun does*” (Gail), “*I’d heard many reports that they were [sunbeds] actually worse than the sun... uhm, so that was never a factor in stopping me from going*” (Vicky), and “*I’ve always known that it’s just a different type of UV...I’ve never been naive to the fact that sunbeds... I knew before I even started using them, that they were worse than the sun*” (Wendy).

These reports are suggestive of ‘unrealistic optimism’ (Weinstein, 1982) in that the participants may be under estimating their chances of suffering negative health effects. These findings add support to previous literature (Beasley & Kittel, 1997; Miller, et al., 1990; Wichstrom, 1994).

Physical changes to the skin’s appearance experienced by most of the women was explained, sometimes in extensive detail, and was often viewed as an almost inevitable consequence of their solarium use. The following quotes are examples of this, “*obviously your skin starts to age as well... obviously you get a few more freckles as well, I’ve got a few more freckles since using it [solarium]*”(Gail), “*obviously, it is not good for you uhm coming of uhm when you stop using it, your skin fades, and your freckles are darker than when you began*” (Anna), and “*I see*

*my dermatologist now I'm getting older twice a year, especially now I've have noticed changes in my skin, like brown cruddy, scabby bits on my face" (Joanne).*

These findings were consistent with the available literature, which indicated that despite being relatively knowledgeable of associated risks in regard to solarium use and skin cancer detention they continued to use solariums (Beasley & Kittel, 1997; Knight et al., 2002).

All of the participants reported their knowledge in relation to recent extensive media exposure regarding a woman who claimed she had developed melanoma skin cancer from solarium use. For example, one participant who had worked in a solarium for two years explained the impact and her knowledge regarding the situation.

*...when were working [in the solarium] people would come in and say, "we heard this on the news" I mean all the publicity about it is bad you know, that girl died or something, she had melanoma. That Asian girl, but she also said, you know, she went every day ehm... but they don't really publicise that. It's only if you read like an article, but nothing like that was mentioned on the news. (Helen)*

Another participant reported her disbelief of the situation and the source of the knowledge that led her to this conclusion.

*....they said to me [solarium proprietors] you know something must have been inside her already, that its triggered the cancer, it was obviously already there, and the solarium has triggered it, which you know is bad but, I don't think you can blame it all on the solarium. You know from start to finish, that was my thoughts on it I don't believe that yes. (Gail)*

This finding is consistent with previous research conducted by Jalleh et al., (2008), which suggests awareness is increased following intense media coverage of the highly publicised death of young women with melanoma attributed to solarium use. However, this current study's finding also suggests that despite the increased awareness, participants disputed and questioned the validity of the publicity. This

finding has important implications with respect to health interventions intended to modify behaviour that utilise mass media as a vehicle to target solarium users.

*Positive health spin.*

The sub-theme ‘positive health spin’ is related to the sub-theme ‘health impacts’ and refers to how respondents expressed a positive application of their knowledge of health issues related to UVR exposure. All of the participants were aware of the effects of UVR exposure via the sun and most expressed the importance of controlling their own exposure to the sun’s UVR in relation to their own solarium use. For example, *“I never used to go out in the sun ... I don’t do a lot outdoors as such, like, you know, I’m not an outdoor sport player, I don’t go to the beach”* (Vicky), and *“I’m obviously, I’m not out in the sun I don’t want to be doing both”* (Gail).

In addition, some participants reported that by using solariums they had some control over potential negative health impacts from sun UVR, *“if you go to the solarium, I can kind of monitor the amount of sun I was getting, I wouldn’t burn, and I would just go brown. Whereas if I sat out in the sun, I would probably burn”* (Anna), *“you use the solarium in moderation then it’s, I think safer than going outside and tanning because you’ve got protective cream you never come out of a solarium burnt unless you use it irresponsibly”* (Helen) and *“obviously during winter time there’s very, very little sun and with the solariums it’s a controlled environment”* (Susan)

These findings support previous research which suggests the Australia public are fairly well-informed with respect to the effects of UVR exposure via the sun (Marks, 1994) and consistent with Beasley and Kittel’s (1997) research solarium users were found to perceive solariums less risky than tanning outdoors. However,

this current study's finding also suggests that solarium users are aware of the potential for double exposure if sunbathing and using solariums. In addition, solarium users were found to believe solariums facilitate the ability to obtain more control in relation to the amount of UVR exposure.

### *Change*

Change is the final core theme that emerged from the data and represents what the participants reported as an outcome of external controlling factors, which mediated change in attitudes or behaviour.

*Personal experience.* 'Personal experience' was identified from the data as a sub-theme because it represented issues that were expressed by the participants to have some force or influence on them which moved them towards a position of change. For example,

*We were good friends, she used to use the solarium but then she went and got her moles checked and they said to her they had changed quite dramatically from the last time she got it checked, so then that got... you know I was a bit hesitant then... but I cut down to say once a week.*(Helen)

Another participant reported her painful reaction following using the solarium "I was like, I couldn't tolerate it. I was just like, couldn't sit still, scratching and scratching, and then got home and I just like broke out in hives from this thing" (Wendy). One participant reported on the pressure to stop using solariums she felt from her parents.

*my parents used to say "oh stop going and it's not good"... my mum's most mostly like that, she's, yeah, obviously the skin cancer and that, she doesn't want me to get stuff cut out or whatever which I fully respect, and I didn't go for while but* (Gail)

*Societal attitudes.* 'Societal attitudes' is related to the focus code 'personal experience' and reflects the participants' reports of pressure experienced from different areas of society. The following quotes highlight different aspects of how societal pressure was expressed, with some participants affected by this pressure in several ways.

*I mean recently, in the last what ... year or so, solariums have copped quite a bit of a ... and they've been in the news and I suppose the knowledge of really what they can cause, uhm, is more out there... I suppose you can't ignore the current issues in, you know, solarium use (Wendy)*

*when I saw, I saw it [the news that a girl had died from melanoma attributed to solarium use] I was a bit oh, you know a bit worried because I thought I've been using the solarium I should, you know, and I did stop, I did stop using it probably for about 5 or 6 months because I was like oh I won't bother (Gail)*

Some participants reported being affected by this in more than one way. The following two quotes from the same participant are an example of this.

*People from work have had cancers cut out but these are also people that spend a lot of time in the sun. Okay, don't use sunbeds. [Laughs] But, still spend a lot ... it's just a reality. Like my boss, who, you know, is 60 odd, has had lots cut out, because back in their day they hung out on boats all day and did all the rest of it. There was not, you know, that whole thing. Another lady at work who's in her forties has had a lot, had a massive one cut out of her nose and that, and it just ... I guess as well, the Asian girl who did pass away ... (Vicky)*

*My main reason for going there [for a skin check] was because I knew I'd been going to the solarium and I do know the risks, so I thought, well, it's about time. I've been going now for, say, six years. I probably should. But at the same time, I was too embarrassed to go with a full tan, and having to say, "yes, I use a solarium". Because I know that's just as stupid (Vicky)*

*Cumulative pressure.* 'Cumulative pressure' was selected as a sub-theme because it evolved from 'personal experience' and 'societal attitudes' sub-theme and represents the power that both personal experience and societal attitudes when combined can have on moving a solarium user to make change. The following quote describes how cumulative pressure can foster change.

*I think ... you know, it's like smoking. If you know someone that's passed away from lung cancer or something, you're more inclined to take on and see the reality of the risks, I suppose, and I ... as well as my horrible experience, which was really right, I think, before all the solariums were really under pressure and used and all of that. Uhm, so I think that, my experience, as well as all the media attention it was getting [Solarium use] allows you just to take more seriously what's being said. Because I'd seen like the possible reaction you can get; you can see ... and two different things. Like what I'd had wasn't skin cancer or what but it was a extreme skin reaction to the*

*whole process...so the two of them: it being in the news so much, it was just ... it allowed me and made me take on board more what was being said because I had ... I was open to all that. (Wendy)*

### Summary and Conclusions

Australia has the highest rate of skin cancer in the world causing a significant burden to Australia's health care system. Despite a general public awareness that by limiting exposure to UVR most diagnosed cancers are preventable, young women continue to actively pursue a tan via solarium. Thus, the aim of this study was to investigate young women's perspectives of solarium tanning and what issues may influence the attraction and motivations that underpins their solarium use. A qualitative approach of investigation allowed for a more enriched understanding of issues, which had previously been suggested by more statistics based research and enabled new issues to surface. Whilst interviewees highlighted the attractions and benefits of solarium use, the negative impacts were also identified. Accordingly, the findings from this study strongly indicated that women who used solariums were able to gain control over body image concerns by engaging in impression management. Furthermore, although a tanned skin could provide them with the reinforcing rewards, it also appeared to trigger a psychological dependence.

Although appearance related reasons have been reported as a primary motivator for solarium use in numerous past studies (Fiala et al., 1997; Leary et al., 1997; Murray & Turner, 2008), an important finding in this study was that the participants were concerned with body image issues such as weight and skin imperfections. Furthermore, the belief that a tanned skin projected an image of being thinner, and enhanced muscle definition provided some valuable insights that could be pivotal for developing effective interventions for this particular at risk population.

An important finding of this study was identification by many of the participants regarding the addictive nature of having a tanned skin. Psychological dependence was clearly an issue for some participants (e.g. "I felt panic because I hadn't been for day's) and as such would be a barrier to stop solarium use. Such findings indicated that some people may benefit from Behaviour therapy to assist with managing these difficulties. Therefore, future interventions should accommodate the possibility that psychological dependence to maintain a tan exists, thus acting as a barrier to stop solarium use.

In relation to the health impacts of solarium use, participants were clearly knowledgeable to possible detrimental health effects of solarium use and were aware that solarium UVR was more damaging than the sun's UVR. This suggested that they were engaging in unrealistic optimism. This finding adds further support to results from previous studies (Beasley & Kittel, 1997; Miller, et al., 1990; Wichstrom, 1994).

Congruent with the available literature, most of the women were very knowledgeable of the possible aging effects of solarium use on the skin. In addition, the study highlights the fact that women who used solariums appeared to be highly attuned to changes in their skin's appearance. Indeed, some changes in skin appearance were acknowledged by the women. Furthermore, some women had incorporated regular visits for skin checks because of their solarium use. This suggests that women who use solariums may be more aware of the different ways in how UVR can affect the skin and therefore, be more actively vigilant regarding any possible skin changes.

A unique finding of this study was that all of the participants were aware of the recent intense media coverage regarding the death of a young woman who



attributed her melanoma skin cancer to her solarium use. Of further interest was that the participants expressed disbelief of the validity of such claims, with preference to believe solarium proprietors, whom have been found in the past not to have followed regulations. It is quite possible then proprietors of solariums may encourage an alternate reason for the woman's health situation to protect their own financial security. This finding has important implications with respect to health interventions intended to modify behaviour that utilise mass media as a method of distribution.

There are some limitations to the study, which concern the voluntary nature of participation and deserve some consideration in respect to the findings. The accuracy of data gathered during interviews has the potential to be changed by the participant for a number of reasons. For example, sabotage the research, be embarrassed, could lie, and be too embarrassed to tell the truth, have difficulties in remembering and be suspicious or take a dislike to the interviewer (Breakwell, 1995). Similarly, interviews are susceptible to researcher effects and characteristics such as age (Breakwell, 1995).

Future research could expand upon this current study by incorporating adolescents and women aged over 40 years and who reside in different states of Australia. In doing so, attractions and motivations specific to different age groups and demographic locations could be identified, thus making it possible for interventions to be developed which target particular groups and/or behaviours.

The results from this study make a unique contribution to the body of knowledge by exploring young women's perspectives on tanning in solariums. It was apparent in the current study that enabling expression of young womens' perceptions on solarium use was crucial to identifying the factors that motivated the young women to use solariums. As such, further studies specific to women and solarium

use are warranted, especially regarding psychological dependence . Increasing knowledge in this area will improve policy formation for public health education and inform practice.

## References

- Australian Government Bureau of Meteorology. (2008). *Annual climate summary for Perth*. Retrieved March 10, 2008 from <http://www.bom.gov.au/climate/current/annual/wa/perth.shtml>.
- Australian Institute of Health and Welfare. (2005a) *States & territories GRIM (General Record of Incidence of Mortality) Books*. Canberra: AIHW.
- Australian Institute of Health and Welfare (AIHW). (2005b). *Health systems expenditures on cancer and other neoplasms in Australia 2001-01*. AIHW cat. No. HWE 29. Health and Welfare Expenditure Series No 22. Canberra, Australia: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2005) *States & territories GRIM (General Record of Incidence of Mortality) Books*. Canberra: AIHW.
- Australian Institute of Health and Welfare & Australasian Association of Cancer Registries. (2007) *Cancer in Australia an overview, 2006. Cancer Series Number 37*. Canberra: AIHW. Retrieved 8 December from <http://www.aihw.gov.au/publications/can/ca06/ca06.pdf>.
- Australian Radiation Protection and Nuclear Safety Agency, (2003). *Resource guide for UV protective products*. Canberra, Australia: ARPANSA
- Amir, Z., Wright, A., Kernohan, E. E., & Hart, G. (2000). Attitudes, beliefs and behaviour regarding the use of sunbeds amongst healthcare workers in Bradford. *European Journal of Cancer Care*, 9(2), 76.
- Armstrong, B. K. (2004). How sun exposure causes skin cancer. In D. Hill, J. M. Elwood & D. R. English (Eds.), *Prevention of skin cancer*. Dordrecht: Kluwer Academic Publishers.

- Banks, B. A., Silverman, R. A., Schwartz, R. H., & Tunnessen, W. W. (1992). Attitudes of teenagers toward sun exposure and sunscreen use. *Pediatrics*, 89(1), 40-42.
- Bargh, J., & Chartrand, T (1999). The unbearable automaticity of being. *American Psychologists*, 54, 462-479.
- Beasley, T. M., & Kittel, B. S. (1997). Factors that influence health risk behaviors among tanning salon patrons. *Evaluation & The Health Professionals*, 20(4), 371-388.
- Boldeman, C., Bränström, R., Dal, H., Kristjansson, S., Rodvall, Y., Jansson, B., et al. (2001). Tanning habits and sunburn in a Swedish population age 13–50 years. *European Journal of Cancer*, 37(18), 2441-2448.
- Breakwell, G. M. (1995). Interviewing. In G. M. Breakwell, S. Hammond, & C. Fife-Shaw (Eds.), *Research methods in psychology* (pp. 230-242). London:Sage.
- Broadstock, M., Borland, R., & Gason, R. (1992). Effects of suntan on judgements of healthiness and attractiveness by adolescents *Journal of Applied Social Psychology*, 22(2), 157-172.
- Cancer Council UK. (2006). Sunbeds and skin cancer. UK:Cancer Council.Retrieved March 10, 2008 from <http://info.cancerresearchuk.org/healthyliving/sunsmart/advice-and-prevention/sunbeds/>
- Centre for Epidemiology and Research. (2006). *New South Wales Population Health Survey:2005 Report on Adult Health*. Sydney, Australia: NSW Department of Health.

- Chapman, S. (1992). Trends in tans and skin protection in Australian fashion magazines, 1982 through 1991. *American Public Health Association, 82*, 1677-1680.
- Clarke, V. A., Williams, T., & Arthey, S. (1997). Skin type and optimistic bias in relation to the sun protection and suntanning behaviors of young adults. *Journal of Behavioral Medicine, 20*(2), 207-222.
- 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.
- Crotty, M. (1998). *The foundation of social research: Meaning and perspective in the research process*. St Leonards, New South Wales, Australia: Alen& Unwin
- Demko, C. A., Borawski, E. A., Debanne, S. M., Cooper, K. D., & Strange, K. C. (2003). Use of indoor tanning facilities by white adolescents in the United States. *Archives of Pediatrics and Adolescent Medicine, 157*, 854-860.
- Dixon, H., Dobbinson, S., Wakefield, M., Jamsen, K., & McLeod, K. (2007). Portrayal of tanning, clothing fashion and shade use in Australian women's magazines, 1987 2005. *Health Education Research*.
- Dobbinson, S., & Borland, R. (1999). Reaction to the 1997–1998 SunSmart Campaign. Results from a representative household survey of Victorians. *SunSmart Evaluation Studies, 6*.
- Dobbinson, S., Wakefield, M., & Sambell, N. (2006). Access to commercial indoor tanning facilities by adults with highly sensitive skin and by under-age youth: compliance tests at solarium centres in Melbourne, Australia. *European Journal of Cancer Prevention, 15*(5), 424.

- Ezzedine, K., Malvy, D., Mauger, E., Nageotte, O., Galan, P., Hercberg, S., et al. (2008). Artificial and natural ultraviolet radiation exposure: beliefs and behaviour of 7200 French adults. *Journal of the European Academy of Dermatology and Venereology*, 22(2), 186-194.
- Feldman, S. R., Liguori, A., Kucenic, M., Rapp, S. R., Fleischer, A. B., Lang, W., et al., (2004). Ultraviolet exposure is a reinforcing stimulus in frequent indoor tanners. *Journal of the American Academy of Dermatology*, 51(1), 45-51.
- 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.
- Fitzpatrick, T. B. (1988). The validity and practicality of sun-reactive skin types I through VI. *Arch Dermatol*, 124(6), 869-871.
- Gailani, M. R., Leffell, D. J., Ziegler, A. M., Gross, E. G., Brash, D. E., & Bale, A. E. (1996). Relationship between sunlight exposure and a key genetic alteration in basal cell carcinoma. *Journal of the National Cancer Institute*, 88(6), 349-354.
- Gambichler, T., Bader, A., Vojvodic, M., Avermaete, A., Schenk, M., Altmeyer, P., et al. (2002). Plasma levels of opioid peptides after sunbed exposures. *British Journal of Dermatology*, 147(6), 1207.
- Gambichler, T., Bader, A., Vojvodic, M., Bechara, F. G., Sauermann, K., Altmeyer, P., et al. (2002). Impact of UVA exposure on psychological parameters and circulating serotonin and melatonin. *British Journal of Dermatology*, 147, 1207-1211.

Gandini, S., Sera, F., Cattaruzza, M. S., Pasquini, P., Picconi, O., Boyle, P., et al.

(2005). Meta-analysis of risk factors for cutaneous melanoma: II. Sun exposure. *European Journal of Cancer*, 41(1), 45-60.

Geller, A. C., Brooks, D. R., Colditz, G. A., Koh, H. K., & Frazier, A. L. (2006). Sun protection practices among offspring of women with personal or family history of skin cancer. *Pediatrics*, 117(4).

Glanz, K., Saraiya, M., & Wechsler, H. (2002). Guidelines for school programs to prevent skin cancer. *Morbidity & Mortality Weekly Report* 51, 1-18.

Goldstein, A. M., & Tucker, M. A. (1995). Genetic epidemiology of familial melanoma. *Dermatologic clinics*, 13(3), 605.

Gordon, L., & Hurst, N. (2007). *The health effects of using solaria and potential cost-effectiveness of enforcing solaria regulations in Australia*. Australian Radiation Protection and Nuclear Safety Agency. Retrieved January 22, 2007 from [http://www.arpana.gov.au/pubs/rhc/QIMR\\_solaria07.pdf](http://www.arpana.gov.au/pubs/rhc/QIMR_solaria07.pdf).

Greene, K., & Brinn, L. S. (2003). Messages Influencing college womens tanning bed Use: statistical versus narrative evidence format and a self-ssessment to increase perceived susceptibility. *Journal of Health Communication*, 8(5), 443-461.

Harrison, J. A., Mullen, P. D., & Green, L. W. (1992). A meta-analysis of studies of the Health Belief Model. *Health Education Research*, 7, 107-116.

Hillhouse, J. J., Stair, A. W., & Adler, C. M. (1996). Predictors of sunbathing and sunscreen use in college undergraduates. *Journal of Behavioral Medicine*, 19(6), 543-561.

- Hillhouse, J. J., Turrisi, R., Holwiski, F., & McVeigh, S. (1999). An examination of psychological variables relevant to artificial tanning tendencies. *Journal of Health Psychology, 4*(4), 507-516.
- Hillhouse, J. J., Turrisi, R., & Kastner, M. (2000). Modelling tanning salon behavioural tendencies using appearance motivation, self-monitoring and the theory of planned behaviour. *Health Education Research, Theory & Practice, 15*(4), 405-414.
- Ibrahim, S. F., & Brown, M. D. (2008). Tanning and cutaneous malignancy. *Dermatologic Surgery, 34*(4), 460-474.
- International Agency for Cancer Research, Solar and Ultraviolet Radiation, (1992). IARC monographs on the evaluation of carcinogenic risks to humans. Vol 55. Lyon: IARC.
- Jalleh, G., Donovan, R. J., Lin, C., & Slevin, T. (2008). Changing perceptions of solarium and cancer risk: the role of the media. *Medical Journal of Australia, 188*(12), 735-735.
- Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education & Behavior, 11*(1), 1-47
- Kaplan, L. (1992). Suntan, sunburn, and sun protection. *Journal of Wilderness Medicine, 3*(2), 173-196.
- Kaur, M., Liguori, A., Lang, W., Rapp, S. R., Fleicher, 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.



- Knight, J. M., Kirincich, A. N., Farmer, E. R., & Hood, A. F. (2002). Awareness of the risks of tanning lamps does not influence behavior among college students. *Archives of Dermatology*, *138*(10), 1311-1315.
- Lawler, S. P., Kvaskoff, M., DiSipio, T., Whiteman, D., Eakin, E., Aitken, J., et al. (2006). Solaria use in Queensland, Australia. *Australian and New Zealand Journal of Public Health*, *30*(5), 479-482.
- Lazovich, D. A., & Forster, J. (2005). Indoor Tanning by adolescents: prevalence, practices and policies. *European Journal of Cancer*, *41*(1), 20-27.
- Lazovich, D. A., & Forster, J., Sorensen, G., Emmons, K., Stryker, J., Demierre, M. F., et al., (2004). Characteristics associated with use or intention to use indoor tanning among adolescents. *Archives of Pediatrics and Adolescent Medicine*, *158*(9), 918-924.
- 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.
- 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.
- Lowe, J. B., Balanda, K. P., Del Mar, C. B., Purdie, D., & Hilsdon, A. M. (1994). General practitioner and patient response during a public education program to encourage skin examinations. *Medical Journal of Australia* *161*(3), 195-198.

- Mahler, H. I. M., Kulik, J. A., Gerrard, M., & Gibbons, F. X. (2007). Long-term effects of appearance-based interventions on sun protection behaviors. *Health psychology, 26*(3), 350-360.
- Makin, J. K., Dobbinson, S. J., & Herd, N. L. (2007). The increase in solariums in Australia, 1992-2006. *Australian and Newzealand Journal of Public Health, 31*, 191-192.
- Marks, R. (1994). Melinoma prevention: is it possible to change a population's behaviour in the sun? . *Pigment Cell Research, 7*, 104-106.
- Martin, R. H. (1995). Relationship between risk factors, knowledge and preventive behaviour relevant to skin cancer in general practice patients in south Australia. *The British Journal of General Practice, 45*(396), 365.
- McClendon, B. T., & Prentice-Dunn, S. (2001). Reducing skin cancer risk: An intervention based on protection motivation theory. *Journal of Health Psychology, 6*(3), 313-320.
- McGinley, J., Martin, C. J., & MacKie, R. M. (1998). Sunbeds in current use in Scotland: a survey of their output and patterns of use. *British Journal of Dermatology, 139*(3), 428-438.
- Miller, A. G., Ashton, W. A., McHoskey, J. W., & Gimbel, J. (1990). What price attractiveness? Stereotype and risk factors in suntanning behavior. *Journal of Applied Social Psychology, 20*(15), 1272-1300.
- Minichiello, V., Aroni, R., Timewell, E., & Alexander, L. (1995). *In-depth interviewing*. Melbourne, Victoria, Australia: Longman.
- Monfrecola, G., Fabbrocini, G., Posteraro, G., & Pini, D. (2000). What do young people think about the dangers of sunbathing, skin cancer and sunbeds? A

- questionnaire survey among Italians. *The Official Publication of the Photomedicine Society*, 16(1), 15-18.
- Morse, J. M. (1994). Designing funded qualitative research . In N. K. Denzin & Y. S. Lincoln (Eds), *Handbook of qualitative research* (pp. 220-235) Thousand Oaks, CA:Sage
- Murray, C., & Turner, E. (2004). Health, risk and sunbed use: A qualitative study. *Health, Risk & Society*, 6(1), 67-80.
- Nolan, B. V., Taylor, S. L., Liguori, A., & Feldman, S. R. (2009). Tanning as an addictive behavior: a literature review. *Photodermatology, Photoimmunology & Photomedicine*, 25(1), 12-19.
- Ohnaka, T. (1993). Health effects of ultraviolet radiation. *Annals of Physiological Anthropology*, 12(1), 1-10.
- Pagoto, S. L., McChargue, D. E., Schneider, K., & Cook, J. W. (2004). Sun protection motivational stages and behavior: Skin cancer risk profiles. *American Journal of Health Behavior*, 28(6), 531-541.
- Patton, M. Q. (2002) *Qualitative research and evaluation methods* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage.
- 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), 90-90.
- 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.

- Poorsattar, S. P., & Hornung, R. L. (2007). UV light abuse and high-risk tanning behavior among undergraduate college students. *Journal of the American Academy of Dermatology*, 56(3), 375-379.
- Randle, H. W. (1997). Suntanning: differences in perceptions throughout history. *Mayo Clinic Proceedings*, 72(5), 461-466.
- Reynolds, D. (2007). Literature review of theory-based empirical studies examining adolescent tanning practices. *Dermatol Nurs*, 19(5), 440-443.
- Robinson, J. K. (1990). Behavior modification obtained by sun protection education coupled with removal of a skin cancer. *Archives of Dermatology*, 126, 477-481.
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. *Health Education & Behavior*, 15(2), 175-183.
- Salpietro, B. J., & Del Campo, D. V. (1995). Is a tan really beautiful? *Dermatology Nursing*, 7(6), 355-357.
- Sheilds, B. (2007) The solarium industry-how many operators are there in Australia? *Australian and New Zealand Journal of Public Health*, 31(4), 385-385
- Smith, B., Ferguson, C., McKenzie, J., Bauman, A., & Vita, P. (2002). Impacts from repeated mass media campaigns to promote sun protection in Australia. *Health Promotion International*, 17(1), 51-60.
- Staples, M. P., Elwood, M., Burton, R. C., Williams, J. L., Marks, R., & Giles, G. G. (2006). Non-melanoma skin cancer in Australia: the 2002 national survey and trends since 1985. *Medical Journal of Australia*, 184(1), 6-10.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage

- Warthan, M. M., Uchida, T., & Wagner, R. F. (2005). UV light tanning as a type of substance-related disorder. *Photodermatol Photoimmunol Photomed*, *141*(8), 963-966.
- Weiner, B. (1992). *Human Motivation: Metaphors, theories, and research*. Newbury Park, CA: Sage Publications Inc.
- Weinstein, N. D. (1982). Unrealistic optimism about susceptibility to health problems. *Journal of Behavioral Medicine*, *5*(4), 441-460.
- Weinstock, M. A., Rossi, J. S., Redding, J. A., Maddock, J. E., & Cottrill, S. D. (2000). Sun protection behaviors and stages of change for the primary prevention of skin cancers among beachgoers in Southeastern New England. *Annals of Behavioral Medicine*, *22*(4), 286-293.
- Wichstrom, L. (1994). Predictors of Norwegian adolescents' sunbathing and use of sunscreen. *Health Psychol*, *13*(5), 412-420.
- Zeller, S., Lazovich, D. A., Forster, J., & Widome, R. (2006). Do Adolescent indoor tanners exhibit dependency? *Journal of the American Academy of Dermatology*, *54*(4), 589-596.

## Appendix A

**Media Release**

Researcher Michelle Russell from Edith Cowan University Joondalup campus is researching the use of tanning salons (also known as solariums). She is keenly interested in finding out about women's opinions about tanning in general and why people use salons.

Although there has been much research examining the health risks of exposure to UV radiation surprisingly, there has been little into the psychological aspects (e.g., motivations, attitudes and fears) of tanning.

Michelle is looking for female volunteers aged between 18-35. She will be asking you to talk about your thoughts and opinions, which will take about 45 to 60 minutes. It is anticipated that the results of the study will help us understand more about the motivations and trends of solarium use and tanning.

If you are interested in assisting in this important research or would like further information you can contact Michelle Russell on 0434 931 323 or e-mail [mrussel1@student.ecu.edu.au](mailto:mrussel1@student.ecu.edu.au).

## Appendix B

**My name is Michelle Russell and I am a researcher from Edith Cowan University. I am doing a study on the use of tanning salons (also known as solariums). I am keenly interested in finding out about women's opinions about tanning in general and why people use solariums.**

**I am looking for female volunteers aged between 18-35. I'll be asking you to talk about your thoughts and opinions which will take approximately 45 to 60 minutes. It is anticipated that the results of the survey will help us understand more about the motivations and trends of solarium use and tanning.**

**If you are interested or would like further information, contact the researcher from Edith Cowan University Joondalup campus Michelle**

**Russell on 0434 931 323 or e-mail**

**[mrussel1@student.ecu.edu.au](mailto:mrussel1@student.ecu.edu.au)**

## Appendix C

## Interview Schedule

Firstly, before we start, I would like to thank you for your time and for deciding to participate in my research. I'm here to explore what young women's perspectives are on engaging in solarium tanning. I am interested in your thoughts and opinions so please answer each question in your own words.

I would like to ask you a few questions about your background information:

Age: \_\_\_\_\_

Education: \_\_\_\_\_

Postcode: \_\_\_\_\_

**1. Now first of all, when I talk about tanning what does it mean to you?**

Probes:

- What things come to mind?
- How do you feel about tanning and why?
- Has it changed over time?

**2. Could you tell me about your experiences of tanning?**

Probes:

- What are some of the things you enjoy/ don't enjoy about tanning?
- What, for you are best / bad aspects of tanning?
- Have you experienced any difficulties? Could you describe them?
- What other issues can you think of?

**3. Could you describe your ideal tanning experience?**

Probes:

- How often would you be tanning?
- Can you describe why this is your ideal tanning experience?

**4. What things do/did you consider when deciding to tan (not tan)?**

Probes:

- Could you please discuss those things that you thought about in making your decision?
- What were the most important issues? Why?

**5. Can you tell me in what way if at all that having a tan changes the way you see yourself?**

Probes:

- How does it make you feel?
- Do you think this is positive/ negative? Why?

**6. Were there any questions you wished I had asked?**

We've come to the end of my questions. Were there any questions you wished I had asked? Thank you for your time. How are you feeling?

I have some contact numbers for professionals who you may talk further with about any feelings that may arise from this interview.



## Appendix D Information Sheet

Thank you for your interest in this study. My name is Michelle Russell; I am in my fourth year of undergraduate study of a Psychology degree at Edith Cowan University at Joondalup Campus.

The aim of this research is to explore young women's perspectives on using tanning salons. It is hoped that this area of research will reveal factors that may be of assistance for future health education programmes and interventions for prevention of adverse health affects associated with ultraviolet radiation

This information sheet is designed to advise you about my research and how I intend to gather the data. I am interested in your thoughts, feelings and experiences regarding tanning in tanning salons.

The interview is expected to take approximately 45 to 60 minutes and will be audiotaped and then transcribed verbatim. No identifying information will be included in the transcript and identifying words will be replaced with character replacement or simply blanked out (e.g., XXXXXX).

The design and rationale of this study has satisfied the strict guidelines laid down by the Faculty Ethics Committee of Edith Cowan University. Subject to any legal obligations, all data remains confidential. Publication of the results will not result in disclosure of your identity, and at no time will your name be reported. However, if you are interested in the outcomes of this research project, I will be happy to share it with you once it is completed, which is scheduled for November 2008. My contact details are listed below.

Once the study is complete, the data collected will be stored in a secure filing cabinet in the School of Psychology and Social Science of Edith Cowan University. I would like to ensure you that your participation in this study is voluntary and you would be free to withdraw at any time you wish without penalty, and to remove any data that you may have contributed.

Although it is envisaged that this study will not be stressful for participants, if at any time you become distressed with any aspect of this study, assistance is available to you through a number of counselling services as attached. If you have any questions about the project, please do not hesitate to contact me via the details below, or my supervisor, Dr Paul Chang on (08) 6304 5745. If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Justine Dandy, Fourth Year Co-ordinator, Edith Cowan University, on 6304 5575 or [j.dandy@ecu.edu.au](mailto:j.dandy@ecu.edu.au).

If you are interested in participating in the study or would like further information, I can be contacted on the following:

9305 2796 (h)

0434 931 323 (m)

[mrussell@student.ecu.edu.au](mailto:mrussell@student.ecu.edu.au)

Yours sincerely, Michelle Russell.

## Appendix E

## Participant Consent Form

An Exploration of the Perspectives of Young Women Who Engage in Solaria

Tanning

I \_\_\_\_\_ have read the information sheet provided and agree to participate in the research study conducted by Michelle Russell of Edith Cowan University. I understand the purpose and nature of the study and am participating voluntarily. I grant permission for the audio recording of my interview, the data to be used in the process of completing an undergraduate Psychology degree and acknowledge that it may be published. I understand that my name and other demographic information, which might identify me, will not be used. I understand that I can refuse to answer questions and can withdraw from this study at any time. I realise that there will be no penalty should I decide to cease my participation.

\_\_\_\_\_  
Signed: Research Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signed: Primary Researcher

\_\_\_\_\_  
Date