The Use of Over the Counter Medicine and Health Information Seeking Behaviour in England

By

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Abstract

Background   In England and the UK there has been a move to provide the consumer with more choice in over the counter medicine. In recognition of the number of drugs now available without prescription, new models and frameworks are being utilised with the aim to educate the public about self-treatment. How health information is sought has also undergone transformation with the advent of the internet, the adoption and utilisation of this resource has had a significant impact on how the healthcare consumer seeks information.

Aims and Methods The aim of this study was to investigate the provision of and access to consumer health information in England, specifically with reference to over the counter medicines to promote understanding of the consumers' attitudes and opinions to this type of medicine and their health information seeking behaviours. The findings of the study were used to provide recommendations to the stakeholders involved; healthcare organisations, healthcare professionals and the healthcare consumer. The research consisted of a survey (n=324) and was analysed using quantitative and qualitative methods.

Results The majority of respondents utilised over the counter medicine responsibly and with few adverse events. The General Practitioner is the main source of information and online sources the next most utilised resource. Effectiveness and following advice/recommendations were amongst the themes identified that made a treatment episode with over the counter medicines successful. Unsuccessful treatment episodes included those with escalation of symptoms. Factors governing successful health information seeking were problem solving through self diagnosis and expanding knowledge on an existing health issue.

Conclusions Over the counter medicines are a widely used commodity but respondents continue to have a heavy reliance on the general practitioner for prescription medicines, especially for minor ailments. Evidence exists that individuals utilise information seeking behaviour for self treatment and the use of over the counter medicines. However, adoption of self care models need to be increased through educating health care consumers to maximise the potential benefits of these frameworks for the stakeholders.

Keywords Over the counter medicine, information seeking, information behaviour, internet, social networking, healthcare.

Acknowledgements

Abbreviation List

CIT   Critical Incident Technique

DoH   Department of Health

ENT   Ear, Nose and Throat

FAQs   Frequently Asked Questions

GSL   General Sales List

HP   Healthcare Provider

MAT   Multichromatic Analysis Technique

HRA   Medicines and Healthcare Products Regulatory Agency

NICE   National Institute for Clinical Excellence

NPA   National Pharmacy Association

NSAID   Non steroidal anti-inflammatory drugs

OTC   Over the Counter

P   Pharmacy

PAGB   Proprietary Agency Great Britain

POM   Prescription only Medicine

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1 Introduction

1.1 Background

The concept of purchasing medication for self-treatment is not new; it is evident throughout history that people have always sought methods for treating various ailments with or without consulting a doctor or other healthcare professional (Griffin 2004, Norton 2006). The types of medicine and its abundance have varied considerably over the centuries, as have the models and frameworks used to govern this. More recently in England and the UK there has been a move to provide the consumer with more choice in over the counter medicine (OTC) (PAGB 2015a, PAGB 2015b, BMA 2005). This is medicine that may be bought without a prescription, although some are required to be purchased through a pharmacy. After the Second World War the face of medicine and healthcare changed in England and the UK with the implementation of the NHS (Jones 2008, Royal Pharmaceutical Society 2010). People prior to this were dependent on self treatment if they could not afford a doctor. Treatment on the NHS was free at the point of need, regardless of the patients' ability to pay and the concept of prescription medicine was introduced (Jones 2008, Royal Pharmaceutical Society 2010). The amount of over the counter medicine available was reduced and new stricter legislations on the sale of medicines were implemented. The medicines that could be bought without prescription were limited until approximately the 1990s when more medicines started becoming available again OTC (BMA 2005).

In recognition of the number of drugs now available OTC, various new models and frameworks are being utilised with the aim to educate the public about health, lifestyle, illness and the use of these medications (PAGB 2010a, PAGB 2014). Concepts involve: self-treatment of minor ailments to avoid General Practitioner (GP) appointments; the informed patient and the expert patient - those who have a long-term illness but are knowledgeable about their condition. OTC medicines are predominately curative or provide symptom relief but preventative medicines are becoming available (Vamvakopoulos et al 2008). Both aspects of this medicine are utilised within the current frameworks, promoting responsibility towards health through lifestyle moderations and preventative methods and the responsible use of facilities including OTC drugs and also the GP when ill (PAGB 2010a, 2014).

The amount of information relating to health, and the sources used to gain this information has undergone change. Often ill health and a need for health information are intertwined; people do not have an innate knowledge of medicine and need to search for information using various sources. The use of the internet as a health information source has been

prolific. Internet growth began in the 1990s (Spink 2010) and now supersedes other sources of information such as the media, including newspapers, pharmacists and friends/family for health information (PAGB 2005a). This is partially due to the internet being integrated into everyday life. Initially, out of the work environment, people may have owned a personal computer with dial up internet, then the laptop became more popular. Mobile technology has vastly improved and wifi provides faster internet connections. Additionally phones and tablet devices became smaller and more powerful allowing portability and convenience.

Health related information takes many forms on the internet from evidence based formal sites such as the NHS to the anecdotal, such as personal blogs or posts on a forum. Health information queries continue to grow as does the amount of information available. It is estimated that in the year 2000, after the internet growth of the 1990s there was 1 billion website pages of information and that the number now stands at over 4 billion approximately (Trotter and Morgan 2008). WorldWideWebSize.com (2016),states that currently the indexed Web contains at least 4.63 billion pages while Internetworld.stats.com (2016) state that there was an estimated 3,366 million internet users in December 2015, which equates to 46.4% of the world population as compared to December 1995 when there was just 16 million, approximately 0.4% of the global population.

1.2 Research Need

Whilst there is research available about the consumers and usage of OTC medicines (PAGB 1997, PAGB 2005a, PAGB 2005b) and about online search habits regarding health information (Sillence et al 2005, Sillence et al 2007, Powell et al 2011) there is little concerning the consumer in England and their attitudes and opinions in regard to seeking information and using OTC medicine.

The Proprietary Agency Great Britain(PAGB) have published OTC medicine profiles of the healthcare consumer which includes sources of information that are utilised as well as an overview of consumer health and attitudes towards medicine, the studies have used a quantitative methodology (PAGB 1997, PAGB 2005a, PAGB 2005b). Other studies on OTC medicine have tended to focus on negative or beneficial aspects of specific drugs, such as overdose and substance abuse or health benefits of taking a certain medication (Wazaify et al 2005, 2006, Hughes et al 1999, Zandi 2002). No qualitative studies investigating the healthcare consumer and OTC drugs have been identified.

Research does exist that investigates information behaviour and information seeking in health and other fields (Cox et al 1993, Trotter& Morgan 2008, Williams et al 2003), , as do studies that explore specific information sources and consumer motivations to use them and barriers to information that they may experience. Many of the studies focus on specific websites, diseases, information behaviours or include individuals with certain demographic traits, (Powell et al 2011, Sillence et al 2007, Sillence et al 2005, Trotter& Morgan 2008), there is a paucity of UK specific research in this field. Apart from the research published by the PAGB (PAGB 1997, PAGB 2015a, PAGB 2015b) there is a lack of studies that include the general healthcare consumer and their attitudes and opinions to OTC medicine and health information seeking behaviour. There is also a shortage of in-depth mixed method studies or qualitative research in this area. A general lack of research in this area has been identified, additionally there is a deficit of new research which has culminated in a small literature base for this research area.

1.3 Aims and Objectives

1.3.1 Aim

The aim of this study is to determine the opinion and experience of healthcare consumers regarding the access and provision of over the counter medicine (OTC) and health information in England. Findings of the research will be used to form recommendations regarding OTC medicine and health information for the stakeholders involved. Stakeholders who may benefit from the research are healthcare consumers and healthcare organisations, such as health care charities, NHS, Department of Health and the PAGB. Other stakeholders groups that may benefit from the research include health care professionals and OTC drug manufacturers.

1.3.2 Objectives

1. To investigate and establish consumer use, attitude and opinion of OTC medicines in England from the literature reviewed and quantitative analysis of the data.
2. To establish consumer health information seeking patterns.
3. To detect consumer preferences for health information sources.
4. To establish factors that the health care consumer considers to determine a successful and unsuccessful episode of self care using OTC medicine (qualitative).
5. To establish factors that the healthcare consumer considers to determine a successful and unsuccessful health information search (qualitative).
6. To make recommendations that focus on consumer OTC medicine use and information seeking behaviour to relevant stakeholders.

1.4 Outline of Thesis

The introduction has given the background to the research and the aim and objectives, whilst placing the study in context. This is followed by chapter 2, the literature review. Methodology and research design form chapter 3. Quantitative and qualitative analysis are discussed in chapter 4. Chapter 5 contains the results from the quantitative portion of the survey, chapter 6 contains the qualitative survey results. Chapters 7 and 8 are the discussions for the quantitative and qualitative research respectively. The study finishes with chapter 9, the conclusions and recommendations to the stakeholders.

1.5 Research Context

1.5.1 Introduction
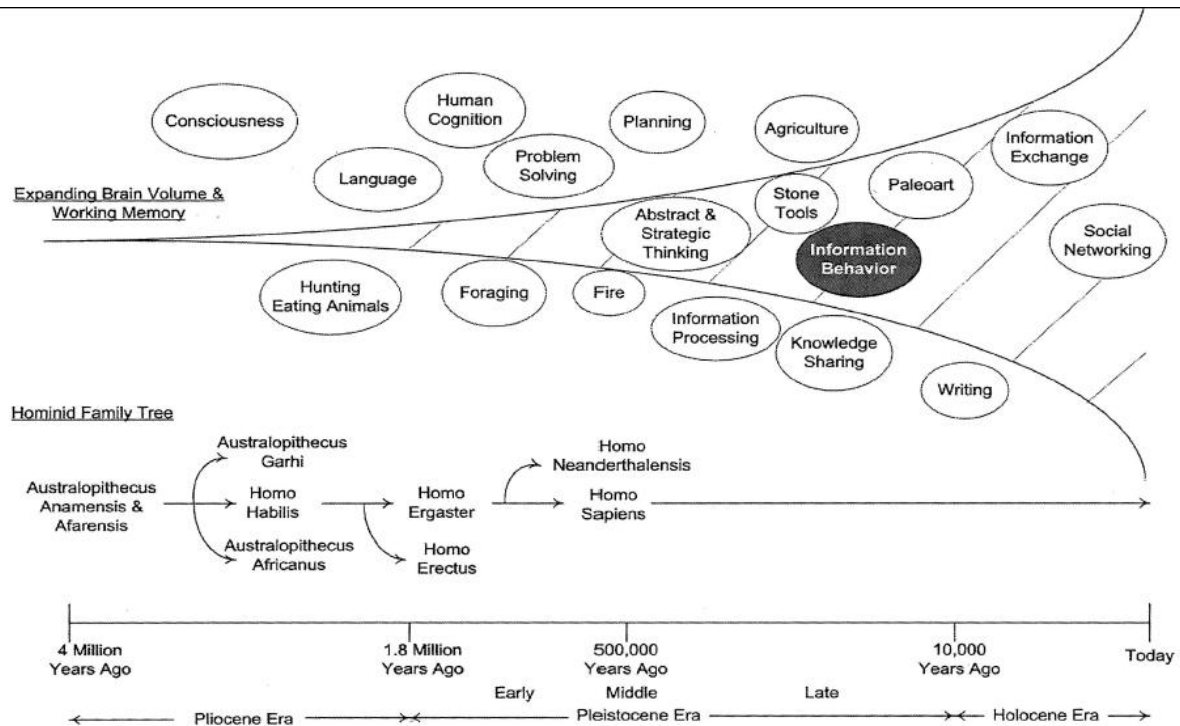
Figure1 Information Behaviour Evolutionary Timescale (Spink 2010).

The evolutionary model of information behaviour developed by Spink (2010) is longitudinal, spanning information behaviours exhibited from early human beings and the evolutionary traits up until the present day – the Holocene Era. Information behaviour is not just a 20th century phenomenon as knowledge sharing, information processing and information exchanges occurred in the Middle Pleistocene Era. However, information behaviour has continued to evolve, through writing and more recently what is termed as social networking.

When discussing information behaviour and the related behaviours – information seeking, processing and usage, the tendency is to consider only technologies such as the Internet or Web, which support information behaviours. The mid 1990s saw the emergence and development of the internet and Worldwide Web, significantly changing how information was sought, accessed and published, a development described as information availability growing at an exponential rate (Spink 2010, Robinson & Bawden 2008). Whilst there is no doubting the popularity of the internet as an information source, other information sources still remain relevant such as the GP, pharmacist or non-medical professional.

1.5.2 Social Networking

It is proposed that this research is nested in the social networking stage due to the information behaviours exhibited and the technologies utilised (Spink 2010). Chronologically the social networking stage includes the use of the internet and technical use, an advancement and extension of traditional methods and has grown to include social media networking online, a concept that is relatively new for health related issues. However, more traditional methods of information seeking may still be utilised, such as face to face with a GP or pharmacist in a real life environment or through multiplatform information grounds, where the consumer can potentially use differing methods of information seeking for example having an online presence and using the information gained to purchase medicine from a retail outlet.
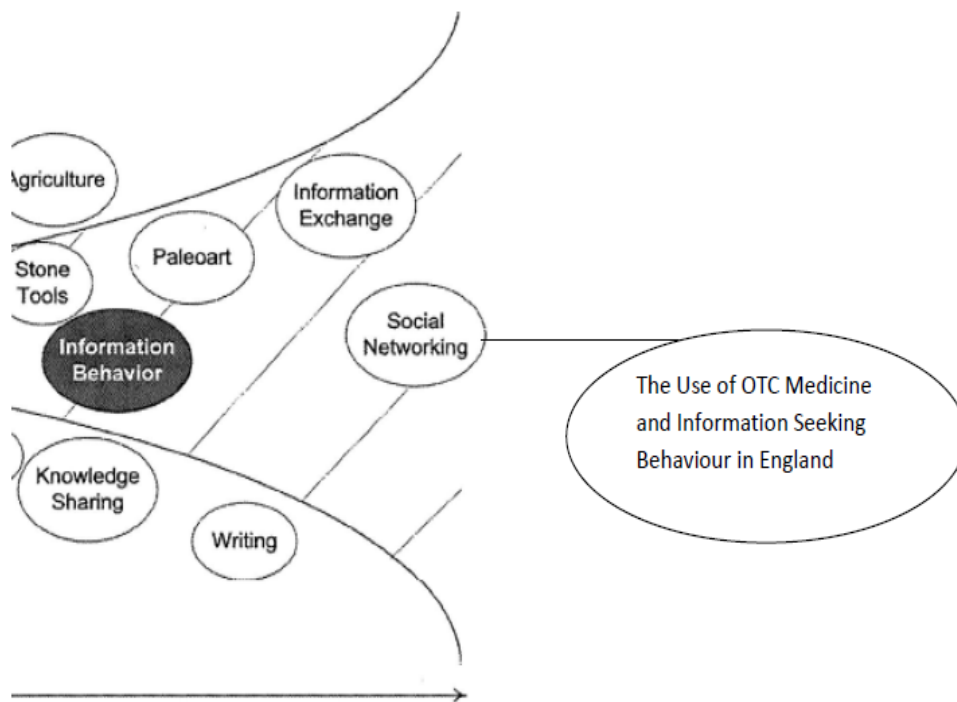
Figure 2 Research in context – Social Networking Stage (Spink 2010)

1.5.3 Definitions of Social Networking

The term social networking is often synonymous with and used interchangeably with social media. Social networking has been defined as: A network of social interactions and personal relationships; a dedicated website which enables users to communicate by posting information (Oxford Dictionaries 2016) or a network of friends, colleagues or other personal contacts, an online community of people with a common interest who communicate with each other and share information, a website that facilitates this communication (Dictionary.com 2016).While there is an emphasis on the online element of social networking in the above definitions Boundless.com (2016) use a sociological approach to describe a social networking community defining it without necessitating the use of online communication, it is a social structure that exists between actors – individuals or organisations. A social network indicates the way that individuals and organisations are connected through various social familiarities. These networks are comprised of nodes and ties. The individual or participating organisation is the node; ties are the various types of connections between these nodes. Ties may be weak or strong, a loose connection, for example, an acquaintance would be a weak tie, family bonds are strong ties. Social networks operate on many levels – from familial to national and are the basic tool individuals use to connect to society. A social network does not necessarily need to exist solely online.

1.5.4 Definitions of Social Media

Definitions of social media describe it as the vehicle that facilitates communication between social networks, the collective of online communication channels dedicated to community based input, interaction, content sharing and collaboration (whatis.techtarget.com 2016).

Cohen (2011) describes social media as platforms that enable the interactive web by engaging users to participate in, comment on and create content as a means of communicating with their social graph, other users and the public. Characteristics of social media include: a wide variety of content formats, social sharing through interactions across one or more platform, facilitates enhanced speed and breadth of information dissemination, provides one to one, one too many and many to many communications and involves different levels of engagement by participants who can create, comment on or view social media networks (Cohen 2011).

1.5.5 Health, Medicine and the Social Networking Stage

'Increasingly, the responsibility for health-related matters is passing to the individual. The social norms which cast doctors and public health officials as the brokers of medical information are yielding to an era in which individuals actively seek information. Individuals have to choose between a variety of information sources, including the relatively new sources represented by organizations, and then use the information they acquire to select options for health, for prevention, and for treatment.'

(Johnson & Meischke 1991a, cited by Wilson 1997, p565).

The quote above emphasises the changing paradigm of health information, the resources becoming available, change in attitude from the healthcare consumer and problems that may be encountered. Johnson and Meischke (1991) stated this at the beginning of the internet age and foresaw a change in information sources that were available and the consequences of utilising these resources for the health consumer. Previously accepted models included Parsons Sick Role (1951), in which the patient was expected to be a passive recipient, passing all aspects of decision making to the healthcare professional.

Additionally, from the 1990s until the present day, more and more medicines were being reclassified and changing status from prescription only medicine (POM) to pharmacy only medicine (P) and, eventually, general sales list (GSL), providing the consumer with the means to self treat, purchase medicine and make choices in the type of medicine selected, for example brand versus non branded or different active ingredients.

2 Literature Review

2.1 Over the Counter Medicine in England

2.1.1 Early Development

The concept of over the counter (OTC) medicine in England is not new, the human race has been seeking cures, buying and selling drugs for thousands of years. Regulation of these medications is not a new concept either but one that has endured throughout the years in various guises (Griffin 2004, Norton 2006).

The amount of OTC medicines available was limited, only in 1983 was ibuprofen made available to purchase without a prescription. From 1983 onwards more treatments were reclassified from PoM to P, the number of which growing steadily each year (BMA 2005). The passing of the Medicines Act in 1968 had a profound effect on OTC medicines and medicine in general. Until 1968 there was no specific legislation to assess the safety of a drug including prescription only medications (POM) (BMA 2005).

Up until 1968 there was no statute in England requiring pre-marketing approval of drugs on grounds of safety. The Act underpins safety, quality and efficacy of medicine in Britain and came into force in 1971. The Act provides a licensing system applicable to the manufacture, importation, testing, distribution and marketing of medicines. As well as governing the licensing and distribution of prescription medicine the Act governs where and how a drug from the pharmacy sales only group (P) or a drug available in non-pharmaceutical outlets known as the general sales list (GSL) may be sold (Medicine Act 1968).

The OTC medicine market is well established in England and the UK. This type of medicine has moved from being unregulated to highly regulated, with legislation covering all areas of the drug marketing process including safety, efficacy and quality from the PoM to P and eventually GSL (BMA 2005).

2.2 OTC Medicine

2.2.1 Categorisation

All drugs available in England and the UK are subject to categorisation on various levels. This includes how and where the medicine is purchased, the family of drugs and the physiological effects of the drug. Medicines in England have three main categories: prescription only medicines (POM), pharmacy (P) and general sales list (GSL). POM requires a prescription from a doctor or suitably qualified health professional and should be purchased from a pharmacy. Medicines categorised as P have to be sold by, or under the supervision of a registered pharmacist. GSL are available from any sales outlet including supermarkets, newsagents or petrol stations (BMA 2005).

Medicines can go from POM to P and then to GSL categories. When a new medicine receives a licence, there is a need for it to be categorised as POM so it may be monitored for safety and usage in large population groups under medical supervision. The current view of the BMA (2005) is that no medicine should remain under POM status unless for safety reasons and the UK is a world leader in increasing the range and availability of OTC medicines. Experience of a POM usage contributes to the decision making when deregulating medicines to P status, this experience in turn informs decisions about total deregulation to GSL category (BMA 2005).

2.2.2 Proprietary and non-proprietary medicine

Another category is the proprietary or non-proprietary medicine, closely related to the patent or off/non patent medicine and the generic or patent name of a drug. Proprietary medicines are those manufactured by a specific company, there may be more than one company which produces this medicine (PAGB 2008a). A patent allows a certain company to produce a medicine for a specific time, which in some cases may be extended. Patents are vitally important to drug manufacturers in economic terms Cabri and Di Fabio (2000) emphasise this, describing the time between market launch and patent expiration as being critical for a drugs success. Companies which have not taken out a patent due to the cost or the belief that they are giving out information run a risk of a rival company patenting their drug, as in Europe, the priority goes to the first company that files the patent, not necessarily the inventor (Cabri & Di Fabio 2000).

Generic describes a drug when not branded, this may also include own label OTC medicines. Own label medicines are those manufactured for supermarkets (PAGB 2008a).

All medicines and drugs have a generic name and many have one or more brand names. Using a drug's generic name is useful for medical professionals to identify specific agents and to categorise. Generic drugs are not always as effective as branded products as the patented product often tends to have a more complex formulation leading to a faster or longer acting effect (PAGB 2008a).

2.2.3 The OTC Market in the UK

The OTC market in the UK was valued at approximately £2.4 billion in 2010, with 2009,990 million packets of OTC products being sold (PAGB 2010c). The most popular medications bought were for pain relief which had a total worth of £542 million. This included adult oral analgesics (369.4 million), paediatric analgesics, topical analgesics and medication for oral lesions and toothache. Growth within this sector between 2008 and 2009 was £1.5 million. The cough and cold medicine market was valued at having sales of £437.2 million in 2009 (PAGB 2010c). This could also be seen to have contributed to the analgesic sales market, as many of the preparations contain paracetamol and codeine. In 2013 the value of the UK OTC market was £2.5 billion a small rise from 2009, equating to 942 million packs of OTC medicines being sold. Again the highest value product categories included pain relief (£544 million) and cough/cold/sore throat treatments being valued at £415 million, a decrease from 2009 (PAGB 2015a).Between 2012 and 2013 a 2.1% change was reported in the purchase of pain relief treatments, an increase in revenue of £11.1 million. Skin treatments also represented a huge proportion of the OTC market, the PAGB including in this category anti-fungals, infestation and cystitis treatments, the value of this sector being approximately £415 million in 2013, a monetary growth increase of £9.7 million. Anti-allergy treatments, which are categorised as hayfever remedies only totalled £108 million of the market but had the highest change (increase) between 2012 and 2013 with sales in 2013 showing an increase of 21.9% compared to 2012, which equates to £19.3 million. Compared to 2012, the cough/cold/sore throat remedy market actually decreased in 2013 with sales reduced by -1.8%, equating to a financial decrease of £8.3 million (PAGB 2015a).

Analgesics available OTC include aspirin, paracetamol, ibuprofen, codeine and more recently diclofenac and naproxen. Analgesics can be used to control musculoskeletal pain, headaches, migraines and cold or 'flu symptoms. They are available for adults and minors and are delivered orally or topically in the forms of liquid medicines, pills, gel capsules, cream/ointments or soluble tablets. Some analgesics provide a singular active ingredient whilst others form part of a compound (BNF2005, PAGB 2010b). As part of a compound, the analgesic(s) may not be the only active ingredient; other common ingredients include

antihistamines, caffeine and decongestants. The decongestant pseudoephedrine was subject to restrictions in the UK which included only one pack being sold to an individual at any one time. Limits on the amount of active ingredient available within a single preparation or in a combination of preparations, was to limit the possibility of pseudoephedrine being utilised in the manufacturing of methylamphetamine (PAGB 2009a), a highly addictive and illegal drug.

2.2.4 Adverse Events and Drug Interactions in OTC Medicines

There has been much research and debate on the adverse events and drug interactions caused by OTC medicines. Research methods include experimental methods, systematic reviews, retrospective methods and case studies as well as editorials and correspondence.

Some adverse events are relatively common and have been well documented. These include aspirin induced asthma and gastrointestinal bleeding caused by aspirin and ibuprofen. NSAIDs, particularly aspirin have precipitated asthma attacks which are especially prevalent in those with nasal polyps (Kumar & Clark 2002). The systematic review written by Jenkins et al (2004) suggests that aspirin induced asthma is more prevalent than previously thought and that cross sensitivity to other OTC NSAIDs was present in most patients with aspirin induced asthma. Some evidence exists that ibuprofen is as safe as paracetamol when used at OTC doses and for a short time there remains a risk of gastrointestinal bleeding (Moore et al 1999). Even so, it cannot be assumed that the instructions on dosage/duration of medicine will be adhered to. Sinclair et al (2000, 2001), found that users of ibuprofen were using this drug for long term conditions, over an extended period of time and some (just under 10%) were taking doses above the recommended amount, some above the amount that can be prescribed. The study, which followed the participants over six months, found that some individuals were using ibuprofen when it was contraindicated, such as having a history of peptic ulcers. Unsurprisingly the follow up indicated an increase it gastrointestinal events.

More recently, high dose NSAIDs, those available only on prescription, have been indicted as a risk for cardiovascular health (Reichenbach et al 2010). PAGB (2011a) responded that ibuprofen, naproxen or diclofenac are safe in OTC dosage levels, providing that the instructions on the pack are adhered to. The deregulating of diclofenac was described as causing some GPs consternation. This was due to advice given in 2006 to GPs that stated that either ibuprofen or naproxen should be first line choices as diclofenac when prescribed

at high doses could be responsible for up to 2,500 heart attacks a year in England (Anekwe 2008).

More unusual adverse events reported for NSAIDs include recurrent aseptic meningitis which presented secondary to taking ibuprofen and ketorolac (Cano Vargas-Machuca 2006). This illness is not due to an infectious agent and is characterised by an inflammatory reaction of the meninges. The case study focuses on a 70 year old male who was admitted to hospital five times in 16 months, each time the patient had imbibed these drugs. A number of NSAIDs have been reported as inducers of this adverse event, ibuprofen being one of the most notable. Ibuprofen, codeine compounds sometimes specifically named as Nurofen Plus (each caplet containing: ibuprofen 200mg, codeine phosphate 12.8mg) have precipitated adverse events. A prospective case series between 2005 and 2008 (Frei 2010) measured the morbidity associated with codeine-ibuprofen use. Twenty seven patients were included in the study, mainly with gastrointestinal haemorrhage and opioid dependence. The study concludes that although codeine is a relatively weak opioid analgesic it is addictive and further awareness, investigating and monitoring of OTC codeine-ibuprofen analgesic use is needed (Frei 2010). Case records (Robinson et al 2010) reviewed over a two year period from detoxification unit recorded 7 cases reporting chronic excess of Nurofen Plus. Excess ibuprofen consumption contributed to gastric ulcer, gastrointestinal bleeding, hepatoxicity and inflammatory bowel conditions. The pattern of admissions are new to the unit and may relate to the codeine content and marketing strategies. Echoing the study by Frei (2010), it concludes that there is a need for increased pharmacovigilance around OTC medicines (Robinson et al 2010). A case which is unusual involves the misuse of Nurofen Plus and the energy drink Red Bull. The drink and medicine are seen to be an emerging cause of this illness of which practitioners should be aware (Ernest et al 2010).

Paracetamol is viewed as being a relatively benign drug having few adverse effects and drug interactions, except in the case of alcohol; however paracetamol is the most common form of poisoning which is encountered in the UK. Two detailed retrospective analyses provided details of self-poisoning episodes and the prevalence of OTC drug related overdoses in the UK (Prescott et al 2009, Wazaify et al 2005a). Prescott et al (2009) found 1598 episodes of deliberate self-poisoning over 12 months, Wazaify et al (2005a) reported 616 cases of overdose in 12 weeks with OTC drug related overdoses comprising of 40.1% of all overdoses. Twenty four percent of these overdoses were OTC only overdoses. Paracetamol was involved in 36% of the overdoses, with 6.8% and 3.2% involving aspirin and ibuprofen respectively. Prescott et al (2009) found paracetamol and ibuprofen the most commonly ingested drugs with 42.5% and 17.3% respectively, 56.3% of patients taking paracetamol ingested over 8g which is equivalent to one over the counter pack.

2.2.5 Preventative Legislation

Prescott et al (2009) and Wazaify et al (2005a) both reported evidence of self poisoning incidents. Whilst Prescott et al (2009) found that over half of the individuals had ingested the equivalent to one OTC pack of paracetamol potentially the outcome in terms of mortality/morbidity rates could have been more severe. In 1998 legislation was passed to limit the amount of paracetamol and salicylate tablets purchased in one transaction. This was due to self poisoning rates with these substances, described as being substantial. The new legislation ordered that pharmacies could sell a maximum of 32 tablets per sale and other retail units could sell a maximum of 16 tablets per pack, one pack being the maximum the consumer could purchase (NHS choices 2013, Hawton et al 2001).Hawton et al (2001) conducted a retrospective comparative study monitoring data from five liver units and seven general hospitals between 1996 and 1999 measuring mortality and morbidity outcome caused by paracetamol or salicylate poisoning. It was found that since the legislation on pack sizes came into force there was a significant decrease in mortality and morbidity caused by these drugs. A decrease of 21% in the number of deaths from paracetamol overdose was reported and 48% decrease from salicylates along with a 66% decrease in the amount of liver transplant rates. Hawton et al (2001) and NHS choices (2013) conclude that the smaller pack size of these analgesics have been beneficial in reducing mortality rates due to self poisoning, although NHS choices (2013) concede that further measures are needed to prevent potentially avoidable deaths.

OTC medicines have also been implemented in disrupting the mechanisms of some drugs used for mental health. A Greek case study cites sulbutiamine as interfering with the therapeutic outcome of bipolar disorder (Douzenis 2006). Anti-inflammatory drugs have also been cited as reducing the effects of selected serotonin reuptake inhibitors (SSRIs), a group of anti-depressants which include fluoxetine (Prozac) (Warner-Schmidt 2011).

2.2.6 Benefits of OTC drugs.

Aspirin has often been hailed as a wonder drug due to its many positive benefits, mainly due to its anticoagulant effects, availability and price. A meta-analysis of aspirin on mortality in the prevention of cardiovascular disease in primary prevention incorporating nine randomised controlled trials with 100,076 participants was undertaken. Aspirin reduced all-cause mortality including myocardial infarction, ischemic stroke and the composite of myocardial infarction, stroke or cardiovascular death. Aspirin did increase the risk of hemorrhagic stroke, major bleeding and gastrointestinal bleeding when used in the primary

prevention of cardiovascular disease (Raju 2011). Aspirin also has an effect of individuals with diabetes who are at risk of cardiovascular disease or major adverse cardiovascular events (MACE). A systematic review and meta-analysis of seven studies (N=11,618) was undertaken. Results showed that relative risks (hemorrhagic and gastrointestinal results) indicate that for every 10,000 patients treated with aspirin 109 incidents of MACE may be prevented at the expense of nineteen hemorrhagic events (Butalia 2011).

Aspirin and some NSAIDs have been implicated in the reduced incidence of Alzheimer's disease. The Cache County studies (Anthony 2000, Zandi 2002) have both reported a reduced prevalence of this disease in users of NSAIDs. The risk of Alzheimer's disease was marginally reduced in those reporting NSAID use at any time and increased duration of use was associated with greater risk reduction. Long-term NSAID use may possibly reduce the risk of Alzheimer's disease provided usage occurs well before the onset of dementia (Zandi 2002).

Colorectal cancer is the second most common cancer in the developed world with approximately one million new cases and 600,000 deaths per year (Weitz et al 2005). It is known that high dose aspirin can reduce the long term incidence of this cancer but this may be limited due to its adverse effects. A twenty year follow up of five randomised trials assessed the effects of aspirin on colorectal cancer on incidence and mortality in relation to dose, site of tumour and duration of treatment. The results showed that aspirin taken for several years at doses of at least 75mg per day reduced long term incidence and mortality, the benefit was greatest for cancers of the proximal colon (Rothwell et al 2010). A further study analysed the effect of daily aspirin on long term risk of death due to cancer using individual patient data from randomised trials. Aspirin reduced risk of death by approximately 20% in the trials, mainly due to a 34% reduction in cancer deaths after five years. The study included oesophageal, pancreatic, brain, lung, stomach, colorectal and prostrate cancers (Rothwell et al 2010).

The UK is considered to be a world leader in increasing the range and availability of medicines available OTC and the consumer use of OTC medicine is prolific, which is reflected in the literature (PAGB 2010c, PAGB 2015a) from the market value of OTC medicine sales and the volume of drugs sold. However, there is a lack of research about OTC drugs and the healthcare consumer from a generalised perspective. Most research concentrates on a specific area of OTC medicine such as negative effects or positive findings in relation to an illness that the medicine was not indicated for (Jenkins et al 2004, Moore et al 1999, Sincair et al 2000, Sinclair et al 2001, Reichenback et al 2010, Robinson et al 2010, Frei 2010, Raju 2011, Butalia 2011, Zandi 2002, Rothwell et al 2010). It is also

highlighted how the consumer needs to be aware of certain contraindications that can be caused by OTC drugs and underlying conditions or drug interactions, that there are risks involved when taking these types of medicines which are easily accessible, therefore the healthcare consumer needs to be knowledgeable about this.

2.3 Current Research: Stakeholder Opinion and Beliefs Regarding OTC Medicine.

2.3.1 England and the UK

PAGB (2005a) commissioned a report of the summary profile of the data they held about the consumer and how they manage their health, including their attitudes and actions they have taken (2005a). The research took findings from other studies and market research from organisations including the Kings Fund (2004), Mintel (2004), Prism4 Readers Digest Association (1997) and PAGB's own study in conjunction with BMRB (British Market Research Bureau Limited) (1997).

The PAGB (2005a) summary profile of the OTC consumer used the above research as the main contributors to the study. The Kings Fund (2004) study examined public attitudes to public health policy and explored four main themes: health expectations, individual responsibility and control, the role of the Government and the role of the NHS. The research was conducted in three stages in 2004. The first two stages consisted of discussion groups with participants selected to represent a broad range of social demographics including social classes. The third stage was of a survey, face to face interviews, (n=1002) of members of the public (Kings Fund 2004).The study employed quantitative and qualitative methods but questioning did not specifically include OTC medicine or health information seeking, the study was more concerned with differences between socio-economic groups in terms of health expectations and government policy (Kings 2004). Additionally, the research used interviews and discussion groups but the methodology did not describe the role of the researcher or the nature of questioning, for example structured or semi-structured frameworks.

Mintel (2004) are a market research organisation and while consumer attitude and opinion to OTC medicine was researched the main focus of the report was consumer spending habits on OTC medicine including products such as vitamins. Very limited information is available about the Prism4 Readers Digest Association study (1997) but research focuses on ailments that are most and least likely to be treated and consumer decision making when suffering a minor ailment in terms of diagnosis.

The PAGB and BMRB study (1997), Every Day Healthcare 2, concentrated on general health, lifestyle and attitudes, the incidence and treatment of ailments and use of OTC medicines. There is also a section dedicated to children's ailments, treatment and OTC use. The study used interviews, face to face lasting approximately 40 minutes (n=2033) with adults aged 15+ in GB between 1996 and 1997, the sample collected by Random Location sampling methods. Respondents were asked to rate their own health but questioning in this section mainly asked about diet and vitamin intake. Questions about attitudes to health professionals and OTC medicine used attitudinal scales that ranged from agree a lot to agree a little. There was only one question about the source of health information (PAGB & BMRB 1997).The methodology was not clearly stated. Face to face interviews were used but it is not known if they were structured or semi-structured. From the type of questions used in part of the study, attitudinal scales, it can be assumed there was pre-defined categories, but it is unclear if this is the case in other areas of questioning. There is a qualitative element to the research but it is not in-depth and has been generated from the 'other' category, for example 'other ailments widely mentioned for last 2 weeks adults' (PAGB & BMRB 1997), illustrating the lack of in-depth qualitative research in the OTC medicine field.

The Summary Profile of the OTC Consumer (PAGB 2005a) includes broad findings about the consumers' health attitudes and beliefs such as: How healthy do people in Britain feel today? The study also reported experience and the response to common everyday health problems. This includes how people view OTC medicines (PAGB2005a). As mentioned above, the report brings a comprehensive range of information together from various sources to build a summary profile of the OTC medicine consumer, including the PAGB and BMRB (1997) research. However, the data ranges from 1996 – 2005, so they do not provide findings specific to the OTC consumer from one point in time, therefore changes in aspects of attitude, opinion, information seeking and OTC usage may not be represented. Ideally the data that were collated should have been from a similar time.

The Summary Profile of the OTC Consumer (2005a) reported that the majority of consumers considered themselves to be in good health with the majority expecting to remain so in the future, 71% and 65% respectively. From a demographic perspective a higher proportion of AB considered that they were currently experiencing good health in comparison to the DE group. This trend continued with the expectation of continued good health, with only approximately half of the DE group expecting the continuation of good health. The majority of individuals (88%) agreed that they are responsible for their own health, although 53% agreed that they should do more about their health and 30% do not take care of themselves as well as they should due to a busy lifestyle (PAGB 2005a).

The majority of consumers' gained health related information from the doctor (42%) with only 13% gaining information from their pharmacist. More individuals gained information from magazines (25%), friends and family (24%) and radio and television (24%). Newspapers accounted for 19%, leaflets in pharmacies or surgeries 16% and advertising 9% (PAGB 2005a). The internet was not included when this survey, included in the Summary Profile of the OTC Consumer (PAGB 2005a), was undertaken in 1997 (PAGB & BMRB 1997) and it may be surmised that not many homes owned a computer and internet connection and that health information aimed at the consumer was perhaps not prevalent within that media.

The common cold and headaches are the ailments which are suffered the most and migraine, flu and headaches the least likely to be left untreated. Almost half (46%) of minor ailments are not treated at all but 25% of ailments that were treated were done so using an OTC medicine. The majority of consumers agreed that the chemist provides a good source of advice and should be utilised more often, although this is paradoxical to the results of where consumers' actually gain their information (PAGB 2005a).

PAGB and Readers Digest commissioned a survey in 2005 which was undertaken by independent researchers NOP World (PAGB 2005b). The results of this survey were compared to that from 1997. The methods used to gain participants differed, a web based questionnaire was used and respondents were invited via NOP's consumer epanel. The sample was drawn using standard UK demographic quotas (n=1500).The survey used attitudinal scales and predefined categories. Questioning about health information was limited, with only one question and there was no qualitative research.

People in 2005 were not as positive about their health with 62% rating their health as good or very good and 11% rating their health as poor. The doctor remains the leading source of health information but 68% consulted the pharmacist and 65% consulted product leaflets or packaging. In this survey the internet accounted for 61% of individuals who were searching for health information. The common cold and headache remain the most experienced health problem in 2005 as it was in 1997. For both of these ailments consumers' preferred to treat the condition themselves, only 3% with colds seeking advice and 2% with headaches. Conditions with a high referral rate to a health professional included back pain, feeling low/depressed, flu, ear problems and arthritis/rheumatism. Participants had a very high opinion of OTC medicines with 91% being either very satisfied or quite satisfied with the treatment outcome. Respondents liked the convenience of buying these medicines and that the medicines available were preventative and curative. Respondents would welcome more medicines becoming available to treat or manage more serious or long-term conditions. Previous use of a product highly influences a purchase as does a health professional

recommendation, friends and family and a well known brand. The OTC medicine is generally purchased from a pharmacy or supermarket not from a website (PAGB 2005b).

Whilst it is becoming increasingly common to purchase medicines online, Nuffieldbioethics.org (2014) find in their report that OTC drugs do not feature prominently in the type of pharmaceuticals bought online. Pharmaceuticals that were bought online tended to be PoM which were purchased with or without a prescription. In 2008, approximately two million people in the UK were regularly purchasing pharmaceuticals online with a prescription from a registered pharmacy or without a prescription from other websites (Nuffieldbioethics.org 2014). Lifestyle drugs also feature highly as a group of pharmaceuticals that are purchased online, these include drugs for weight loss or hair loss (Nuffieldbioethics.org 2014). It cannot be categorically denied that OTC medicine is not being purchased online, but there is no evidence of a culture of it in England. This may be due to the consumer purchasing the product at the point of need from a pharmacy or supermarket (PAGB 2005), therefore negating the wait for delivery of a product.

A study in Northern Ireland found high usage of OTC medicines (Wazaify et al 2005). The public opinion survey (n=1000) conducted in shopping centres in Belfast and other towns examined attitudes to the community pharmacy, OTC medicines, view on OTC medicines in terms and safety and effectiveness and an exploration on the inappropriate use of OTC medicine. Consumers' would seek advice from a pharmacist if they thought the condition did not warrant an appointment with their GP (61.1%). The participants echoed the results of the above study with the majority of OTC products being purchased from a pharmacy. Similarly, one of the factors that influenced purchase was a recommendation by a health professional (pharmacist).

2.3.2 OTC Misuse/Abuse

Whilst many individuals professed to using OTC medicines appropriately, for example following the directions on the packaging (74.5%) there remains issues with the misuse/abuse with this type of medicine (Wazaify et al 2005b). Three studies conducted in Northern Ireland found evidence or knowledge of inappropriate use (Wazaify et al 2005b, Wazaify et al 2005a, Wazaify et al 2006). The majority of participants thought that non-prescription medicines could be abused and many could name an OTC product or category thought to be liable for abuse. Categories included analgesics, cough medicines and sleeping aids. Nearly one third of participants had encountered cases of abuse/misuse of OTC medicine with younger individuals having encountered more cases.

A further study from the perspective of 6 community pharmacies identified a total of 196 clients suspected of OTC abuse/misuse during a six month timeline. This detailed 120 cases of abuse and 76 cases of suspected misuse with 63.2% of mis-users being female and 36.8% males, 55% of females were suspected abusers of OTC drugs and 45% males. Products mainly associated with abuse were opioids, antihistamines and laxatives, specifically kaolin and morphine (n=38), an antihistamine used for sleep disorder (n=38) and a combination analgesic containing codeine and ibuprofen (n=22). Females tended to be suspected of abusing/misusing laxatives whilst more males were identified as suspected opioid abusers. The age of suspected opioid abusers was between 30 and 59 years, whilst laxative abusers were younger, from mid-teens to in their twenties (Wazaify et al 2006).

A structured questionnaire which covered various aspects was sent to all 509 community pharmacies in Northern Ireland, in the response the pharmacists named 112 OTC products they believed were being abused. Again opioids, antihistamines and laxatives were the most frequently reported categories of OTC drugs (Hughes et al 1999). The frequency of the drug abuse was perceived to be static or increasing. The type of OTC products being abused or perceived as being abused in Northern Ireland are similar to products abused in England. Two surveys were commissioned in Northumbria and West Cumbria, community pharmacists reported that primarily the drugs being abused were opiates and laxatives, antihistamine containing products were also reported (Ball & Wilde 1989, Paxton & Chapple 1996).

It is well documented that abuse or misuse of some OTC products especially analgesics can be potentially fatal or cause serious side effects (Prescott et al 2009, Wazaify et al 2005a, Hawton et al 2001). The acceptance of OTC drugs and the widespread belief that they are safe combined with a relatively cheap price and widespread availability can play a role in overdoses (Wazaify et al 2005a). A retrospective evaluation of the prevalence of OTC drug related overdoses at accident and emergency departments in Northern Ireland found that over a three month period 40.1% of overdoses involved at least one OTC product. Nearly a quarter (24%) of overdoses comprised of OTC drugs only (n=616) with the maximum number of overdose presentations recorded during Christmas week. A majority of cases were intentional overdose (89%) whilst 11% were accidental. Demographically those who overdosed on OTC products either solely or in combination with other drugs were female (62.3%) in the age category of 31-50 years. Almost half of the patients presenting with overdose never had paid work or were experiencing long term unemployment. Two thirds of those presenting at accident and emergency with a previous overdose episode had overdosed on OTC drugs only. Paracetamol was the drug predominately involved in overdoses (36%), aspirin and ibuprofen poisoning was also observed (Wazaify et al 2005a).

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Paracetamol and ibuprofen were also prevalent in self-poisoning episodes in an English teaching hospital. The research spanning 12 months with 1598 episodes or deliberate self-poisoning found that paracetamol and ibuprofen were ingested in 42.5% and 17.3% respectively, of all overdoses, with just over half of all episodes involving a single type of drug. Over fifty six percent of patients who had taken paracetamol reported ingesting over 8g the equivalent to one OTC packet. Up until the age of fifty females were more likely to overdose than males. There was no significant difference in the months in which individuals presented at the hospital (Prescott et al 2009).

2.3.3 Solutions to OTC drug misuse/abuse

The literature suggests that abuse or misuse of OTC products remains an issue which consumers' and community pharmacists are very aware of (Wazaify 2005a, Wazaify 2006). Both groups of stakeholders have opinions of how the situation may be rectified. Over half of consumers' asked acknowledged there was an issue with the misuse/abuse of OTC products but did not know how a solution could be reached, some citing the difficulty of implementing a solution as people could move from pharmacy to pharmacy to obtain products (Wazaify 2005a). There was a suggestion that OTC medications should be reclassified to POM status, although this does not consider the implications of buying online. Improved labelling, raising public awareness, improved education and an increased role of the community pharmacist were all deemed to be possible solutions by increasing and improving the access and provision to consumer information relating to OTC medicine. A small minority of consumers suggested that OTC sales should be recorded in pharmacies and the information stored on a smart card (Wazaify et al 2005b). The smart card has been suggested by Aronson (2004) as a response to a patient being given paracetamol by more than one prescriber, each unaware of the other. The use of a smart card or secure personal website may encourage individuals to develop their own medical history to which designated persons may have access.

Community pharmacists cited effective communication skills as a possible solution. The harm minimisation model allowed pharmacists to identify potential abusers/mis-users of OTC products and change the product bought or switch to a maintenance prescription under GP supervision. The model had some success as 12mis-users and two OTC abuse clients (n=70 clients approached, n= 196 suspected cases) agreed to cease using the products or change to a safer alternative. These clients, however, were unwilling to be formally enrolled into the follow up phase of the scheme. It was also not possible for the pharmacist to ascertain if the client had stopped taking the product or if they were purchasing it from

another pharmacy (Wazaify et al 2006). There are many barriers that may stop the pharmacist from communicating effectively with a client, such as the purchasing of an OTC product is viewed as a regular transaction, the client may not be willing to talk about their purchase or the consumer has not visited the pharmacy before therefore it would not be known if they were misusing or abusing OTC medicines. However, Howard et al (2008) state that the main reasons for preventable drug-related hospital admissions are due to communication breakdowns and knowledge gaps and that it is necessary to improve methods of communication in an attempt to reduce these incidents.

2.3.4 Stakeholder Opinion on Reclassification of Pharmaceuticals

Stakeholder opinion, including consumers', has been sought when drugs have been reclassified from POM to P or OTC status (Bissell & Anderson 2003). Two examples of this are statins and emergency contraception. In 1999 the emergency hormonal contraceptive drug PC4, later replaced by Levonelle-2 became available free of charge in 16 accredited community pharmacies in Manchester, Salford and Trafford. Pharmacists and consumers' were questioned about their opinions both positive and negative about the reclassification of this medication. Both stakeholder groups had similar themes about what constituted negative and positive aspects. Positive themes included the opening hours of pharmacies were more convenient than trying to make an appointment with the GP and the potential of waiting days for the appointment, it was a discreet and anonymous service and that the service was free at the point of need, therefore potentially minimising the risk of unwanted pregnancy. Negative aspects cited by both groups were irresponsible use, Levonelle becoming the main source of contraception and the possibility of an increase in high risk behaviour (Bissell & Anderson 2003).

OTC Simvastatin 10mg became available in 2004 as a preventative of ischemic heart disease. Stakeholders including GPs, consumers and community pharmacists were surveyed on issues pertaining to the reclassification of this drug to OTC status. Stakeholders were asked about their awareness of the drug, willingness to use this drug and views of management practices (Vamvakopoulos et al 2008). Awareness of the drug was high amongst GPs and the availability was favoured by pharmacists although consumers and GPs were not convinced it was a good idea. Consumers cited potential savings to the NHS as an important factor whilst GPs and pharmacists thought the main benefit was increased consumer choice. GPs thought that current dosage guidelines were inappropriate and it was believed that non-adherence would curtail any benefit of the medicine. All stakeholders

thought that misuse and neglect of lifestyle were the most important risks (Vamvakopoulos et al 2008).

Aronson (2004) discounts or justifies some of the above points about OTC statins. In regard to saving the NHS finances it can be viewed as a cost diverting exercise shifting the emphasis from the tax payer to the individual and potentially reducing public spending. There is potential for adverse effects to increase but benefit will accrue and the likelihood is that the latter will outweigh the former. The use of the drug as a substitute for lifestyle modifications cannot be substantiated and there is no evidence the UK public is currently enthusiastic about changing its lifestyle. Again with adherence, if an individual spends money on the product they are more likely to use it and if it is prescribed there is no guarantee the patient would take it.

2.3.5 The Knowledgeable Consumer

Many consumers are seemingly knowledgeable and well informed about OTC products but self-poisoning whether intentional or not remains an issue (Prescott et al 2009, Wazaify et al 2005a). Previous research found that consumers were less well informed and had less knowledge than consumers do today resulting in an enhanced confidence in self care (Hughes et al 2002). An ethnographical study reported that in general patients had poor knowledge of potential side effects of their OTC medication and leaflets which are widely available were rarely utilised by patients (Hughes et al 2002). The informed patient is an emerging trend that is shown by individuals increasingly willing to care for cold and flu episodes themselves, in 2010/11 there was 50,000 searches for flu information, whilst in 2009 there was 3,800 on the NHS Choices website according to a press release from the PAGB (2011). This may be due to public alarm due to various strains of flu such as H1N1 which has had major media coverage. Digitalhealth.net (2011) credits the increase to NHS Choices providing timely and accurate information and the launch of the NHS winter health site with a dedicated suite of online health and symptom checkers. The increase of search hits on NHS Choices can be associated with seasonal illness, but this also demonstrates that the healthcare consumer is becoming more aware and is actually using the internet as a health resource and the NHS Choices site as a health information source (Digitalhealth.net 2011).

Minor ailments are still prolific in a GPs workload; in 2006-2007 they constituted 57 million consultations per annum which equated to 220,000 per day. Ninety one percent of minor ailment consultations result in a prescription being issued at a cost of £370 million per

annum, with two billion pounds of NHS resources allocated to minor ailment consultations. The provision of more OTC drugs, information resources and education could allow the GP to allocate more time for the treatment of more serious patient conditions and potentially allow large savings to the NHS budget, all which may contribute to improving patient outcomes. It is considered that on average self care costs the consumer £0 - £3.50 on average but the cost incurred to the NHS is £32 per GP appointment and £111 for a visit to A&E (PAGB 2008b, 2015b).

The PAGB (1997, 2005b) have published research about general OTC medicine use and the opinion of the healthcare consumer, extending to limited questioning about information sources and preferences. Again, this reflects the lack of research about OTC medicine and health information seeking behaviour from a general consumer perspective in both quantitative and qualitative studies. The research (PAGB 2005b) establishes the use of the internet as a health information source in the UK, but does not expand on internet use for this reason. Therefore, an area of questioning in this study will aim to establish health information seeking patterns of the consumer and to detect consumer preferences for health information sources in England. This will include real life, in-person sources and more in-depth questioning about internet use for health information seeking.

Another area of questioning includes consumer attitude and opinion to OTC medicine. Wazaify et al (2005b) found evidence that the healthcare consumer was aware or had knowledge of the inappropriate use of OTC medicine suggesting that the consumer is aware of some of the issues surrounding OTC medicine and self-care, although it is not stated from which information sources the consumer had gained this knowledge. Furthermore, when questioned, the healthcare consumer has offered opinions and attitudes about more controversial OTC medicines and access to them in regard to reclassification from PoM to P status (Bissell & Anderson 2003, Vamvakopoulos et al 2008). Attitudes and opinions about safety, confidence in using OTC medicine and the amount of OTC medicine available are areas of interest in this study due to the findings in the literature.

2.4 Information Seeking Behaviour

2.4.1 Models and Legislation

Models and frameworks are central to health care legislation, often these are aimed at the consumer via the healthcare professional, in this case a GP, nurse or community pharmacist (Bissell et al 2006). The healthcare consumer is the target of these frameworks. The literature is often written for the purpose of the healthcare professional to disseminate and implement the information to the intended audience (Stevenson et al 2008). Newer legislation aims to empower and improve autonomy for the consumer whilst promoting the responsibility the individual has to care for their health. Often these frameworks also aim to further maximise the role of the community pharmacist with regard to information given about medications sold to the consumer. The new legislation has fundamental concepts such as shared decision making, patient autonomy and patient empowerment (PAGB 2010a). These concepts are embedded in the paradigms of the expert patient and the informed patient, both of which embody the notion of partnership and public participation, a policy which has been central to the UK for over ten years (Stevenson et al 2008).

Both the concepts outlined above are relevant with regard to OTC medicines and the availability of information to consumers in England. The expert patient may be an individual suffering from a long-term chronic illness, who is knowledgeable about the illness, the treatments available and situations which may reduce or even exacerbate symptoms. The informed patient can identify the severity of an illness, seek information and decide if this warrants or doctor's appointment or if self medication, such as OTC medicines, are more appropriate. The campaign for 'real self care' spearheaded by the PAGB and the Royal College of General Practitioners is a clear example of this (PAGB 2010a).

Providing the patient with the means to gain further information about a condition and to take more control over their health could change the culture of dependency on the NHS for minor ailments. In turn this may help the NHS in a time of a looming public funding process and allow the NHS to work for effectively especially for those with more complex health needs (PAGB 2010a, BMA 2005). There is little doubt that the NHS is in crisis: the nation is one that is aging, highly populated and there is a longer life expectancy coupled with the national financial crisis that is affecting public services. The Self Care Campaign (2010a) group emphasised the catastrophic impact that dependency and a demand-led culture is having on the NHS and advocates the need for change via a 4 point call to action aimed at all political parties to support the campaign at all levels (PAGB 2010a).

The campaign calls for the public to be allowed to be confident in their self care choices, enable healthcare professionals to offer support allowing the patient to be confident to use the NHS at the point of need and not demand. Furthermore, there should be a marketing campaign used to educate the public in the recognition and treatment of minor ailments and children should be educated through the national curriculum to understand health issues and how to use the NHS appropriately (The Self Care Campaign 2010).In addition to this the PAGB have introduced frameworks that are seasonally appropriate such as the Treat Yourself Better with Pharmacist Advice (2014), which promotes consumer awareness of the pharmacist as an alternative source of information for minor ailments that may be seasonal, such as flu or a cough or cold. The aim is to increase the use of the pharmacist, which is underutilized, rather than the GP or A&E being used as the primary information or treatment point, therefore reducing unnecessary appointments or presentations to the doctor or hospital.

2.4.2 Communication – the GP, antibiotics and the healthcare consumer

The PAGB (2008b) focuses particularly on the cost to the NHS and the time used when consulting the NHS for minor ailments, another benefit of self treatment is the potential to lessen the use of antibiotics when they are not necessarily needed. The over prescribing and the resistance to antibiotics has been well documented and is subject to a Public Health England report (2014). The key messages of the report state antibiotic prescribing has increased in England year upon year with the vast majority of prescribing taking place in the community with areas with high prescribing rates frequently also having a high resistance rate. Patients with bloodstream infections have increased annually from 2010 to 2013 with an increased number of these infections being identified as antibiotic resistant. Penicillin's were the most commonly prescribed antibiotics, predominately indicated for sore throats, ear infections and chest infections. The largest increase in antibiotic use was nitrofurantoin (2010 – 2013) which is indicated for cystitis and lower urinary tract infections (UTIs). The use of broad spectrum antibiotics may also have driven resistance (Public Health England 2014). NICE are developing further standards and guidelines to tackle antibiotic resistance and the DoH have warned that there are few public health issues of more importance than antibiotic resistance as it poses a catastrophic threat to the nation's health (NICE 2014). More recently the antibiotic trimethoprim and nitrofurantoin both had their applications withdrawn to be reclassified as P status drugs (PAGB 2015b).

Various factors contribute to potential widespread antimicrobial resistance such as non-concordance with instructions, for example not completing the course to over prescribing

from the GP (Nesta 2014, Society for Applied Microbiology 2014). Benefit of the doubt often provides the basis for prescribing antibiotics due to poor diagnostics and pushy patients according to GPs. Poor diagnostics include the lack of accurate point of care diagnostic tools, it would not be possible financially, or from a time perspective for a GP to send tests to a laboratory for every individual who presents with cough or cold symptoms or a sore throat, therefore the prescription is given for antibiotics, the benefit of the doubt. Admittedly if the condition is bacterial the patient may get better without further medical intervention or the need for laboratory testing but nearly half of GPs, 45%, admit to prescribing antibiotics for a viral infection when they know it will not treat the condition (Nesta 2014).

Understandably it is realised that GPs are under pressure to diagnose and treat illnesses whilst being mindful of economic impacts and time constraints but discrepancies in communication between the healthcare consumer and the GP are also a potential cause of antibiotic prescribing. Only 6% of patients admit to pushing their doctor for antibiotics, but 90% of GPs cite pressure from the patient as a reason they over prescribe (Society for Applied Microbiology 2014).

2.4.3 The Sick Role

The frameworks and campaigns discussed above are almost paradoxical to older models, such as Talcott Parson's Sick Role (1951). Parsons' (1951) model was authoritarian and paternalistic with an emphasis on social hierarchy; the doctor was at the summit of the hierarchy whilst the patient occupied a much lower position. The ill patient was said to enter a role of sanctioned deviance, the sick individual is not a productive member of society and the deviance needs to be policed by the medical society. Classically the patient is portrayed as a passive recipient of medical expertise having left the decision making to the doctor but cooperating with the treatment. The model infers that the patient does not question the doctor and the model does not try to address the power balance which favours the doctor.

There does, however, remain some similarities between this model and the latter models concerning the informed or expert patient. All models expect that the patient will act in a responsible manner with regard to their health whether this is treating an ailment, maintaining their health or requesting information for a health related query. Parsons (1951) advocates that certain obligation must be met by the patient which include: the sick person must try and get well and the sick person should aim to seek technically competent help, which implies some level of personal responsibility for the individuals' own health. The Department of Health (DoH) (2010) promises an increase in patient choice resulting in an

NHS that is more responsive to their needs and wishes but warns that this is a privilege and patients need to accept responsibility for the choices they make and the implications which may occur for their lifestyle.

The DoH (2010) intend to put patients and the public first, aided by an information revolution. It is claimed that information combined with the correct support can provide better outcomes in care and reduced costs, that patients should have more information on all aspects of healthcare which will enable them to share in decision making. The aim is to provide comprehensive and trustworthy information from a range of sources on various conditions, treatments and lifestyle choices with a view to looking after their own and their families' health.

The implementation of participation and partnership in healthcare consultations has faced some difficulties especially in terms of the necessary shifts in relationships being overlooked, a concept considered in terms of OTC medicine particularly. This has been documented as the need for pharmacists to maintain their professional expertise against the rise of healthcare consumerism (Stevenson et al 2008).

2.4.4 Pharmacists and Healthcare Consumerism

Stevenson et al (2008) provided a series of professional expertise and consumer discourses using data from a UK study of consultations for OTC medicines in two pharmacies. Whilst pharmacists and customers recognised the asymmetry of knowledge between the two groups, pharmaceutical expertise was not always perceived to be necessary. The consumer and the pharmacist can be seen to have opposing opinions as to how a transaction of an OTC drug can be viewed. The National Pharmacy Association argues that availability of medicines should be restricted, that medicines are not consumer goods and should not be treated as such. Although it should be noted that some of these drugs are available from non-pharmacy outlets inferring that the expert advice/supervision is not necessary, potentially undermining the role of the pharmacist (NPA 2007, Stevenson 2008). From a consumer viewpoint, the supermarket model of consumerism (Winkler 1987) exists within the pharmacy; the pharmacist controls what is available. Therefore what appears to be a choice of products is, in reality, restricted according to various factors such as pharmacy policy, availability or special offers at the wholesale level (Stevenson 2008). These factors can influence how the perception of purchasing OTC medicines can depend on the role undertaken by the participant.

Cox (2014) suggests that community pharmacists should stop selling OTC medicines that have little evidence of efficacy if they want to provide the best treatment for patients, that quackery should be left in the past and the focus should be on evidence of efficacy, much as it is with prescribed drugs through the use of evidence based medicine. Cox (2014) further addresses the problem describing the attitude of pharmacists as being 'what the public wants, the public gets' suggesting that the apparent double standard in the supply of OTC products needs to be addressed. The consumer group Which? conducted two investigations on pharmacies in 2013 and 2012. The investigation in 2013 focused on pharmacy advice using trained mystery shoppers to visit 122 UK pharmacies including large chains, supermarkets, smaller chains and independents. Forty three percent of visits were found to be given unsatisfactory advice, with the scenario of a customer taking warfarin and requesting Pantoloc Control resulting in the worst results, 71% of these visits being unsatisfactory. The previously prescription only heartburn drug, Pantoloc Control, can cause complications such as bleeding if warfarin is present in the blood and important but basic questions should have been asked (Which? 2013). Which? (2013) do not define precisely what constitutes unsatisfactory advice in all pharmacy scenarios, but in relation to the warfarin and pantoloc control there was a lack of basic but important questioning before the consumer was permitted to make the purchase.

The second investigation examines health products you do not need. Popular remedies were purchased from high street chemists and the experts from Which? (2012) found that claims were not backed up by enough evidence to buy them and in some cases, there was no robust evidence at all. Published evidence for cough medicines including brands such as Benylin and Corvonia was examined and it was concluded that there was no robust evidence that they do what they claim to do on the bottle. Furthermore some manufacturers such as Boots, Adios and Benylin refused to send evidence when it was requested citing that the MHRA reviews the clinical evidence that their products work, as they are licensed medicines (Which? 2012).

Which? (2012), describe the use of their experts in the report, but there is no description of how many experts were on the panel, or their area of expertise. Stevenson et al (2008) acknowledge the potential for disagreement between community pharmacists' expertise and the customers' consumerist behaviour in relation to advising or informing the consumer and the importance of not undermining the concept of patient empowerment.

2.4.5 Information Needs of the Consumer

It is evident that people actively seek information about health in terms of diagnostics and treatment for themselves or others. Consumers and health care practitioners search for this information but their underlying reasons may vary, as may the methods of searching undertaken (PAGB 2010, Harrison & Davies 2007). It is understood that both groups in some instances employ the same strategies for finding information. Both groups use the internet, paper based media or seek the advice of other individuals (Harrison & Davies 2007). For example the lay person may use the internet, read an article in a newspaper, magazine or leaflet pertaining to a health query or ask a healthcare professional or even friends or family for advice. Fox and Jones (2009) found that the public still utilise traditional sources of health information even whilst engaging with online sources. The study found that 60% will use the internet for health information but 70% and 90% will ask a friend/family member or consult a doctor respectively. A clinician however frequently consulted text books and 'human' contact included fellow doctors and residents and speciality consultants. Again, in this specific group, internet usage has increased (Harrison and Davies 2007).

Types of information accessed can be categorised into formal or informal groups. Formal communication involves information which is published and usually publicly accessible. Examples of this include journals, newspapers, magazines and reports, many of which are often now available in an electronic format. Informal communication is that which is not 'properly published'. This includes conversations or discussions and also documents that are not intended for public dissemination such as diaries or letters. Due to the internet this type of communication (blogs, wikis, discussion groups) has lent itself to a virtual environment and can be described as moving informal communication to formal communication. Unlike formal communication documents these are often loosely structured, personal and subjective (Robinson 2010).

Web usage has grown in terms of the amount of healthcare information available to the public, the number of individuals accessing it for healthcare information and to facilitate purchasing medication online. It is difficult to obtain exact numbers for individuals who have access to the internet and use this medium to access healthcare information but the trend is seemingly increasing since the initial explosion of internet use in the late 1990s (Trotter & Morgan 2008).

In 2006, a study (n=10,000) claimed that 62% of the UK population had access to the internet at home or at work (Mori 2007). InternetWorldStats (2011) found that in June 2010 82% of the UK population were internet users, totalling approximately 10.8% of internet users in Europe. It is estimated that 80% of adults in the United States and 66% of adults in

Europe seek health advice online with many reporting that the information retrieved affected a health care decision, it is claimed over 68 million people have been influenced by the information provided (Pew 2002, Pew Research 2003, Taylor & Leitman 2002, Baker et al 2003). Furthermore it is suggested that there are 70,000 health related websites available on the internet (Pagliari & Gregor 2004). Trotter and Morgan (2008) report that in the year 2000 there were approximately 1 billion website pages of information, and that the number now stands at over 4 billion web pages. Currently there are over four billion pages of information and 3,366 million internet users (WorldWideWeb.com 2016, Internetworld.stats.com 2016). This trend has allowed the growth of information searches pertaining to health and also that of the online pharmacy. The online pharmacy may offer advice about health and healthcare and certainly offers a convenient and anonymous method of purchasing medicines (Raine et al 2008).

A survey conducted in an ear nose and throat (ENT) clinic located in Birmingham UK in 2000 and 2006 documented the significant rise of the internet in relation to health queries (Trotter & Morgan 2008). Patients attending the ENT clinic were asked: do you have access to the internet? Have you used the internet to find health related information? (n=204 in 2000, n=209 in 2006). It was found that access to the internet changed dramatically from the beginning of the technology boom in 2000to 2006. The first questionnaire in 2000 found that 43% (n=88) of patients had access to the internet. In 2006 this had increased to 70% (n=147) of patients, the biggest increase in patients with access to the internet being in the age group of 21 – 60 years. In 2000 only 16% (n=32) of patients surveyed used the internet for health related information, whilst in 2006, 55% (n=114) of patients used the internet for this type of information.

2.4.6 Information Behaviour – Consumers' Decision Making

Consumers are seeking health information through changing methods. With a variety of sources of information the consumer does not have to choose the traditional and paternalistic arrangement with the delivery of knowledge imparted through the health professional (Trotter & Morgan 2008). What is more difficult to evaluate , especially in regard to electronic sources, is how the consumer decision making process evolves.

A multitude of health related information is available electronically and the use of the internet has progressively increased, but it is not clear if, over time, the consumer faced with greater choice has changed their user behaviour (Sillence et al 2007). A web based questionnaire undertaken in 2000 and 2005 compared internet based users experiences of searching for

information online. The surveys used Likert-type scale and trust statements were incorporated into a revised questionnaire. Points of comparison between the two surveys included: demographics of online health seekers, change in providers of online health advice, consumer anxiety about quality of information and what factors might underpin any changes noted (Sillence et al 2007).

Both surveys noted a strong gender bias with more female respondents. Respondents in both surveys reflected a range of ages, the largest category in 2005 being the 25-35 age range, the largest category in 2000 was the ages between 45 – 54. Motivations for going online included being in better control of one's health and most respondents reported looking for advice for themselves, the main barrier for non-use was associated with a lack of need rather than a lack of trust in the information available. The majority of the sites searched (69%) were health topic specific, 5% were general health sites. The main topics searched for in 2005 included alternative health, women's health, cancer and depression. Cancer was the most searched subject in 2000. Diabetes, depression and children's health were subjects not searched in 2000, but were listed in the 2005 survey. More respondents searched for information about allergies in 2000 than in 2005 (Sillence et al 2007).The decrease in information searches for allergies online may possibly be due to passive information seeking, such as the information being available through media such as television or the availability of the medicine in supermarkets, negating the need for actively searching the information. Allergies may also be seasonal and recurrent so the consumer recognises the symptoms and can decide if to medicate without further need for seeking information.

In a breakdown of web providers, generic sites such as netdoctor and WebMD were the most popular, the majority of people found sites using general search engines rather than recommendations from health care professionals. Sites provided by charitable organisations and support groups were also popular. Less popular were sites hosted by government such as NHSdirect, private healthcare providers and pharmaceutical companies. The study (Sillence et al 2007) finds that NHSdirect did not feature in the top three sites visited in 2000, the sites visited were WebMD, DrKoop and MayoClinic. In 2005 NHSdirect was the second most visited site, with WebMD still being the most popular and MayoClinic being third. The results of Sillence et al's study (2007) may differ to this study regarding the popularity of NHS and government sites due to the methodology used. The surveys were hosted globally, with the majority (57%) of respondents being in the United States, the UK having only 15% of the respondents. As stated in the aims and objectives of this study the research is specific to the health consumer in England, therefore information sources that are based in the UK potentially may be found to be utilised more than in the results of the study by Sillence et al (2007).

In 2000 over 70% of respondents had taken the advice offered by a website and people in 2005 still trust the advice offered. Trust markers for sites in 2000 and 2005 included ease of use, advice coming from a knowledgeable source, impartial and independent advice and contributions from likeminded people. Privacy or confidentiality was not perceived as a high priority by users (Sillence et al 2007). Little is known about how consumers evaluate sites but it is understood that the health consumer is looking for sites that match their own social identity and to which they can relate to. The design of a site is an important factor, especially usability, and may determine if a consumer considers a site credible or not. Consumers expressed trust issues with retail sites because of the advertising present, but the consumer is unwilling to rely on government sponsored sites or pharmaceutical sponsored sites perhaps because of the official line undertaken regarding certain health topics (Sillence et al 2007).

In contrast to the study by Sillence et al (2007) later research finds that the NHS Direct website is the major UK provider of online health information (Powell et al 2011). The research focused on the characteristics and motivations of online health information and incorporated both quantitative and qualitative methods. An online survey (Powell et al 2011) was conducted (n=792), which was offered to users of the NHS Direct website and analysed statistically, a subsample of respondents then engaged in a semistructured interview conducted via telephone or email/instant messaging, which was analysed thematically (n=26). Quantitative results found that the majority of respondents were female (71.2%) and under 45 years of age (67.4%) and that prior consultation with a health professional was reported to be 44.9% of the individuals surveyed (Powell et al 2011).

Respondents were asked about their motivation for online searching with four main concepts emerging: reassurance, second opinion to challenge other information, greater understanding to supplement other information and perceived external barriers to accessing information. Benefits of searching online included convenience, coverage and anonymity. Navigating online information and deciding what information to trust was regarded as common sense and brand recognition was important. Real world branding (a brand that does not just exist online) was very important to respondents as an identity that was recognised from offline experiences, the NHS brand was seen as giving valued qualities such as impartiality, reliability and being up to date. This contrasted with opinion on commercial health websites, such as pharmaceutical companies and also North American sites who were viewed to have commercial aims. Whilst being a real world not for profit brand the NHS direct website was also used by respondents because they were NHS patients and using the NHS website was the right thing to do, the view perceived was that

there would be a connection between physical care received and the use of the NHS virtual service, an integration between the online and traditional services (Powell et al 2011).

A longitudinal study (Sillence et al 2007) examined how women (n=15) in England evaluated and used online information in regard to hormone replacement therapy (HRT) and how the information affected their decision making. The study tested a model of trust development in which the participants engaged in rapid heuristic processing of information, efficiently sifting information and further examining their selected sites for credibility and personalisation. Personalisation was important when trusting sites, the sites which offered anecdotes or FAQ sections were often seen as more trustworthy. This contrasts with health professionals who may be looking for the same subject matter but do not value the personalised element. The women involved in the study acted like scientists with regard to using the web material to generate and test hypotheses in regard to HRT. Many of the participants had already developed opinions about HRT treatment and used the information found to reinforce their beliefs. Participants reported integrating the information found online with offline advice from friends or family and doctors. The doctor still remained the primary source of information but participants reported that the information gathered online influenced their decision making and improved their communications with the doctor.

Trust in a site develops over time and the design of a site; perceived credibility and personalised advice are all factors which may influence this (Briggs et al 2002, Sillence et al 2004). Convenience becomes a factor when trust develops and convenience often equates to time-saving with a reliance on the easy and familiar (Robinson 2010). This is associated with models such as the Principle of Least Effort (Zipf 1949) or the Paradox of Choice (Bawden & Robinson 2009). Both models convey the fact that people will choose a path that offers the least resistance or effort using methods that have previously gained acceptable results. The Paradox of Choice utilises the factor that where there is a large range of potential usable sources, the whole range will not be used and choice from that range will not be rational, often based on familiarity (Bawden & Robinson 2008). Whilst often used in the discussion of internet or other literature searches, the concept of familiarity and convenience may be a contributing factor in other methods of searching information such as why the consumer of health care information highly values the 'human' element when gathering information or why the same pattern of information searching is repeated when different approaches could yield better results.

2.4.7 Negative Aspects of Internet Use

The adoption and subsequent increase in internet use for seeking information, including health information does have negative aspects as documented by Bawden and Robinson (2008). Collectively these are termed as paradoxes and pathologies and include quantity and quality criteria, too much information being termed as an information overload and the related pathologies as the paradox of choice. The term information overload is usually taken to represent a state where an individual's efficiency in using information in their work is hampered by the amount of relevant or potentially useful information available to them. The information overload can be associated with a feeling of loss of control of the situation or being overwhelmed, the information becomes a hindrance rather than a help, even though it is potentially useful.

A closely related information pathology is information anxiety, a condition of stress caused by the inability to access, understand or utilise information. The causes of this may be information overload or insufficient information or a lack of understanding of the information environment. This anxiety is typified by feelings of powerlessness or being lost (in the information) (Bawden & Robinson 2008).

Coping strategies have been developed by information consumers, including satisficing – taking just enough information to meet a need, to avoid information overload; just enough information is good enough (Bawden & Robinson 2008). This provides a way to make decisions when the full spectrum of options may not be known and it is not feasible to compare the benefits of each. It is a common way of dealing with a complex information environment. Bawden & Robinson (2008) categorise satisficing as being appropriate (good) or inappropriate (bad). If there is a clear rationale to why decisions are being taken this is appropriate, if not the information behaviour is reduced to avoidance or random selections of sources and materials – this is inappropriate satisficing.

2.4.8 The 'non' consumer

Many of the studies are concerned with consumers using health information and their motivations underpinning their decision making. Williams et al (2003) used the Dervin model of a Sense Making approach to investigate why certain consumers were not utilising sources of potential information which were available to them.

The research centred on the observed lack of use of electronic kiosk systems based in a medical centre in Scotland (Williams et al 2003). The study was grounded in the Sense

Making methodology as it was concerned how people make sense of the world and the role of information seeking and use within this context. This approach uses a situations, gaps, bridges model and looks at how the individual uses the information gained. Participants (n=13) were asked to discuss a critical incident: the last time they needed health information, not including the reason for their present visit. Using a Time Line Interview technique the participants discussed the critical incident step by step in terms of situations, gaps, bridges and how these were used. The gap represents the problem in a situation and the bridge represents the solution, metaphorically bridging the gap (Dervin 2005, Williams et al 2003).

Situations constituted immediate medical problems, long term medical problems and repercussions of a medical problem. Gaps included basic treatment instructions, reassurance, the cause of a condition and practical information. Despite the need for further information, many managed their medical condition by thinking about it as infrequently as possible, following the advice of the GP and declining to seek any other information. When suffering from a medical complaint information can be seen in a negative context by the sufferer. Information may be seen as an intrusion or may cause the person to consider their condition in a greater context causing more interference in their life than they consider acceptable. Again, when bridging information gaps, the GP was seen to be the first and principal source of information, therefore the participants did not need to use the kiosk. Other reasons for non-use included unawareness of content or purpose, a profound lack of curiosity and a belief it was for professional use only. Information was often used in ways beyond it was ostensibly required. The act of visiting a GP with a medical complaint and gaining assurance fulfilled the social and emotional aspect of a face to face consultation. Patients used information from their GP as a support, patients expected when visiting their GP to receive support for aspects of their condition including emotional problems. The patients are then seen to use this support as a reassurance mechanism to down play the perceived threat of the critical incident (Williams et al 2003).

This section explores the models underpinning consumer healthcare with an emphasis on OTC medicine and health information seeking. The latter part of the section examined the literature about consumer attitude and opinions towards health information seeking, particularly in the sites used, online security and trust issues. Newer models have emerged championing self care and health education with the aim that the consumer would be capable of taking care of minor ailments or ongoing chronic illness, but have the ability to recognise the need for further medical involvement, for example the 'expert patient' and 'real self care' (PAGB 2010).This represents a paradigm shift from older established models which advocate a passive attitude from the healthcare consumer towards the medical professional (Parson 1951). A change in consumer attitude may be observed by detecting

consumer preferences for health information sources and attitude to and opinion of OTC medicine. The GP as the main source for health information(PAGB 1997, PAGB 2005a, 2005b) and the consumer relationship with the perceived need for antibiotics (NICE 2014) has the potential to be explored in terms of attitude to and opinion of OTC medicine and preferences and patterns towards health information seeking.

Through researching consumer opinion, attitude and experience regarding OTC medicine and health seeking behaviour through published literature and quantitative and qualitative research methods, a series of recommendations regarding the healthcare consumer, OTC medicine and health information seeking behaviours can be made to the relevant stakeholders.

2.5 Information Behaviour Models

2.5.1 Introduction

The origins of information seeking behaviour are found in work on the users of libraries and in readership studies. The post war increase in the amount of scientific literature that was either newly published or recently released led to the Royal Society Scientific Information Conference 1948, marking the beginning of the modern study of human information seeking behaviour (Wilson 2000). However, studies were in existence in the 1920's and 1930's and surveys have dated back to 1916 and were more concerned with library use and demographics, such as the social class that constituted the clientele, rather than the information needs that led the consumer to the library (Wilson 2000).

Information behaviour encapsulates the totality of human behaviour in relation to sources and channels of information, including seeking information and the utilisation of information (Wilson 2000). The origins of information behaviour can be traced to the Pliocene Era, approximately four million years ago to 1.8 million years ago with the development and evolution of consciousness, language and problem solving, leading to the present day; the age of social networking within the Holocane Era in accordance to the timeline of information behaviour developed by Spink (2010).

2.5.2 Definitions of Information Behaviour

Definitions of information behaviour and information seeking behaviour include:

''*Information Behaviour is the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking, and information use. Thus, it includes face-to-face communication with others, as well as the passive reception of information as in, for example, watching TV advertisements, without any intention to act on the information given*'' (Wilson 2000, p49).

''*Information Seeking Behaviour is the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems (such as a newspaper or a library), or with computer- based systems (such as the World Wide Web)*'' (Wilson 2000, p49).

Information seeking has been described as a ''*special case of problem solving, which includes recognising and interpreting the information problem, establishing a plan of search,*

conducting the search, evaluating the results, and if necessary, iterating through the process again'' (Marchionini 1989, p.54, Vanderschantz et al 2014).

2.5.3 Wilson's Model of Information Behaviour 1981

The aim of this model was to outline the areas covered by what was proposed as information seeking behaviour, an alternative to the then common term information needs. Wilson (1999) describes a model as a framework for thinking about a problem which may evolve into a statement of relationships among theoretical propositions. In general most models in the field of information behaviour are statements, often in the form of diagrams that describe an information seeking activity, the causes or consequences of the activity or the relationships among stages in information seeking behaviour. Models of information behaviour appear to be fewer than those documenting information seeking or information searching.
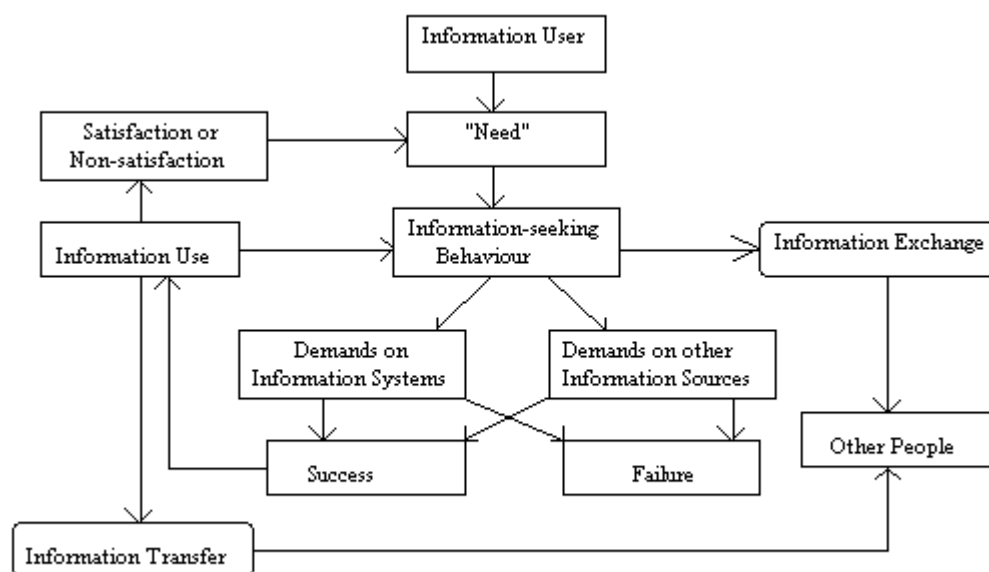
Figure 3 Information Behaviour Model (Wilson 1981)

Since the 1980's there has been a paradigm shift towards using a person centred approach rather than system centred, along with a change from quantitative methods to qualitative methods, Wilson, Dervin, Ellis and Kuhlthau are often associated with these shifts. The employment of observation and semi-structured questionnaires provided the research

methods to experience information seeking in a very practical context, leading to the development of a model that is prompted by the individual's psychological, cognitive and effective needs (Wilson 2000, Wilson 1981).

The term information seeking behaviour is used by Wilson to describe the variety of methods employed by people to discover and gain access to information (Vanderschantz 2014). Activities that an individual may engage in when identifying their own needs for information, searching for information in any way and utilising or transferring that information (Wilson 1999). Wilson (1999) continues that demands may be made on formal or informal information sources, which result in success or failure to find relevant information. If successful the person utilises the information found, which may either fully or partially satisfy the perceived need, or it may fail to meet the perceived need in which the search process has to be reiterated. The model illustrates that other people may be involved as part of information seeking behaviour through information exchange – information that is perceived as useful may be passed on, as well as being used, or instead of being used by the individual their self.

2.5.4 Wilson's second model 1981

Wilson's second model of 1981 is based upon two main propositions: information need is not a primary need, but a secondary need that arises from needs of a more basic kind and that in the effort to discover information to satisfy the information need the enquirer is likely to meet with barriers of different kinds (Wilson 1999). Wilson's second model located the concepts of information need, information seeking and information exchange in a diagram that charted the behaviour of an individual faced with the need to find information. The model draws upon the circumstances that give rise to information seeking behaviour, the main elements being the situation within which a need for information arises, the barriers that may exist in engaging in information seeking behaviour or the successful completion of a search or information seeking behaviour itself (Wilson 1997).

Using psychological definitions Wilson proposed that the basic needs can be defined as physiological, affective or cognitive. The context of any one of these needs may be the individual themselves, the role demands of work or life, or the environments within which that life or work takes place. The model was amended in 1994 to illustrate how Ellis's (Ellis 1989) information seeking behaviours definitions could be incorporated. The model can be described as a macro-model, or a model of the gross information seeking behaviour

suggesting how information needs arise and what may prevent, or by implication, aid the actual search for information, embodying a set of testable hypotheses for example, proposing that information needs in different work roles will differ, or that personal traits my assist or inhibit information seeking (Wilson 1999, Wilson 1997).
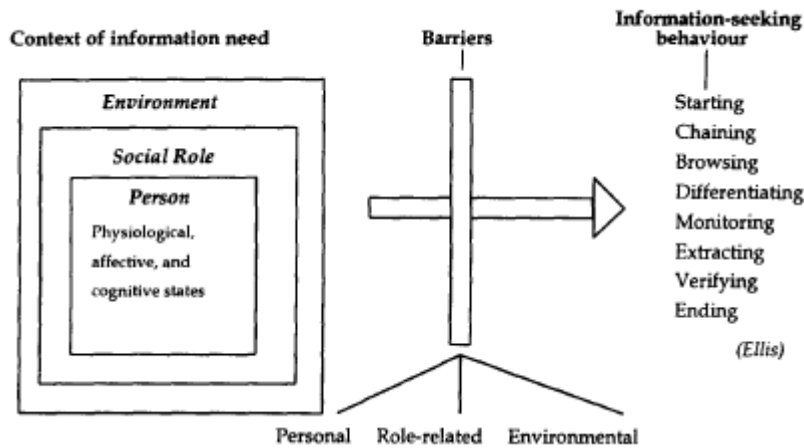
Figure 4 Wilson's Second Model (Wilson 1999)

2.5.5 Wilson's model of Information Behaviour 1996
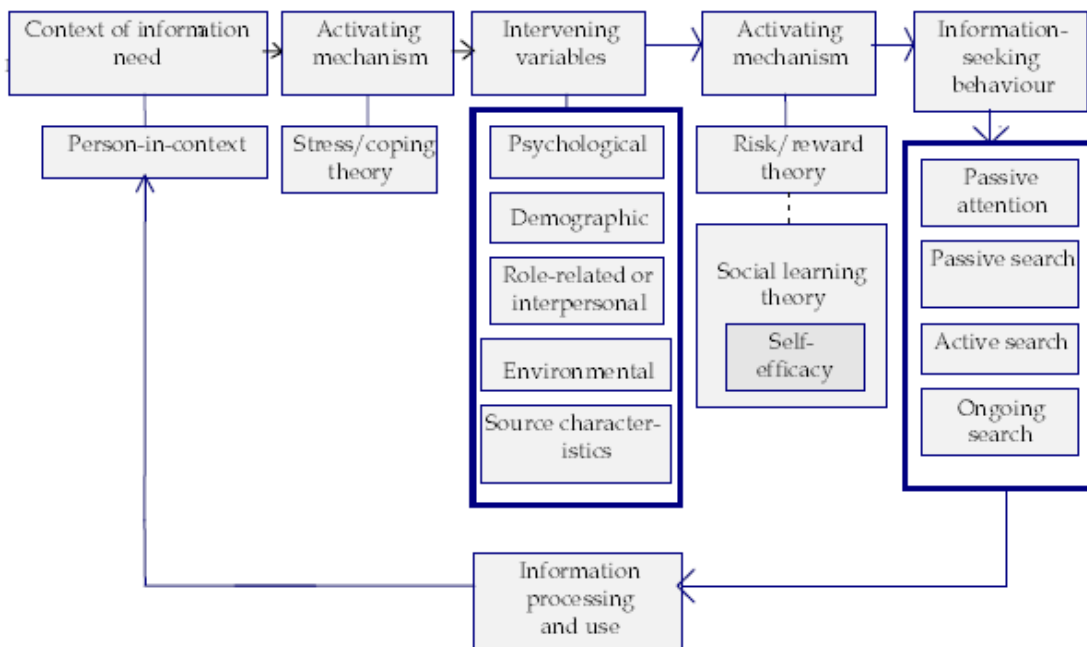
Figure 5 Information Behaviour Model (Wilson 2000)

The model devised in 1996 is a major revision of the 1981 model. The framework of the 1981 model persists at a basic level, insofar that the person in context remains the focus of information needs. However, there are changes; the use of the term intervening variables suggests that their impact may be supportive of information use as well as being preventative. Information seeking behaviour is shown to consist of more types than in the previous model and where the active search was the focus of attention; information processing and use is a necessary component of the feedback loop, if information needs are to be satisfied. Three relevant theoretical concepts are presented: stress/coping theory, risk/reward theory and social learning theory (Wilson 1999). In addition the 1996 model draws upon research from a number of fields other than information science, including psychology, decision making, innovation, consumer research and health communication (Wilson 1999).

Wilson (1999) describes these models as information behaviour models. They are concerned with the generalised behaviours surrounding the actual initiation of information seeking on one hand, on the other with a broader perspective of the information search than the use of computer based information retrieval systems.

Wilson devised three models from 1981 up until 1996. The first model was unusual as it was a model for information seeking behaviour rather than information needs, providing a person centred rather than system centred framework. The model describes the information seeking process in simple terms providing a basic overview of how individuals seek information, providing a framework that is relatable to research that seeks to assess person centred information seeking behaviour. The second model builds on the first to include barriers to information seeking behaviour. Written before general internet use for information seeking it still remains applicable to new sources of information due to its macro design. The third model expands again on the previous and relates most strongly to this research. Unlike the previous more generalised macro models, more concepts are indentified and incorporated which are seen in health related information seeking behaviours such as stress/coping theory. The model describes supportive and preventative attributes to information seeking, but describes the information seeking process as being linear with no provision in the model of the information feedback loop if the information needs are not satisfied. The models provide a clear and concise description of person centred information seeking in general, but as this research is also concerned with negative experiences in information seeking it does not describe how barriers are overcome, or recognise that people may not act in a sequential step by step manner.

2.5.6 Health Information Behaviour

As stated Wilson drew on many fields of research. Whilst some attributes of information behaviour are evident across differing research distinctions such as the need or motive to search for information or the subjectivity of seeking information which is evident in the context of information need: environment, social role, person, physiological, affective and cognitive states (Wilson 1997) other areas such as health information have very specific attributes such as monitoring and blunting as part of the stress/coping phase of information seeking.

Health care research explores the efficacy of channels of communication with those experiencing illness and healthy individuals and attention has been given to the predisposition to explore information or to reject it (Wilson 2000). This has been termed as: attention or orientation towards the threat (Krohne 1993), vigilance, sensitisation and monitoring (Miller & Mangan 1983) and avoidance which Miller and Mangan (1983) refer to as repression or blunting, or monitoring and blunting to signify the behavioural counterparts of the cognitive terms. Research participants were divided into two groups, monitors and blunters according to their scores of the Miller Behavioural Style Scale. Individuals are divided into the two categories determined by their self reported preferences for information or distraction (Wilson 2000).

Monitors prefer a high information input before a stressful event and suffer less stress when they have information, whilst blunters prefer less information and suffer more stress when they have a high information input, they, when left to their own devices prefer not to seek threat relevant information. Monitors are more actively interested in information relevant to their health and the interest occurs earlier in the illness (Wilson 2000, Baker 1995, Miller & Mangan 1983).

The term monitoring and blunting relates to the stress/coping element in Wilson's 1996 model. Wilson (1997) states that purely cognitive drives cannot explain information seeking behaviour, as, even in critical circumstances where knowledge gaps are evident, people do not always seek medical information. The information that may enable help could be perceived as a threat in itself (Van Zurrens and Wolfs 1991).

Johnson and Meischke (1991) express the reasons for health information seeking as being that: increasingly, the responsibility for health related matters is passing to the individual. Individuals are now living in an era that advocates actively seeking information as the social norms that cast doctors as the brokers of medical information has now yielded to new

information sources. The individual must now choose between these sources and use the information acquired to select options for health, for treatment and for prevention.

The above section describes the use of terminologies specific to health information behaviour, drawing parallels between the stress/coping element in Wilson's 1996 model and monitor and blunters (Wilson 2000, Baker 1995, Miller & Mangan 1983). This is potentially of value for this research as it is concerned with health and information seeking and it may explain certain health information seeking patterns that emerge from the data.

2.5.7 Kuhlthau's Information Search Process Model

Kuhlthau's model describes the information search process (ISP) from the users' perspective, in this research context, the ISP is the user's constructive activity of finding meaning from information to extend their state of knowledge on a particular problem or topic. Incorporating a series of encounters with information within a space of time uncertainty and anxiety are an integral part of the process documented within the model, particularly in the beginning stages, relating to the active search element of Wilson's 1996 model of Information Behaviour (Kuhlthau 1991).

Representing the user's sense making process of information seeking three realms of activity were incorporated: physical, actual actions taken; cognitive, thoughts that concern both process and content; and affective, feelings experienced. The information search begins with the user's problem. The gap between the user's knowledge about the problem and what the user needs to know to solve the problem is the information need. The state of knowledge experienced by the user is dynamic, rather than static, changing as the process proceeds (Kuhlthau 1991, Belkin et al 1982).

Kuhlthau's process model was initially based on longitudinal studies of high school students, a total of 5 studies. The first study was augmented by case studies, resulting in the development of the model; this was then tested in two longitudinal studies and further verified in two large scale field studies. The six stages of ISP identified were: Initiation, selection, exploration, collection and finally presentation (Kuhlthau 1991, Wilson 1999).

- Initiation – awareness of a lack of knowledge or understanding, feelings of apprehension and uncertainty. The task at this point is to recognise a need for information. Thoughts centre on contemplating the problem, comprehending the task

and relating the problem to prior experience. Actions involve discussion of possible topics or approaches

- Selection – the task is to identify and select the general topic to be investigated, uncertainty often gives way to optimism after the selection has been made. Thoughts centre on weighing perspective topics against various criteria i.e. information available. The outcome of each choice is predicted and the approach judged to have the greater potential for success is chosen. Typical actions are to confer with others. If a selection is postponed feelings of anxiety are likely to intensify until action is taken.

- Exploration – characterised by feelings of confusion, doubt and uncertainty, which frequently increase during this phase. The task is to investigate information on the topic in general in order to extend personal understanding. Thoughts centre on becoming orientated and informed enough about the subject to form a focus or point of view. Actions involve locating information, reading and relating new information to what is already known. Information may not fit with previously held constructs and may seem inconsistent, feelings of discouragement or threat, inadequacy or frustration may occur with some individuals being inclined to abandon the search completely at this stage.

- Formulation – the stage of the ISP where feelings of uncertainty diminish and confidence increases. The task is to form a focus from the information experienced. Thoughts include identifying and selecting concepts from which to form a focused perspective of the topic, often resulting in a sense of clarity.

- Collection – the stage at which interaction between user and information system function most effectively and efficiently. The task is to gather information related to the focused subject. Thoughts involve defining, extending and supporting the focus; actions involve selecting information relevant to the focused perspective of the topic. The user has a clearer sense of direction facilitating a comprehensive search of available resources. Confidence continues to increase as uncertainty decreases with interest in the project deepening.

- Presentation – feelings of satisfaction are common if the search has been successful or disappointment if it has not. The task is to complete the search and to present, if necessary, the findings. Thoughts concentrate on the culmination of the search with a personalised synthesis of the subject. Actions involve a summary search where

decreasing relevance and increasing redundancy in the information encountered is experienced.

(Kuhlthau 1991)

Kuhlthau (1991) builds a strong model of information seeking behaviour which is nested within Wilsons' active search section of the 1996 Information Behaviour Model (Wilson 2000). The strengths of the Information Search Process Model include being specific to one element of information seeking behaviour and that it was developed and tested through research studies providing evidence in real life situations. Whilst Wilson's (2000) model describes information seeking behaviour as sequential in nature, Kuhlthau (1991) recognises the state of knowledge as being dynamic. An extensive part of the model (Kuhlthau 1991) describes both positive and negative emotions which may present during the information searching process. Whilst Wilson (2000) described barriers to information seeking, Kuhlthau (1991) expresses what emotions may affect an individual at each stage of the process, including abandonment of an information search. A criticism of the model in relation to this research project is that while knowledge is described as dynamic within the information search process the model does not illustrate how an individual may need to revise and revisit specific steps in the process, such as selection and exploration, to potentially achieve their information searching goal.

2.5.8 Dervin's Sense making theory

Dervin developed the sense-making approach as a set of assumptions, a theoretic perspective, a methodological approach and a set of research methods. The approach is implemented in four constituent elements – a situation in time and space, which defines the context in which an information problem arises; a gap, which identifies the difference between the contextual situation and the desired situation; an outcome, the consequences of the action and a bridge, that is the means of closing the gap between the situation and outcome
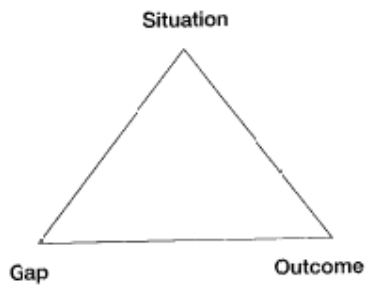
Figure 6 Sense Making Theory (Wilson 1999)   *Figure 7 Modified Sense Making Theory (Wilson 1999)*
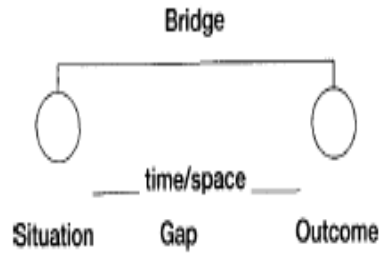
The Sense-Making theory has the potential to reveal the nature of a problematic situation, the extent to which information may serve to bridge the gap of uncertainty and the nature of the outcomes from the information use. Applied in 'micro' moments in time line interviews genuine insights might occur in the exploration of solving a problem (Dervin 2005, Wilson 1999, 2000).

2.5.9 Spink's Framework of Information Behaviour

Whilst the previous models discussed concentrated on information behaviour as a whole, containing different elements, Wilson (1981, 1996) or specific roles and processes within information seeking, Kuhlthau (1991). Spink's framework for understanding information behaviour includes evolutionary aspects including the evolution and emergence of information behaviour as a human instinct and intelligence which is set alongside a human evolution timeline (Spink 2010).
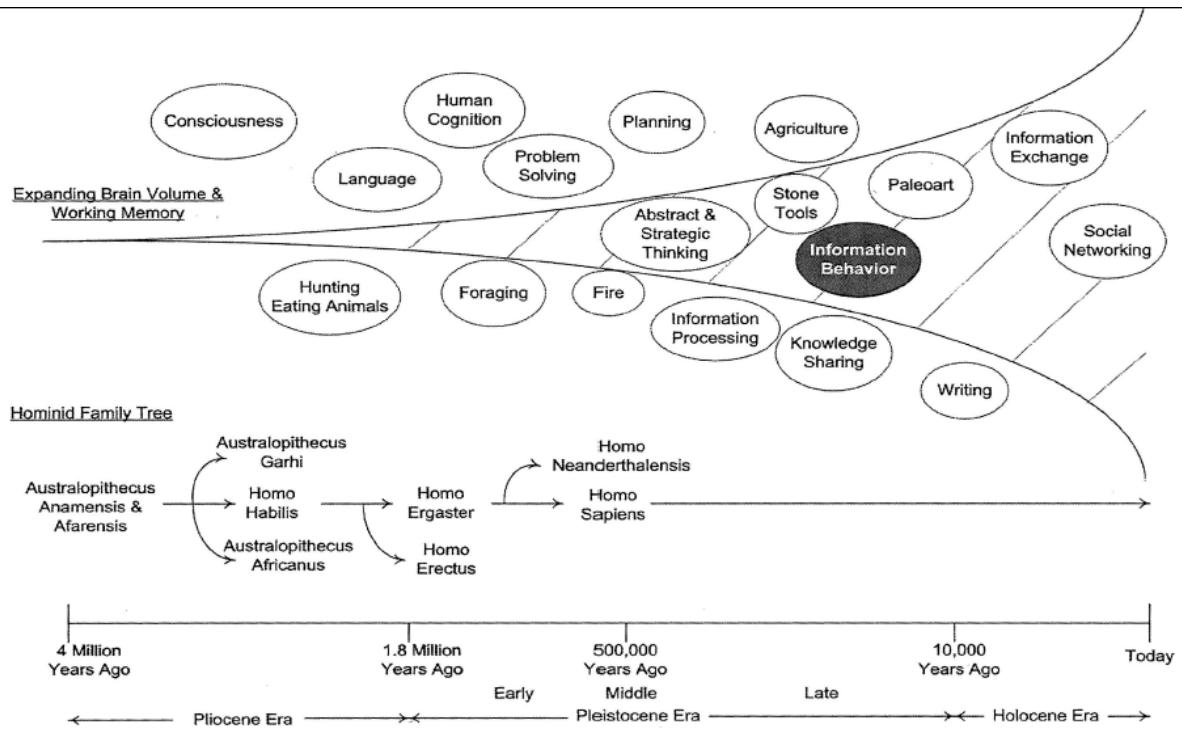
Figure 8 Information Behaviour Evolutionary Timeline (Spink 2010).

INFORMATION BEHAVIOR

Level						
Sub Process	Seeking	ELIS Sense Making	Foraging	Searching	Organising	Using
Information Grounds	Physical Location		Physiological Location		Virtual Location	
Lifetime Development	Infancy	Childhood	Juvenility	Adolescence	Adulthood	
Human Cognitive & Social Behavior	Information Intelligence	Biological Secondary Ability	Multitasking & Cordinating	Socio-Cognitive Ability	Environment	Affective Traits	Information Processing
Evolutionary Foundation	Evolved Behavior	Biological Primary Ability	Genetic Adaptation	Language	Instinct	Survival & Reproductive Pressures	Motivation to Control

Dimension

Figure 9 Theoretical Framework for Information Behaviour (Spink 2010)

Spink (2010) states that information behaviour is an evolved behaviour with biological and cultural aspects, but it is also instinctive, evolving over a human lifetime enabled by cognitive and social behaviours with affective, individual/collaborative, multitasking dimensions and is made up of sub processes including information seeking, foraging, sense making, organising and using. Spink (2010) uses a historical, evolutionary approach to illustrate the origination and emergence of information behaviour throughout the history of humankind. The time line depicts the human species for example Homo sapiens or Australopithecus ananmensise against the era in which they emerged and approximately how many years ago they were active in that form. Parallel to this is the upper level of the time line showing the emergence and evolution of cognitive skills due to expanding brain volume and working memory. Information behaviour is seen to emerge at the point of evolution approximately between 500,000 and 10,000 years ago during the late Pleistocene Era during evolution of the human species to the homo sapien stage who had enhanced socio-cognitive abilities. In terms of expanding brain volume and working memory this is when socio-cognitive abilities and skills such as knowledge sharing and paleoart were evident. The second figure demonstrates a theoretical framework for information behaviour. The model shows that information behaviour is underpinned by five levels of dimensions and this provides the underpinning for the conceptualisation of information behaviour (Spink 2010).

Expanded Cognitive Abilities

The expansion of cognitive abilities in early human beings that emerged in Homo sapiens included information behaviour, one attribute in a package of evolving expanded cognitive abilities, which include:

- Brain volume expansion – a major factor in neuro-evolution from early humans to Homo sapiens. Volume expansion led to the development of consciousness and enhanced socio-cognitive skills over a long period of time (Hodgson & Helvenston 2006, Wynn & Coolidge 2005, Spink 2010).

- Working Memory Expansion – the ability to hold various pieces of information simultaneously and utilise them for further processing.

- Emerged Cognitive Abilities – the integration of local and global brain capacities including sentience, primary consciousness and subjectivity (Zelazo, Moscovitch &Thompson 2007).

- Socio-Cognitive Abilities – the ability to integrate action across time and space, holding a variety of information in active attention. The development of more complex social competencies and relationships and a motivation to control through cooperation and competition.

(Spink 2010).

The Information Behaviour Framework

The information behaviour framework consists of five dimensions: evolutionary foundation, human cognitive and social behaviour, lifetime development, information grounds and sub process.

- Evolutionary foundation – information behaviour evolved as a cognitive mechanism with various dimensions and attributes including: genetic adaption and trait, biologically information behaviour is a primary ability shaped by instinctive and environmental factors. Information behaviour enhanced early human survival and emerged as a mechanism that enhanced early humans' ability to control their environment.

- Human cognitive and social behaviour – information behaviour is a form of human intelligence and at the human cognitive and social behaviour level it is a biological secondary ability. Information behaviour is a socio-cognitive ability underpinned by information processing and has affective dimensions in addition to multitasking and coordinating dimensions.

- Lifetime development – the process of physical and cognitive development that are related and act together, growth, maturity, aging and cultural processes (Bogin 1999, Rayner et al 2005, Rogoff 2003).

- Information grounds – the physical, socio-cognitive and virtual locations where information behaviour exchange occurs. An information ground is where the exchange takes place on a micro level for instance a waiting room, coffee shop or an internet chat forum, where diverse people exchange and talk.

- Information sub processes – information behaviour occurs as interplay of the different sub-processes over time. Sub-processes are information seeking; the purposive seeking of information; everyday life information seeking – sense making, the combination of non-purposive and purposive sub-processes; information foraging, the selection of an information patch to find clues for useful information. The human information forager uses the proximal perception of information scent (Pirolli & Card 1999) to assess the profitability of an information source in comparison to other potential sources.

- Information searching – the interaction process of queries and judgement about retrieved documents, usually associated with information retrieval and Web technologies

- Information organising – the sub-process of analysing and processing into categories

- Information using – the incorporation of found information into a pre-existing knowledge base by cognitively processing/acquiring the information (Ford 2004, Todd 1999)

(Spink 2010).

3 Research Methods

3.1 Research Philosophies

3.1.2 Introduction to Research Philosophies

Research philosophies or paradigms are the factors that underpin how research is conducted, each consisting of their own different views of the world to be investigated and how knowledge is acquired about it, essentially ontology (theory of the nature of social entities, foundational beliefs about the empirical world being researched) and epistemology (a theory of knowledge, a broad and high level outline of the reasoning process enabling logical and empirical work). Currently positivism, postpositivism and interpretivism are the three main traditions accepted within information science disciplines (Oates 2007, Pickard 2007, Bryman 2012).

3.1.3 Positivism

Described as a natural science epistemology, positivism underlies what is termed 'the scientific method' the approach to research in areas such as physics, chemistry, astronomy and biology. This method has evolved over the last 400- 500 years developing becoming established in the research community (Bryman 2012, Oates 2007). Positivism was the philosophy synonymous with the work of Bacon or Galileo, with natural science being dominated by Newtonian mechanics (general physics, based on the studies of Isaac Newton) well into the 19th century (Oates 2007, Pickard 2007, Oxford Dictionaries 2016). During the 19th century Auguste Compte devised social positivism as a way to examine social phenomena taking the rules and practices of the natural sciences and applying the same techniques to human behaviour and social theory. By taking this outlook Compte rejected the notion that society could not be examined in the same way as natural objects because it was not beyond physical perception (Pickard 2007).

Positivism advocates the application of the methods used in the natural sciences to the study of social reality and entails certain principles:

- Phenomenalism – only phenomena and therefore knowledge confirmed by the senses can be warranted as knowledge. Only that which is real can be observed.
- Deductivism – the theory is used to generate hypotheses that can be tested allowing explanations of laws to be assessed.

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- Inductivism – knowledge is derived through the gathering of facts that provide the basis for the laws
- Objectivity – the assumption of an existence of an objective, independent and stable reality that can be discovered and analysed. The investigator and the investigated remain independent of each other throughout the process
- Purpose – the explanation of how things happen in order to predict what comes next whilst being in a position to control what happens, described as prediction, control, explanation, verification.
- Quantitative methodology is applied when using the positivist philosophy.

(Bryman 2012, Pickard 2007).

3.1.4 Postpositivism

Positivism was an emulation of the natural sciences, postpositivism was a reaction to the perceived failings of this philosophy. This was partly driven by the fundamental change of natural science from the mechanistic Newtonian concept to newer frameworks driven by uncertainty and relativity. This change in paradigm from the natural science aspect drove social scientists to question how it was still possible to study social facts – if the natural world could no longer be studied from a deterministic mechanical perspective it was certainly no longer possible to study the social world using this method. A need for refinement and development in social science research was identified and postpositivism was the result (Pickard 2007).

Whilst postpositivism, like positivism, is the belief in the existence of facts that are independent of and external to human beings, the postpositivist philosophy takes these facts to be subject to uncertainty and probability. Cause and effect relationships do exist but they may not be 'known' in their entirety. The epistemology of postpositivism is one of modified dualist/objectivist. The positivist epistemology expects an 'objective observer', the observer is divorced from the observed, they are independent of each other. Postpositivism epistemology is one of acceptance that independence is not possible but objectivity is the goal, demonstrated throughout the process by the observer (Pickard 2007).

The purpose of postpositivism remains very close to that of positivism, the most significant difference is that of falsification, disproving the existence of a phenomenon had become a valid and legitimate outcome of a research project. Postpositivism allows the use of generalisations about the phenomena that are being investigated and unlike positivism

methodological dualism; quantitative and qualitative approaches are acceptable in research using this philosophy (Pickard 2007).Postpositivism is the philosophy that is being followed in this study. This is because of the acceptance of methodological dualism; this study uses both quantitative and qualitative methods, which is not acceptable in the positivist philosophy. In relation to this study the researcher is taking the perspective of the objective observer, the observer remains separate from the observed, unlike interpretivism, in which quantitative methods are unusual.

3.1.5 Interpretivism

Interpretivism is a direct contrast to positivism; often it is used as a term to cover a number of approaches to research. Interpretivism takes the view that the subject matter of the social sciences is fundamentally different from that of the natural sciences. To study the social world, a logic or procedure is needed that reflects the distinctiveness of humans. The core concept of interpretivism is the interpretive understanding of social action, generally using qualitative methods (Bryman 2012).

Phenomenology is considered an influence that was responsible for the evolvement of interpretivism as it is concerned with how individuals make sense of the world around them and how the observer may have preconceptions regarding this environment (Bryman 2012). A phenomenological study is the description of the meaning of a lived experience for a group of individuals about a specific concept or phenomenon; the phenomenologists therefore explore the structures of consciousness in the experiences of humans (Creswell 1998).

In contrast to positivism, interpretivism believes that realities are multiple, holistic and constructed, reality is not singular and tangible. Instead it is complex and multiple. Interpretivism also believes on a number of levels that the observer and the observed are not independent or objective of each other, they influence each other. Knowledge is gained as it is a product of the interaction between the researcher and the subject and both are changed by the experience. Interpretivism is context driven aiming to understand the entire context at micro and macro environmental levels, as the time and context in which the information is gathered is seen to influence this data (Pickard 2007).

3.2 Quantitative Research

The design of quantitative research is of a linear approach with a succession of stages. Stages involved in this research include theory, hypothesis (a hypothesis is only strictly compulsory when true experimental research is the chosen method, in other cases the hypothesis can be translated into aims and objectives), research design, measures of concepts, selection of research sites and selection of research respondents or subjects. The process continues with administering the research instruments and data collection followed by processing and analysing the data to provide the findings and conclusions of the study (Bryman 2012, Pickard 2007).

Quantitative research is primarily concerned with measurement, causality, generalisation and replication. Measurement is used in terms of concepts to be used as variables, to delineate fine differences and provides a consistent device for gauging differences. Causality allows the quantitative researcher to go beyond the boundaries of describing 'how' things are and try to express 'why' they are by examining what is thought to be the causes. Generalisability refers to the sample population and if in fact the findings from researching this specific population could be applicable to the whole population from where the original sample was drawn. Replication or the ability to replicate research is seen as important being able to replicate research with the same results compounds the validity of a study. As quantitative research is based on numbers statistical analysis is usually employed on a number of levels dependent on the type of data generated. This includes nominal, ordinal, interval, ratio, discrete or continuous data. The data, depending on the type generated or how they were generated can be analysed using inferential or descriptive statistics. Quantitative data is mainly produced by experiments or surveys (Bryman 2012, Oates 2007) In the case of this research a survey is used to produce the quantitative data.

3.2.1 Surveys

The purpose of using the survey as a research method is to gather and analyse data by questioning individuals in a standardised and systematic way which is applied equally and consistently to all participants (Bryman 2012, Oates 2007) in this study across a number of locations. The survey is used to study the relationships between variables or to describe certain characteristics of the population. If possible, the findings of the survey can be generalised to the wider population through the use of a representative sample or census. The term 'survey' is often used interchangeably with questionnaire, although the questionnaire is the research instrument used to generate the survey data. The

questionnaire is used frequently when employing surveys as a research method but other research instruments such as interviews, observations or documents can be used (Pickard 2007, Oates 2007, Oppenheim 1992). A questionnaire based survey is used in this study as a data collection method to ascertain consumer opinion and experience of using OTC medicine and health information seeking patterns and preferences.

3.2.2 Survey types

Surveys are typically described as being descriptive or explanatory/analytic by design. The descriptive survey aims to estimate the nature of existing conditions or attributes of a population. That is to describe a situation or look for patterns within a sample group that can

be generalised to the defined population of the study. As the descriptive survey is designed to count, to say what proportion of a population have a certain opinion or association between events it cannot offer an explanation or show causal relationships between variables, it is essentially fact finding. Descriptive statistics are used to analyse this type of survey (Pickard 2007, Oppenheim 1992). Explanatory surveys are less orientated towards representativeness and more towards finding explanations and associations. The explanatory survey design is less disposed towards description and enumeration and more towards prediction. This is enabled by applying inferential statistical techniques to the data which may establish a relationship between the variables (Oppenheim 1992, Pickard 2007).

3.2.3 Survey response rates

Response rates to surveys may be determined by a number of factors:

- The research instrument employed such as questionnaire or interview
- How the data is generated – online, postal, or phone survey
- Length of survey

Using a structured interview to generate survey data can provide a good response rate but employing this method is often time consuming, expensive and can be subject to bias. The self-completion or self-administered survey is often a popular method used to generate data (Bryman 2012). This method comes in several different forms, the most prominent being a postal survey or an online survey. The term 'self-completion' survey also covers other forms of survey administration such as when the researcher is present to hand out and collect surveys, sometimes described as the 'supervised self-completion survey' (Bryman 2012).

Pickard (2007) describes the 'supervised self-completion' survey as the most successful approach when the survey is distributed to a group when they are gathered together in a particular location. The survey used is a self-completed survey, as the researcher will be present to hand out and collect surveys at each location, and an online survey. Self-administered surveys often consist of closed questions and are shorter than their structured interview counterparts. Closed questions and easy to follow survey designs are often utilised as the closed questions are easier and less time consuming to answer and an easy to follow design will potentially minimise mistakes. Self-completion surveys may also be shorter than other survey designs to reduce the risk of respondent fatigue, the respondent who tires of a long list of questions will find it easier to terminate this type of survey design rather than an interview (Bryman 2012).

Reporting of response rates, in proportion to surveys distributed, for completed surveys vary. As already established, using a structured interview can result in receiving more completed surveys but self-administered surveys are often used more frequently, these are often paper-based or delivered via the internet. Mangione (1995) suggests that an 85% + rate of response is excellent for a postal survey, whilst a less than 50% response is not acceptable. Oates (2007) states that a 30% response rate is quite high as response rates to a postal survey of 10% are not uncommon. Online surveys also are considered to have a low response rate; typically responses are lower than those for comparable postal surveys (Bryman 2012). A rate of response between 10% and 30% is not uncommon, although rates of 10 – 15% have been reported (Wadia & Parkinson 2010, Surveygizmo 2010).

3.3 Qualitative Research

Qualitative research is an approach that emphasises non numeric raw data (such as documents, interview transcripts or pictures) rather than quantification in the collection and analysis of data; broadly it is inductivist, constructionist and interpretivist. Although content analysis is an exception to this. Qualitative research does not adopt the natural scientific model but aims to understand the social world through examining the interpretation of that world by its participants (Bryman 2012).This may be defined as:

'Qualitative research is an inquiry providing understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports, detailed views of informants and conducts the study in a natural setting.'

(Creswell 1998, p15).

Methods of qualitative inquiry include the biography, phenomenological study, grounded theory, ethnography/participant observation and case studies (Creswell 1998, Bryman 2012). More recently the critical incident technique (CIT) has been utilised as a qualitative method of inquiry within health and information science disciplines (Urquhart et al 2003, Bradley 1992).

Qualitative research is deemed emergent and iterative, the concept of the emergent design is based on the view that the researcher does not know what they do not know at the beginning of a study. It would be impossible to ascertain how the unknown could manifest itself to the observer during the course of the research (Lincoln &Gruber 1985, Pickard 2007). Iteration occurs until the data saturation point is reached (thematic exhaustion – the point where no new themes emerge and coding is no longer feasible) and analysis begins. Qualitative analysis is usually inductive and consists of themes or codes although quantitative methods such as content analysis have also been employed (Pickard 2007, Oates 2007, Bryman 2012).

Grounded theory utilises emergent and iterative analysis as core concepts, as do general inductive approaches (Cho & Lee 2014). The term grounded theory was first introduced by Glaser and Strauss (1967)and is described as a reaction to positivism in which a theory can be achieved from observations and the observers' consensus (Cho & Lee 2014, Suddaby 2006).Whilst grounded theory shares similarities with other methodologies used in qualitative research, grounded theory has very specific procedures. Central to this is the use of a process which is open ended and iterative which simultaneously involves data collection,

coding and memo writing to construct theories (Groat & Wang 2002, Cho & Lee 2014).Oates (2007) states that claims to conducting grounded theory as a research approach are often incorrect and that what is being used is just an inductive approach to analysis. Bryman (2012) reinforces this opinion suggesting that grounded theory is honoured more in the breach than in observance. The implication is such that grounded theory is claimed to be used but there is little evidence of the use of the specific procedures involved (Bryman 2012, Locke 1996, Charmaz 2000).

3.3.1 Qualitative Survey Design

Like quantitative survey design, the qualitative survey can employ different instruments to facilitate data collection such as interviews, observations, documents (Oates 2007), or as in this study a questionnaire. The qualitative element of the survey is incorporated into the questionnaire which also includes quantitative questioning, so will be a paper based and online self-administered survey.

The type of questioning used in the qualitative survey design is 'open' meaning that the respondent is not given a set of pre-defined answers in response to the question asked (Oates 2007). There are advantages and disadvantages to using this type of question. Advantages include:

- Respondents can answer on their own terms, they do not have response choices foisted on them (Bryman2012)
- They allow unusual responses to be derived, that the survey research may not have contemplated, which would therefore not form the basis for a fixed response (closed) question (Bryman 2012).
- Respondents levels of knowledge and understanding of issues can be explored (Bryman 2012)
- They enable the grasp of the full richness of an individuals views, expressed in their own words (Oates 2007).

Disadvantages include:

- They require more effort to answer for the respondent, which can be off- putting. The respondent has to write for longer, therefore it is suggested that the open question has limited utility in the context of self-completion questionnaires (Oates 2007, Bryman 2012).

- Responses to open questions take longer to code and analyse than closed questions (Oates 2007, Bryman 2012).

3.3.2 Sampling

Sampling provides a method to select units when it is not possible to include the whole research population within a study; instead a segment of the population is selected for investigation. The method of sampling chosen plays an important role in the research investigation. The choice of approach should be largely influenced by the purpose of the study but it is often accepted that a sample can represent a compromise between the attainable and the desirable (Pickard 2007, Bryman 2012).

Generally a sampling method can be classed as probable or non-probable (purposive). Examples of probability sampling include random sampling, cluster or stratified sampling. All three methods allow the findings to be generalised to the population, the findings from the sample group can be inferred to the wider population group from which it was selected (Bryman 2012, Oates 2007). Probability sampling, especially random sampling, is often the preferred method of drawing a sample group but on occasion it may not be possible. Time and financial restraints can make this method of sampling problematic or the nature of the research may make it difficult to select a sample from the general population (Bryman 2012, Oates 2007). In qualitative sampling the case may be selected on the basis of what can be learned from that specific case, the goal not being using the data to make inferences to the wider population (Pickard 2007).

Types of non-probability sampling methods include quota, convenience, judgement, expert or snowball sampling (Oates 2007). As it is not feasible that any one unit from the wider population may be selected for the sample it is not possible when using these methods to generalise across the whole population (Oates 2007). Convenience sampling plays a more prominent role than is often supposed, certainly in the field of organisation studies and in the field of social research. This could be due to the fact that convenience sampling can be utilised when the chance presents itself to gather data from the convenience sample and that it represents too good an opportunity to miss collecting the data (Bryman 2012). The environments selected for this research presented an ideal opportunity to employ convenience sampling, due to a high turnover of people in the vicinity and also the online sample which allowed individuals to 'opt in' to the research, should they wish.

3.3.3 The Critical Incident Technique

The use of the Critical Incident Technique (CIT) as a methodology in social science has grown in popularity with researchers over recent years (Urquhart et al 2003). Closely entrenched in qualitative research, CIT was developed by Flanagan and various collaborators in 1954, after a decade designing and utilising the methodology. CIT, whilst now used in many areas of research was initially developed in its present format as an outgrowth of studies for the Aviation Psychology Program of the United States Army Air Forces in World War II. The aim of this Aviation Program, established in 1941, was to develop procedures for the selection and classification of aircrews and to assess performance in professional practice. Whilst Flanagan is regarded as the major developer of CIT in its present form, roots of the procedure may be traced to the previous studies of Sir Francis Galton circa 1874, observational tests and anecdotal records (Flanagan 1954, Urquhart et al 2003).

3.3.4 What is a critical incident?

When using this method of qualitative research it is vital that the definition of a critical incident is understood, as the researcher will have to eventually elicit a critical incident from the potential participants. Flanagan (1954) states that a CIT is a set of procedures for collecting observations of human behaviour to facilitate their potential usefulness in solving practical problems and the development of broad psychological principles. Flanagan (1954) defines the incident as any observable human activity that is complete enough to permit inferences and predictions to be made about the person performing the act. For an incident, to be critical, it must occur in situations where the purpose or the intent of the act is fairly clear to the observer and where the consequences are sufficiently definite to leave little doubt concerning the effects.

The definition of CIT has changed little since 1954. Zaidman-Zait (2007) describes CIT as a method which provides the opportunity to examine how in a social context the phenomena can be investigated, through the exploration of subjective meaning. The technique is further described as a holistic inquiry method providing detailed data of multiple aspects within the topic being studied. The term 'critical' referring to the fact that the described behaviour within the incident plays an important or critical role in determining the outcome (Kemppainen 2000). As a qualitative method designed to draw out the most memorable aspects of an experience and because CIT is a vehicle to express perception in the respondents own

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words, identifying important aspects from their viewpoint, the healthcare consumer in this instance, careful wording of the survey is important (Ruben 1993, Davis et al 2009).

The words 'critical' and 'incident' when used generally often have negative connotations, especially when used in health or medical related fields. The definition of critical includes pertaining to a crisis, decisive importance with respect to an outcome or of a medical patient's condition, such as critical care, critical condition. Incident, whilst pertaining to an individual event or occasion, is again not often used in the English language to convey a positive event (Dictionary.com 2012). It was with this consideration that the word 'critical' was not used in the survey as respondents could possibly be unwilling to share experiences if they considered them not critical enough. With regard to this, Norman et al (1992) preferred to use the term revelatory instead of critical. This was to ensure that participants were aware that the situation in question should be meaningful or significant, but not a dangerous situation.

3.4 CIT in Research

3.4.1 Service Based Industry

CIT has become widely used across many areas and disciplines of research, especially in information science and also within organisations. Whilst it was first utilised on a large scale by the Aviation Psychology Program to research failures in flying related incidents (Miller 1947, Flanagan 1947 and Wickert 1947), CIT later became a popular method for other organisations including business, where consumer opinion was sought. In service research literature the critical incident is considered a tool for managing services, having been applied to service and interaction situations. CIT has become a tool for reflecting customer perceived quality and dis/satisfaction, based on positive and negative incidents (Bitner et al 1985, 1989, 1990, Edvardsson 1988, 1992, Stauss 1993). Later studies tended to focus on the relationship between customers and service providers. Strength of the customer relationship and service providers using positive and negative incidents was studied by Strandvik and Lijander (1994). The customer relationship continued to be highlighted by Keaveney (1995), by researching customer switching behaviour focusing on negative incidents. Douglas-Hoffman et al (2003) also explored the relationship between customers and service organisations with an emphasis on service failures.

Other research has used the CIT as a solution to problem solving or trouble shooting. Davis (2006) advocates the use of CIT as it provides an organisation with a starting point,

advancing its development through the learning experience, identifying the organisation's impact on customers as well as showing its failures. Lockshin and McDougall (1998) reported that CIT helped organisations to anticipate potential problems and respond to customer needs, whilst Johnston (2004) suggested that merely satisfying customers was just not enough, that they actually should be delighted. To enable this, the organisation needs to understand what the customers want from them. Therefore CIT provides the ideal vehicle to extract this type of information verbatim from the customer base (Douglas et al 2009).

Healthcare provides a service and users of the service are consumers. Healthcare provides a service in terms of access and provision to varying aspects of medicine including, but not limited to, health information and the use of OTC medicine. From a customer perspective this use of CIT can provide qualitative insight into experiences, both positive and negative, of OTC medicine and information seeking. Using CIT in the service based industries, organisational and business, can identify areas of success or failure by extracting opinions directly from the consumer and use the information to form recommendations for change or improvement should it be needed. These concepts can be applied to this study in terms of negative and positive experiences reported by the healthcare consumer verbatim and form the basis for improvements and recommendations.

3.4.2 Education

The use of CIT has become more widespread, due to its growing popularity within higher education, libraries and health/medical research, as all of these areas have consumers of their 'products' and some are facing strong competition from other organisations (Douglas et al 2008). This may be due to successive UK governments attempting to reorganise the public sector by the introduction of a stronger element of commercial enterprise, from which higher education has not been immune with policies aimed at introducing market principles into the sector (Douglas et al 2008). It is argued that the general public (including students), as consumers are used to exercising choices about the services they use and where they spend money and are no longer accepting the role of passive recipients to the service provided (Wright & Ngan 2004).

This focus for questioning potentially allows the organisation to review areas of strengths or weaknesses using the perspective of the service user. Higher education is a relatively new area where the CIT is being utilised. Douglas et al (2008, 2009) used this technique to question students about the perceived quality and the satisfaction/dissatisfaction of the student experience within their university. It was recognised by Aldridge and Rowley (1998)

that there was a need for a more comprehensive and sophisticated methodology for measuring student satisfaction. Douglas et al (2008) found that CIT, not widely used in non-education sectors could be used for eliciting student feedback. The findings allowed the university in the study to understand the most important areas of the student experience, from the student perspective and begin to make changes in areas which were viewed as being negative. Douglas et al (2008), state that it may not be easy to reduce the number of negative responses, but if successful, improved student retention, recruitment and financial stability for the institution should ensue. Radford (2006) used CIT used fifth and seventh grade students in New York to gain their perceptions regarding interactions with urban public librarians and library staff, using both positive and negative incidents.

This reflects a change in attitude by the consumer from being a passive recipient to actively exercising choice in the education sector, but this may also be true of the OTC medicine and health information consumer in terms of attitude and opinion, such as preferred sources of information and the purchase of OTC medicine. Again, the questioning focuses on factors that are positive or negative – satisfaction or no satisfaction, which can determine areas of weakness within an organisation or process.

3.4.3 Healthcare

The use of CIT in health care research including nursing has increased. This may be in part driven by the realisation that the healthcare seeker is actually a consumer and now has more choice in how or where they seek care. Urquhart et al (2003) and Bradley (1992) suggest that the preponderance of CIT studies in health services is notable, suggesting that health care professionals may prefer to structure their knowledge according to story schemata, rather than evidence-based practice, case report or medical case presentation as CIT may provide more understanding of the nature of care.

Research within nursing using the CIT methodology has become almost commonplace, focusing on a variety of areas within the subject. It has been found that CIT can facilitate an understanding of the nurses' role and the various interactions between nurses, clinicians and patients (Byrne 2001). Examples of CIT being used in the nursing sector include Redford and Norman (1999), Grant and Hrycak (1987), Longo et al (1993), Ruben (1993), Beech and Norman (1995), and Grant et al (1996). These studies were concerned with the quality of nursing care. The studies above mainly used the patient as the respondents, but some of the studies also used contributions from the health care employees. Many of the studies used the opinion of patients or employees situated in medical, surgical or elder care wards.

Minghella and Benson (1995), investigated reflective practice in mental health nursing, and Beech and Norman (1995), also used psychiatric ward settings, whilst Cox et al (1993) used a community setting. The CIT has been utilised to gain insight into how practical elements of nursing are seen as being positive or negative, Pryce-Jones (1992), identified patient opinion concerning the effectiveness of discharge procedures. Kent et al (1996) used the methodology in a study to evaluate an emotional aspect of care giving, in which it was described how the emotional needs of oncology patients were met or not met by the health care providers. Lewis and Williamson (1995) used CIT as well as quantitative methods to examine patient perceptions of quality care in general practice using patients from three GP practices in England.

The use of CIT methodology has become established in healthcare environments using opinions of the healthcare consumer and healthcare professionals. It is suggested (Urquhart et al 2003, Bradley 1992) that the anecdotal, experience driven schemata can provide more insight and understanding than quantitative methods as the individual has more scope to expand on their opinions and experiences. While CIT is qualitative by design, Lewis and Williamson (1995) combine this methodology with quantitative methods. The design of this research utilises both quantitative and qualitative (CIT) methods to provide insight into consumer attitudes to and opinions of OTC medicine and health information seeking with the qualitative aspect of the research emphasising positive and negative experiences in self care episodes and health information seeking.

3.4.4 Using CIT as a methodology

The utilisation of the CIT process (Flanagan 1954) involves five stages:

1. Determine the general aim of the activity
2. Develop specifications and plans for collecting the factual incidents
3. Data collection
4. Analyse data objectively
5. Interpret and report on the requirements, especially those which make a significant contribution to the activity

(Flanagan 1954, Urquhart et al 2003).

Stage one: This is used to determine the purpose of the study and identify what information the researcher wants to find out, culminating in the research question. The research questions were determined by the objectives of the research and the purpose of the study by

the research aims, that is, factors that govern (un)successful self care episodes using OTC medicines and (un)successful health information seeking. Specifically, what it is necessary to do and what is not to be done if the activity is going to be judged successful or effective (Fisher & Oulton 1999, Radford 2006, Schluter et al 2008). Flanagan (1954) summarises the general aim of the activity as being a brief statement which expresses the objectives to convey a uniform idea to the participants, although, in most situations there is no general aim which is the correct one, or a person or group of people who constitute absolute authority on the general aim of the activity. The general aim ultimately must be acceptable to the potential users. In the case of this study it was the general public who utilised leisure centres or craft/antique markets or responded online.

Stage two: This is concerned with plans and specifications. Prior to any data collection there is a need for sufficient preparation. This includes the environment where the data is to be collected and from whom the data will be collected, also the method of data collection (Radford 2006).This research focused on the general public using leisure centres, a craft market and the internet as environments where survey data was to be collected. Flanagan (1954) indicates that for direct observation of behaviour, the observer(s) should be familiar with the activity, that the group behaviour can be specified and categorised, or criteria developed. This is often true in the case of health service researchers as they are often from the same profession as the group to be studied, but less frequent in other organisation studies (Urquhart et al 2003).

Stage three: This stage deals with the development and construction of the actual data collection instrument and how this is undertaken. For instance the construction of a survey and how the survey is distributed – phone, paper based or online. A self-administered, paper-based and online survey was employed in this study. This stage underlines the importance of using the correct method of data collection. Record forms or direct observations can be useful when investigating explicit behaviour, but are less useful for unseen cognitive behaviours, such as clinical decision making or planning (Schluter et al 2008). It is also within this stage that any training materials or instructions to the observers must be developed if necessary. In regard to the scope of studies, many studies examine between 50 -100 incidents, with very few exceeding 300 incidents for analysis, each subject usually contributing one or two incidents (Urquhart et al 2003).

Stage four: Data analysis is the fourth stage within the process, requiring the largest investment in time as the goal of analysis is to make sense of a mass of data through techniques that describe and summarise the data efficiently (Fisher &Oulton 1999). Douglas et al (2009) describe analysing CIT studies as somewhat different from the traditional

questionnaire as there is a process of content analysis and coding so that the respondent's comments may be interpreted and inferences may be drawn from the collected anecdotes. Urquhart et al (2003) acknowledge that the formulation of categories and general behaviours are a subjective process. Each critical incident needs to be coded with a unique number, then read and sorted into content themes, which is an iterative process, often using content analysis to identify these common themes within the data (Hamer 2003, Radford 1999, 2006). Schluter et al (2008) promote a process of inductive analysis, a two level phase of interpretation. Firstly analysing individual transcripts and reading and re-reading individual transcripts several times to identify the themes and subthemes. The iterative process ensures that consistencies and inconsistencies can be discovered and emerging themes developed. The second level of data analysis involves the transcripts being read horizontally, grouping segments of scripts between transcripts. This reveals the differences and similarities of the transcripts aiding the development of overarching themes and subthemes. The second level of analysis was seen to be the most crucial step towards uncovering the hidden meanings of the events (Schluter et al 2008).

Positive critical incidents are categorised as satisfiers, whilst negative incidents are categorised as dissatisfiers, if an incident is deemed to be a catalyst for change in customer loyalty behaviour this is described as being critically critical (Douglas 2009, Edvardsson& Nilsson-Witell 2004). To sort the data into themes and subthemes a method of organisation is needed, this may be done manually or using a software package. A manual method of organising large amounts of textual data is the Multichromatic Analysis Technique (MAT). This involves using colours as aids to analysis. Software available for the analysis of CIT includes Nvivo a program specifically developed for the coding of themes and analysis of qualitative data (Radford 2006, Douglas et al 2008).

Stage five: The fifth and final stage is the reporting of the enquiry or project dissemination. Schluter et al (2008), state that the dissemination of research is all important within the research process, as a means to communicate knowledge to the profession. Therefore it is important to consider the target audience and tailor the feedback to that group. For the interpretation of results, a conceptual framework is recommended. Interpretation of findings is dependent on a solid grounding in a conceptual base allowing conclusions and implications to be drawn from the thematic base. When reporting findings of a CIT project it is important to ensure that the events or incidents are unrecognisable to maintain participant confidentiality (Radford 2006, Redman et al 2000, Schluter et al 2008).

3.4.5 Advantages of CIT

One of the main advantages of CIT is its adaptability or flexibility, allowing the methodology to be used in many research areas or disciplines. Adaptability is also evident in the way the research may be administrated and CIT lends itself to varied research philosophies, as it consists of a flexible set of principles, not a single rigid set of rules (Hettlage & Steinlin 2006). The CIT can be administered through focus groups, observation, one to one or group interviews or via a survey, either paper based, phone or electronic. Using a survey to gather critical incidents can be advantageous. The CIT survey can cover a large number of people and it is possible for a single researcher to collect numerous incidents over multiple sites (Schluter et al 2008, Radford 2006), as in this study. Flanagan (1954), states that the questionnaire can give results which are not essentially different from the results obtained by using the interview method.

Using CIT is also viewed as being beneficial to the participants, particularly where assurances of confidentiality and/or anonymity are granted,. Respondents of the survey were assured of anonymity. People tend to enjoy sharing stories, to feel that they are being heard and their experiences are deemed important, empowering the participant through this (Marrelli 2005, Hettlage & Steinlin 2006). Collecting data anonymously can provide incidents that contain more emotion laden data, whilst still protecting the participants' identity (Worthen & Sanders 1973, Serrat 2010).

Phrasing of questions in the CIT are another example of the methods' versatility. Formal phrasing of questions in a logical and/or chronological manner are most widely used, examples include research by Flanagan (1954), Zaidman-Zait (2007) and Kemppainen (2000). The CIT questioning in this research followed a formal framework which was chronological and logical in design. Questioning tends to follow the framework of:

- 'What were the events that led to the critical incident?
- What were the behaviours of the agents (respondents) that made these events a critical incident?
- What were the outcomes of the critical incident?
- What are the possible future outcomes if behaviours remain unchanged?
- What are the possible future outcomes if behaviours change in regard to lessons learned?'

 (Serrat 2010)

In practice this guidance may be rephrased in accordance to the environment it is to be used in and in regard to the anticipated needs of the target participant. Kemppainen et al (1999) asked patients with HIV/AIDS to recall a specific incident in how they respond to their nurses. When the participant had recalled this specific event they were then asked:

- 'What were the circumstances leading to that event?
- Precisely what did the nurse do?
- How did you respond?
- How did the actions of the nurse(s) affect your behaviour?'

Radford (2006) used a more informal approach in the paper based survey of 5th and 7th grade pupils' experience of public libraries in the USA:

'Think about the times you have visited the public library. Remember a time when you had a good experience in the library. Please write down what happened.'(Radford 2006).

Lewis and Williamson (1995) used CIT to describe the five pre-defined processes involved in booking an appointment with their GP. The five stages were pre-entry: appointment making; pre-entry access to the surgery; entry: reception and waiting process; appointment; and exit: from the end of the consultation, including dispensing of medicine and follow up.

It is recommended that the sample size of a critical incident study is based on the number of incidents, rather than the number of participants as it is the incidents, which may number more than one, which are being analysed rather than the participant (Schluter et al 2008, Kemppainen 2000). So it is feasible to conduct a study using CIT with a small sample population. CIT can also be used in conjunction with quantitative methods and studies have also used demographics questioning to form a frame of reference in regard to certain groups and their experiences in a given situation (Zaidman-Zait 2007).

3.4.6 Limitations of CIT

CIT does have some limitations. One of the main limitations is that CIT mainly depends on gaining data from a retrospective perspective, there is a reliance on an experience being recounted from memory, therefore there is the possibility it may not be wholly accurate. Reports of behaviour are filtered through the lens of the individuals' perception, honesty, memory and biases. There may be an impact on reliability and validity if the participants' responses are not interpreted as they were intended (Marelli 1990, Worthen & Saunders 1973, Gremler 2004). The use of software intended for analysing qualitative data, such as Nvivo™ or Atlas™, may help to limit misinterpretation of responses.

The analysis of CIT can be a long and laborious process (Marrelli 1990). It can also have a low response rate from participants' because of the time commitment it can take to retell an incident. It may be difficult to persuade respondents to share their critical incidents through a written survey as it requires more effort to write their stories (Douglas et al 2009, Marrelli 2005, Serrat 2010).

Surveys, including those using the CIT methodology may be subject to text bias. Burns et al (2000) found that friends tended to share information and reveal more details to other friends, rather than strangers and that more disclosure occurred with same sex friends than different sex friends (Jourard1971). CIT and other qualitative techniques may harbour subtle biases depending on factors such as the gender of the respondent, the topic or the cover story used by the researcher (Burns et al 2000).

3.5 Research Design

3.5.1 Survey Design

The survey was designed to gain data about respondents use and attitudes towards OTC medicine and health information seeking behaviour. Quantitative and qualitative methods were both used. Qualitative questioning used CIT as a method to gain insight into the experiences of the respondents both negative and positive aspects, when searching for healthcare information and using OTC medicine.

3.5.2 Question Design

The questionnaire consisted of a variety of different styles of questioning including closed, multiple choice questions, Likert type attitudinal scales and CIT methods. The first questions asked the respondent about how they viewed their health status and if they had any ongoing health issues to gauge the overall health and perceptions of health status of the respondents. Questions 3 – 7 focussed on the purchasing of OTC medicine, the type of OTC medicine, frequency of purchasing these, where they are normally bought and the importance of buying a brand name and what influences the purchase. This is to establish consumer use of OTC medicine, provision and access. Questioning about branded medicine and importance provides insight into the beliefs and values of the respondent which in turn can influence their attitude to and opinion of OTC medicine. Influences of the purchase of these drugs reflects normative standards and values. Bryman (2012) defines this as an indication of what principles of behaviour influence them (the respondent). The final question in this section asks the respondent if they think they have had any side effects caused by OTC medicine. This was asked to provide insight into individual experiences of OTC drugs as stated in the research aims and objectives.

The second section of questioning consisted of 7 point Likert type scales and a 'don't know' option, this was used as a measure for consumer attitude. The respondent was asked to what degree they agreed or disagreed with a particular statement. Areas of inquiry included the effectiveness of OTC medicine and price, to establish attitudes and opinion of the respondent. Further questions asked about the respondents confidence in correctly purchasing these types of medicine for themselves or others and compliance with instructions when using OTC drugs. Attitudes and opinions about confidence and concordance and awareness of the importance of reading instructions were influenced by the literature concerned with the safety of OTC medicines in regard to adverse events

occurring in the use of OTC medicine and the subsequent measures to limit these (Prescott et al 2009, Wazaify et al 2005, Hawton et al 2001, NHS Choices 2013) The next phase of attitudinal questioning asked about availability of OTC drugs, respondent beliefs in these drugs in terms of addiction, strength of the OTC medicine and safety. Whilst providing insight into the opinions of and attitudes towards OTC medicine in terms of beliefs and values, these questions also examined the consumers knowledge about OTC medicine, specifically in regard to reactions with other medicines, strength of OTC medicine, safety and addiction. These questions were asked in response to similar questioning in studies in the literature review which found evidence of addiction and the health consumers knowledge of addiction to OTC medicine (Wazaify et al 2005,Wazaify et al 2006, Hughes et al 1999, Ball & Wilde 1989, Paxton &Chappy1996) to determine opinions held by the respondents in this study. The final part of the OTC medicine section of the questionnaire invited the respondent to relay an experience of using OTC medicine. Using CIT, questions 20 and 21, the respondent was asked to recall a positive and a negative experience and to detail what happened and what they may do differently if in that situation again. The objective of this was to establish factors, using a qualitative method, that the respondent considered to be responsible for a successful or unsuccessful episode of self-care using OTC medicine. Potentially, using this method of questioning, further insight into the attitudes and opinions of the healthcare consumer can be gained. The question is open and retrospective in design initially, asking the respondent about a self-care episode they can recall. It is a multi-step question that asks about the incident in stages from the initiation to the outcome. The respondent then is asked if they would do anything differently in future if they faced the same or similar situation. Asking this can be useful to promote understanding of consumer decision making and problem solving methods.

The second part of the questionnaire deals with sources of healthcare information. The format closely follows that of the first section OTC medicine and consists of closed questions, multiple choice questions, attitudinal scales and CIT questioning methods. Questions 22 – 28 ask about the main sources of health information, use of the internet when searching for health information, subjects that are searched for example diagnosis, symptoms, types of medicines, sites searched, what makes a good health website and requests for health advice or giving advice via the internet. Question 22 asks about the main source of health information to assess the provision and access of health information and to determine which sources are preferred by the respondent. Question 23 asks if the internet has been used to search for health information in the last year, again determining preference for health information sources and consumer access and to establish consumer health seeking patterns. The next question (Q24) continues this line of enquiry, asking what

type of health information has been searched for online, to provide more detailed insight into the consumer health information seeking patterns. Question 25 also seeks to provide more insight into health information seeking patterns and preferred (online) information sources by questioning what types of health sites are being utilised. Question 26 seeks the opinion of the respondent, asking what they think determines a good health website. The final two questions in this section (Q27 and,Q28) ask if the respondent has ever posted a request or responded to a request for health advice on the internet, respectively. Again this may identify patterns of consumer health information seeking and preferred information sources and it could provide insight on consumer interactions online.

In questions 29 – 36 the respondent was asked to what level they agreed or disagreed with a statement about health information searching and online purchasing. This section inquired about online search habits, the level of trust in the information, purchasing of medicines, site credentials and any preference for information gained in person from a health professional. Question 29 tested the attitude and beliefs of respondents to the levels of confidence they felt that the information received online was correct. Question 30 investigated the use of the same websites. Both questions were included to establish consumer health information seeking patterns. Questions 31 and 32 tested consumer attitude and values towards the purchasing of OTC medicine online and buying this type of medicine when it is not available OTC in England. Question 33 examined the influence that online information has on the consumer's decision making when purchasing OTC medicines. Question 34 seeks the respondent's attitude to health information online and the information gained from a health professional with the objective to detect preferred health information sources and establish information seeking patterns. Attitudes towards online security were investigated in questions 35 and 36, asking about checking a site's privacy d policy and checking a site's credentials. The results from these two questions may be comparable with findings from Sillence et al (2007) whose research addressed consumer opinion and attitudes towards trust markers, confidentiality and privacy online.

The CIT questions (Q37 and Q38) asked the respondent to remember an instance when they were successful and unsuccessful when gaining health information. The questioning format was the same as the previous CIT questions asking about a previous self-care episode using OTC medicine, that is retrospective, experience based and anecdotal with the opportunity to discuss what would be done differently the next time.

The final area of inquiry was respondent demographics, questions 39 – 46. Respondents were asked about their age, gender, religion and ethnic group. They were also asked about working hours, household income, education and the main language spoken. These

personal factual questions as Bryman (2012) categorises them have been included to provide an insight into the demographics of the survey respondents, such as the number of male or female respondents or the main age group which describes the sample surveyed.

3.5.3 Sampling

The Online Survey

The survey was posted online in March 2012 using the Bristol Online Survey template (an online tool designed to construct surveys that provides a user friendly interface for potential respondents). A target quota of 300 respondents was set for the entire number of completed surveys. This target number was chosen to ensure that the data could be analysed statistically. There was also mindfulness of the time needed to collect and analyse data as the survey was large and would be analysed using quantitative and qualitative methods. A sampling frame of perceived suitable websites was collected, targeting general lifestyle, general health and social networking sites. The link to the survey was then posted on these sites:

- Mumsnet
- Woman and Home
- Bella
- Mens Health
- Patient.co.uk (via Twitter)
- Bounty
- Twitter
- Facebook

These sites listed above were selected as they all have forums that promote communication between users and they allow surveys to be uploaded. Uploading a survey to this type of site allows many users to view the post and decide if they want to participate. These sites constitute social media and social networking, especially Twitter and Facebook, which are dedicated social networking sites. There is also potential on Twitter and Facebook for a user to share the post with other users, therefore maximising the visibility of the survey. The use of social media sites for hosting the survey reflects the social networking stage (Spink 2010) of information seeking behaviour .The link took the respondent to the survey where a cover letter provided more details about the survey. The survey remained available online until

June 2012. Initial response was slow, but a total of 50 surveys were responded to via the internet.

3.5.4 The Paper Based Survey

3.5.5 Location

Due to the initial low response from the online survey, a paper based survey was also implemented in March 2012. Manchester was chosen as the geographical location for the survey as it is one of England's major metropolitan centres, with a large population and boasts a high number of leisure complexes, an environment identified to draw respondents from in this study, Manchester is located in the north west of England within the Greater Manchester region. The population of Greater Manchester was approximately 2,611,000 in 2010 (MEN 2012) and covers an area of approximately 493 square miles (Wikipedia 2011). Because of the expanse of the area the decision was taken to draw participants from a radius of approximately five miles from Manchester city centre. The areas within this radius included Manchester, Salford and Trafford, three main boroughs of Greater Manchester that are within the five mile radius and have a high population density. These areas consisted of urban inner city areas and suburbs with varied socioeconomics, demographics and amenities.

3.5.6 Environment

As the survey included a qualitative CIT element it was recognised this may be more time consuming to complete than a purely quantitative survey, an environment was sought where potential respondents could be numerous and had the time to commit to answering the survey. Population centres of local authorities run leisure centres and collectables/vintage markets provided the framework from where to draw participants as they both attract people from many sectors of society. Supermarkets are often environments used to source potential respondents, but it was decided that leisure centres and informal markets were more suitable due to a number of reasons:

- The length of the survey. The survey was in-depth and depending on how much information a respondent was willing to offer it could take a considerable amount of time to complete, a seated area would be beneficial. This was also true of the collectables markets.

- Many leisure centres offer cafe facilities as do collectable/vintage markets to provide a seated area. Often the pool area in leisure centres offer a seated balcony area or other provision is made. Supermarkets also often have cafe facilities, which may be franchises', this adds another dimension to gaining permission to research in that environment. The franchise element also may affect the target customers, for example a McDonalds located in a supermarket (Asda Hulme) would potentially attract children from the local senior schools, who are not the target group for this research due to their age.
- The markets also have potential respondents who are stall holders as well as people browsing. The environment is more relaxed than at a general grocery market.
- Swimming lessons – individuals who take children for swimming lessons know they are going to be in that environment for a specific amount of time, so potentially will be more willing to complete a survey. The swimming lessons last approximately 30 minutes, then, a new group of potential respondents present themselves to observe the next lessons.
- There are an abundance of express type supermarkets in and around Manchester. These are much smaller than a normal supermarket, offering less space for respondents to complete the surveys. Not all of the areas included in the sample, eg Broughton, have a full sized supermarket, residents have to travel out of the area to neighbouring Prestwich, which is not in the boroughs included in the research framework. Bias could be introduced as it is not a representation of the population of an area in the research framework.

3.6 Framework

A list was established of leisure centres and collectable/vintage markets in an approximate 5 mile radius of Manchester city centre. A total of 22 leisure centres were identified and 2 collectors/vintage markets. East Manchester was poorly represented as there was a distinct paucity of suitable locations within the five mile radius. Therefore no data could be collected from east Manchester areas that were located in the five mile radius, under-representing that specific population.

3.6.1 Pilot Study for the Paper Based Survey

The paper based survey was piloted at Trafford Sports Barn. This is small sports facility that holds exercise classes and provides facilities for team sports both indoors and out, there is a limited communal/reception area. A very low response (n=2) was received at the venue, perhaps because of the small range of facilities and lack of communal space. The decision was then taken to devise a framework related to a set of criteria for potential environmental inclusion. The users of the centre left the premises as soon as the class ended, as there were no facilities to encourage them to stay, for example a cafe. It was identified that venues were needed where respondents could be present but not necessarily participating in an activity, such as using spectator balconies at leisure centre swimming facilities. Larger leisure centres with more facilities could also potentially attract and have the capacity for a larger number of individuals to visit.

3.6.2 Inclusion criteria framework

The facilities for each of the identified leisure centres were examined and only those with a pool and/or cafe were to be included as potential locations for the study. The lack of communal space/facilities did not encourage individuals to stay longer than necessary at the leisure centre as seen at Trafford Sports Barn. Swimming pools were included as part of the necessary criteria as they often have busy viewing balconies, leisure centre cafes encourage people to stay within the centre for longer periods of time. Each of the leisure centres that fell within the stated geographical boundaries ability to meet the necessary criteria is illustrated in the table below.

Table 1   Leisure Centre Inclusion Criteria

Leisure Centre	Cafe Facility	Pool Facility	None
Abraham Moss		X	
Arcadia			X
Ardwick			X
Belle Vue			X
Broadway		X	
Broughton		X	
Clarendon		X	
Chorlton		X	
George H Carnall	X		
Levenshulme		X	
Manchester Aquatics	X	X	
Miles Platting		X	
Moss Side		X	
North City		X	
Ordsall			X
Sale		X	
Sport City			X
Stretford	X	X	
Ten Acres			X
Withington		X	

Of the 21 leisure centres within the approximate 5 mile radius of Manchester 14 remained eligible for potential inclusion within the study. Manchester Aquatics and Stretford Leisure Centre were the only two centres to wholly fulfil the inclusion criteria.

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3.7 Data Collection

Leisure centres and the markets were contacted by initially by phone to gain permission to survey at the location. Permission was granted in total at 6 leisure centres and one market. The locations were:

Figure 10 Map of areas surveyed

(Adapted from gmtu.gov.uk area map).

1. Abraham Moss Leisure Centre

2. Altrincham Collectables Market

3. Chorlton leisure Centre

4. Fit City Broughton

5. Levenshulme Leisure Centre

6. Moss Side Leisure Centre

7. Stretford Leisure Centre

Once permission was gained a time and day was arranged along with any conditions that the management insisted on. The leisure centre was then surveyed to identify the busiest areas, usually the cafe and pool balcony. All respondents in these areas were then asked if they wished to participate in the survey.

The participants were given a copy of the survey with a covering letter which provided an explanation of what the survey entailed including respondent confidentiality The participants were then asked to hand back the survey when it was completed. The survey took place from March 2012 to June 2012. A total of 274 paper based surveys were returned. The total number of responses from the online (n=50) and paper based survey was 324.   A breakdown of responses for each centre is:

- Abraham Moss leisure Centre (n=59)
- Altrincham Collectables market (n=31)
- Chorlton Leisure Centre (n=17)
- Fit City Broughton (n=27)
- Levenshulme Leisure Centre (n=42)
- Moss Side leisure Centre (n=10)
- Stretford Leisure Centre (n=88)

3.7.1 Practical Research Issues

Whilst undertaking the research various difficulties occurred, the main problems involved time and communication. Once the population centre had been identified using the framework for inclusion criteria, contact had to be initiated to gain permission to survey at the centre. This took the form of a phone call and a request to speak to the duty manager. Reception staff often acted as 'gatekeepers' to accessing management and many centres were called more than once in a bid to speak to a manager. If three attempts to contact management had failed, the centre was no longer contacted. Generally it was better to contact a centre in the evening as receptionists and management were not as busy.

When contact with the management was established gaining permission to survey was generally successful. On the occasions gaining this permission was not successful it was mainly due to the management being unsure of how to proceed with the request as it was not frequently asked to survey at a leisure centre. At this point the manager would decline the request or contact their line manager. The leisure centre duty managers seemed to employ their own criteria for allowing research to be undertaken within the building, in some cases an email had to be sent to the manager detailing what was said in the phone call and the terms and conditions set out by the duty manager had to be adhered to. Terms and conditions usually included staying in communal areas including pool areas and sometimes wearing I.D provided by the centre.

At first an unexpected issue at some locations was on arriving at the centre and the staff had not been informed. This highlighted a communication issue between duty managers and between the duty manager and reception staff. This occurred after phone conversations and emails had been sent detailing the times and dates with the centre.

The process of gaining permission to research in a location was time consuming as there was often a period of waiting after making initial contact with the management. This was usually due to waiting for calls/emails to be returned or following up communication. Time was also an issue when surveying at the centres. A much better survey response was gained when the centre was at its busiest, generally during swimming lessons which were held at approximately the same time in each location. Therefore only one centre could be targeted at the peak time on any day. A total of twelve centres were contacted – ten leisure centres and two markets. Permission was granted to survey in seven locations, listed above. Of the five locations where it was not possible to survey this was due to two locations not returning phone calls/correspondence and three that denied permission.

3.7.2 Survey limitations

The main limitation in the survey was the use of non-probabilistic sampling methods – a convenience sample, so the findings may not be representative of the population as a whole. A possible bias result from drawing a survey sample from leisure centres as people who frequent these may be more health conscious than the general population, although some people may go to leisure centres to take children to swimming lessons and not use the facilities themselves. Using a sample drawn from an online population can also be a potential bias, when asking questions about internet use, as it is possible the internet based group spend more time online than the other groups. Results were compared from each group (Leisure centres, markets, online), and results did differ, this can be tested using the appropriate statistical tests. Examples of this comparison are:

Table 2 Question 3 Used OTC medicines in the last year?

Environment	Yes	No
Market	97%	3%
Online	86%	14%
Leisure Centre	90%	10%

Table 3 Question 27.Posted a request for health information on the internet?

Environment	Yes	No
Market	3%	97%
Online	18%	82%
Leisure Centre	6%	94%

3.7.3 Ethical Considerations

The Loughborough University ethical guidelines checklist was followed; a full submission was not required as potential participants in the target group for selection were not deemed vulnerable in terms of age or health status and could give informed consent to participate in the study. Age constraints specified by Loughborough University are children under the age of 18, as they are deemed a vulnerable group, no one from this group was knowingly recruited, for the purpose of this study, or from any other group that may be termed as being vulnerable in the ethical guidelines checklist. No identifying information was collected and data was treated as confidential for the online and paper based survey.

4 Data Analysis

4.1 Quantitative Data Analysis

Questions numbers 1 – 19, 22-36 and 39-46 from the survey were analysed using quantitative methods, questions 20, 21, 37 and 38 were analysed using qualitative methods. Statistical analysis was used on the quantitative data. Two kinds of statistical procedures were required – descriptive statistics and nonparametric statistics.

Descriptive statistics were used for summarising the numerical data. Percentages were used to describe categories and to show the number of respondents per question. The non parametric chi- square statistical test was used as an inferential test. Fishers exact statistical test was employed when it was not appropriate to use the chi-square test.

Due to the amount of data generated by the survey; and the length of the survey the Statistical Package for the Social Sciences (SPSS) was used to manage and analyse data. SPSS was used to manage and code the data before statistical processing.

4.2 Qualitative Analysis CIT

4.2.1 CIT Analysis

The written responses to the self reported, retrospective experiences CIT questions were coded numerically, the questionnaire did not ask for names or addresses which could potentially provide identification of the participants. The CIT responses were transcribed into a Microsoft Word document, copying the responses verbatim, including grammar and punctuation mistakes, as well as spelling and use of capitals and/or emoticons as this lessened the potential introduction of bias and also allowed a true account of the responses to the questionnaire, without the loss of written nuances.

4.2.2 Coding

The qualitative analysis of the CIT questionnaire was coded thematically, initially by hand and then by using Atlas Ti a software package designed to perform qualitative analysis of textual data. Atlas Ti was used to provide a receptacle for the qualitative data so it may be methodically organised and documented and provide a structured route to linking abstract ideas to specific areas of text (Miller 2000). Each of the four questions was analysed individually, analysis concluding when the data saturation point was reached in each separate question - the emerging concepts had been fully explored and no new insights being generated (Bryman 2012).

The textual data was analysed using open coding. The raw data was examined for similarities and differences, allowing for the emergence of themes, rather than using already defined themes and potentially fitting the data to these pre defined categories. Both methods are acceptable in qualitative data analysis and within the CIT methodology, Shapira – Lishchinsky (2010), Zaidman-Zait (2007). Shapira – Lishchinsky (2010) describes the former method of data analysis as based on Grounded theory as there is an emphasis of the emergence of ideas and themes from raw data which offer insight, enhances understanding and provides a meaning guide to action (Taylor & Bogdan, 1998, Strauss & Corbin 1998). The open coding stage was used to define broad preliminary categories with similarities in themes (Shapira – Lishchinsky 2010).

An inductive approach was used at the coding stage, the theory being generated from the research, essentially the theory is the outcome of the research (Bryman 2012) . In this study these were factors reported by respondents that influenced a successful or unsuccessful episode in OTC treatment and information seeking. The emphasis was on identifying

emergent themes using an inductive approach, but an iterative strategy was also utilised so the data collection and analysis proceeded in tandem, repeatedly referring back to each other, until the data saturation point was reached.

The next stage of data analysis was defining subcategories within the categories defined at the previous open coding stage. Shapira-Lishchinsky (2010) describes this as being the axial coding stage, where connections are made between the themes and subthemes, the coding occurs around the ''axis'' of a category giving the main theme greater explanatory power through the subtheme, for instance answering questions about a phenomenon such as when, how or why.

4.2.3 Inclusion Criteria

Criteria for including reported experiences followed Flanagan's (1954) definition that the incident must comprise an actual and detailed behaviour and be judged critical by the participant and that the behaviour must be relevant to the general aim of the activity, which was the use of OTC medicines and seeking health related information. Zaidman-Zait (2007) expands upon Flanagan's (1954) need to observe only manifest behaviours that accomplish specific aims by including not only external behaviours (actions) but also internal processes that include cognitive and emotional states. This study incorporated both aspects in the analysis process as whilst there is a degree of action when dealing with health issues there is also a wide potential for internal processes which may be cognitive or emotional which can impact on decision making for the participant.

The questioning strategy was structured asking about the circumstances leading to an event, the response to the event, the outcome or result and what would be done differently. Respondents did not always communicate their experience back in such a structured manner, the sequence of events could vary and some information could be missing, for example what would be done differently. These written responses were still included in the analysis if they were deemed critical by the respondent, the actual recollection of the incident provides the criteria for being deemed critical, the response was relevant, for example reporting OTC medicines not experiences just with prescription drugs and detailed, the CIT questions needed a level of detail to fulfil the criteria, one word responses did not fulfil this.

4.2.4 Exclusion Criteria

Responses that were excluded did not meet the criteria detailed above. These included one word answers such as 'paracetamol' which did not give any insight into the critical incident or any meaning. Responses that did not pertain to the questions were also excluded as were those that did not demonstrate an experience or opinion in line with the questions. Experiences that were negative for example 'do not use OTC medicine' or 'do not use the internet to search for information' were also excluded unless another method was cited giving rise to an experience and/or an opinion. Non respondents were excluded as were those who stated they have never had that experience or cannot recall an incident pertaining to the CIT question. Finally unintelligible answers were excluded on two counts, one due to not being able to decipher the writing, the second because the response did not make sense. A total of 63 returned surveys had the CIT part of the survey excluded.

5 Quantitative Results
5.1 OTC Medicine Questions

Q1 *How would you describe your general health?*
Table 4 General health

Area			General Health Status								
		Extremely Good	Very Good	Good	Average	Poor	Very Poor	Extremely Poor	Total	Missing Data
Altrincham	Count	4	9	9	7	1	0	1	31	0
	% within Area	12.9%	29.0%	29.0%	22.6%	3.2%	0.0%	3.2%		
Broughton	Count	6	7	7	4	2	0	1	27	0
	% within Area	22.2%	25.9%	25.9%	14.8%	7.4%	0.0%	3.7%		
Chorlton	Count	2	8	4	3	0	0	0	17	0
	% within Area	11.8%	47.1%	23.5%	17.6%	0.0%	0.0%	0.0%		
Crumpsall	Count	7	28	23	0	1	0	0	59	0
	% within Area	11.9%	47.5%	39.0%	0.0%	1.7%	0.0%	0.0%		
Levenshulme	Count	5	11	17	7	1	1	0	42	0
	% within Area	11.9%	26.2%	40.5%	16.7%	2.4%	2.4%	0.0%		
Moss Side	Count	2	4	4	0	0	0	0	10	0
	% within Area	20.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%		
Stretford	Count	17	35	25	8	3	0	0	88	0
	% within Area	19.3%	39.8%	28.4%	9.1%	3.4%	0.0%	0.0%		
Online	Count	5	18	17	7	3	0	0	50	0
	% within Area	10.0%	36.0%	34.0%	14.0%	6.0%	0.0%	0.0%		
Total	Count	48	120	106	36	11	1	2	324	0
	% of Total	14.8%	37.0%	32.7%	11.1%	3.4%	0.3%	0.6%		0.0%

Interestingly, in all areas the majority of respondents considered themselves to be of above average health, including 100% of those from Moss Side. This appears to indicate that the public, in general, does not know what an average state of health is.

Q2 *Do you have any ongoing health issues?*

Table 5 Ongoing Issues

Area		Yes	No	Total	Missing Data
Altrincham	Count	13	17	30	1
	% within Area	43.3%	56.7%		
Broughton	Count	5	21	26	1
	% within Area	19.2%	80.8%		
Chorlton	Count	8	9	17	0
	% within Area	47.1%	52.9%		
Crumpsall	Count	15	42	57	2
	% within Area	26.3%	73.7%		
Levenshulme	Count	18	24	42	0
	% within Area	42.9%	57.1%		
Moss Side	Count	4	6	10	0
	% within Area	40.0%	60.0%		
Stretford	Count	20	64	84	4
	% within Area	23.8%	76.2%		
Online	Count	18	31	50	0
	% within Area	36.0%	62.0%		
Total	Count	101	214	316	8
	% of Total	32.0%	67.7%		2.5%

All data groups reported having ongoing health issues. Participants were asked to provide information about their ongoing health problem if they wished. The range of ongoing health issues was wide and often included chronic illnesses covering many different aspects of health. Examples of this are: musculoskeletal, such as arthritis, gastrointestinal – IBS and diverticulitis, respiratory and autoimmune. Many of the conditions would need monitoring and controlling, these included hypertension, hyperlipodemia, diabetes and HIV.

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Table 6 Illness

Illness	Instances	Illness	Instances	Illness	Instances
Asthma	15	HIV	2	Disc vertebrae	1
Hypertension	8	Overweight/obese	2	Joint pain, non-specific	1
Migraine	5	Reflux Oesophagus	1	Osteopoenia	1
Anxiety	5	Diabetes type I	1	Fibromyalgia	1
Depression	5	Diabetes type II	1	Spondylosis spine	1
Thyroid	5	Bi-polar type II	1	Muscular back pain	1
IBS	5	Stress	1	Sciatica	1
Allergies	4	Cauda Equina	1	B11 Definciency	1
Hayfever	4	Hypotension	1	Iron Deficiency	1
Hyperlipidemia	4	Chron's Disease	1	Lactose Intolerance	1
Arthritis	4	Gall Stones	1	Contact Dermatitis	1
Back pain	3	Ulcerative Colitis	1	Rosacea	1
Psoriasis	3	Digestion	1	Lichen Schlerosus	1
Knee Pain	3	Stomach Ulcer	1	Sinus	1
Hiatus Hernia	2	Mental health issues	1	Symphysis Pubis Dysfunction	1
Fatigue	2	Multiple Sclerosis	1	Prolapse	1
Diverticulitis	2	Bursitis Trochanteric (hip)	1	Trigger Finger (stenosing tenosynovitis)	1
Hip Pain	2	Bursitis Olecranon (elbow)	1		

Q3 *Have you ever used any over the counter pain killers, cold/flu remedies, cough medicine or allergy medicine, including complementary/alternative medicine, in the last year?*

Table 7 OTC Use

Area		Yes	No	**Total**	Missing Data
Altrincham	Count	30	1	31	0
	% within Area	96.8%	3.2%		
Broughton	Count	24	3	27	0
	% within Area	88.9%	11.1%		
Chorlton	Count	16	1	17	0
	% within Area	94.1%	5.9%		
Crumpsall	Count	53	6	59	0
	% within Area	89.8%	10.2%		
Levenshulme	Count	41	1	42	0
	% within Area	97.6%	2.4%		
Moss Side	Count	8	2	10	0
	% within Area	80.0%	20.0%		
Stretford	Count	78	10	88	0
	% within Area	88.6%	11.4%		
Online	Count	43	7	50	0
	% within Area	86.0%	14.0%		
Total	Count	293	31	324	0
	% of Total	90.4%	9.6%		0.0%

The majority of respondents have used OTC pain killers, cold/flu remedies, cough medicine or allergy medicine, including complementary/alternative medicine in the last year.

Using Spearman's Rank correlation a significant correlation was found between the use of OTC medicines (pain killers, cold/flu remedies, cough medicine or allergy medicine, including complementary/alternative medicine) in the last year and the frequency these types of medicines were purchased (Q4) (r = .263, sig (2 tailed) .000, correlation significant at the 0.01 level). However, no significant correlation was found between the purchase of these types of OTC medicines and ongoing health issues (Q2) (r = -.057, sig (2 tailed) .313).

Q4 *How frequently do you buy over the counter painkillers, cold/flu remedies, cough medicine or allergy medicine?*

Table 8 Frequency of purchase

Area		Weekly	Monthly	Every 3 Months	Every 6 Months	Once a Year	Don't Know	Other	**Total**	Missing Data
Altrincham	Count	2	8	11	5	2	1	2	31	0
	% within Area	6.5%	25.8%	35.5%	16.1%	6.5%	3.2%	6.5%		
Broughton	Count	0	8	7	4	3	3	2	27	0
	% within Area	0.0%	29.6%	25.9%	14.8%	11.1%	11.1%	7.4%		
Chorlton	Count	0	9	1	3	1	1	1	16	1
	% within Area	0.0%	56.2%	6.2%	18.8%	6.2%	6.2%	6.2%		
Crumpsall	Count	1	11	14	10	9	8	6	59	0
	% within Area	1.7%	18.6%	23.7%	16.9%	15.3%	13.6%	10.2%		
Levenshulme	Count	0	12	18	6	3	1	2	42	0
	% within Area	0.0%	28.6%	42.9%	14.3%	7.1%	2.4%	4.8%		
Moss Side	Count	0	2	0	2	2	2	2	10	0
	% within Area	0.0%	20.0%	0.0%	20.0%	20.0%	20.0%	20.0%		
Stretford	Count	4	15	28	19	10	4	8	88	0
	% within Area	4.5%	17.0%	31.8%	21.6%	11.4%	4.5%	9.1%		
Online	Count	1	9	16	15	5	2	2	50	0
	% within Area	2.0%	18.0%	32.0%	30.0%	10.0%	4.0%	4.0%		
Total	Count	8	74	95	64	35	22	25	323	1
	% of Total	2.5%	22.9%	29.4%	19.8%	10.8%	6.8%	7.7%		0.3%

Table 8 shows that OTC medicines were mainly purchased on a three month basis. A Chi-square test was used to determine if any statistical significance existed between the frequency of purchasing OTC medicines and the main point of purchase (Q6), but the results were not used as too many cells (over 20%) had an expected value of less than 5.

Q5 *Is buying a drug brand name of medicine important to you?*

Table 9 Brand

Area		Yes	No	Don't know	**Total**	Missing Data
Altrincham	Count	4	26	1	31	0
	% within Area	12.9%	83.9%	3.2%		
Broughton	Count	6	17	4	27	0
	% within Area	22.2%	63.0%	14.8%		
Chorlton	Count	5	12	0	17	0
	% within Area	29.4%	70.6%	0.0%		
Crumpsall	Count	16	36	4	56	3
	% within Area	28.6%	64.3%	7.1%		
Levenshulme	Count	4	30	6	40	2
	% within Area	10.0%	75.0%	15.0%		
Moss Side	Count	4	6	0	10	0
	% within Area	40.0%	60.0%	0.0%		
Stretford	Count	21	62	5	88	0
	% within Area	23.9%	70.5%	5.7%		
Online	Count	11	37	1	50	0
	% within Area	22.0%	74.0%	2.0%		
Total	Count	71	226	21	319	5
	% of Total	22.3%	70.8%	6.6%		1.5%

Spearman's Rank correlation test was used to identify relationships that might exist between the importance of buying a drug from a brand name and ongoing health issues (Q2) as well as the point of purchase for the medicines (Q6). No significant correlations were found. (r = .011, sig (2 tailed) .847) and (r = .113, sig (2 – tailed) .053) respectively.

Q6 *Where do you mainly buy over the counter medicine from?*

Table10 Purchase environment

Area		Location					**Total**	Missing Data
		Pharmacy	Supermarket	Local Shop/petrol station	Internet Site	Other		
Altrincham	Count	10	15	2	0	0	27	4
	% within Area	37.0%	55.6%	7.4%	0.0%	0.0%		
Broughton	Count	6	15	3	0	2	26	1
	% within Area	23.1%	57.7%	11.5%	0.0%	7.7%		
Chorlton	Count	8	7	0	0	1	16	1
	% within Area	50.0%	43.8%	0.0%	0.0%	6.2%		
Crumpsall	Count	22	31	2	0	0	55	4
	% within Area	40.0%	56.4%	3.6%	0.0%	0.0%		
Levenshulme	Count	10	24	2	0	0	36	6
	% within Area	27.8%	66.7%	5.6%	0.0%	0.0%		
Moss Side	Count	4	6	0	0	0	10	0
	% within Area	40.0%	60.0%	0.0%	0.0%	0.0%		
Stretford	Count	37	34	6	1	2	80	8
	% within Area	46.2%	42.5%	7.5%	1.2%	2.5%		
Online	Count	14	31	2	0	3	50	0
	% within Area	28.0%	62.0%	4.0%	0.0%	6.0%		
Total	Count	111	163	17	1	8	300	24
	% of Total	37.0%	54.3%	5.7%	0.3%	2.7%		7.4%

Unsurprisingly, the supermarket and pharmacy were the main places that OTC medicines were purchased from.

Spearman's Rho was used to investigate the existence of any relationship between the data from Q6, where the OTC medicine is mainly purchased and Q23, the use of the internet in the last year to search for health related information. The correlation was not significant (r = -.041, sig (2 – tailed) .053). A Chi-square test was performed to determine if any statistical significance was evident between the main point of purchase, internet use (Q23), brand name of drug (Q5) and influences on purchase (Q7), but in each case too many, over 20% had an expected count of less than 5.

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Q7 *What influences your over the counter medicine purchases?*

Table 11 Influences

Area		Price	Special Offer	Advert	Recommendation	Prior Use	Brand	Store Brand	Other	**Total**	Missing Data
Altrincham	Count	23	7	1	12	13	4	0	0	31	0
	% within Area	74.2%	22.6%	3.2%	38.7%	41.9%	12.9%	0.0%	0.0%		
Broughton	Count	19	1	1	7	7	4	0	2	27	0
	% within Area	70.4%	3.7%	3.7%	25.9%	25.9%	14.8%	0.0%	7.4%		
Chorlton	Count	10	3	0	5	13	3	2	3	17	0
	% within Area	58.8%	17.6%	0.0%	29.4%	76.5%	17.6%	11.8%	17.6%		
Crumpsall	Count	21	11	1	25	25	14	1	3	59	0
	% within Area	35.6%	18.6%	1.7%	42.4%	42.4%	23.7%	1.7%	5.1%		
Levenshulme	Count	22	6	4	10	19	4	0	4	42	0
	% within Area	52.4%	14.3%	9.5%	23.8%	45.2%	9.5%	0.0%	9.5%		
Moss Side	Count	6	0	0	2	0	2	2	2	10	0
	% within Area	60.0%	0.0%	0.0%	20.0%	0.0%	20.0%	20.0%	20.0%		
Stretford	Count	49	10	1	31	45	14	2	4	88	0
	% within Area	55.7%	11.4%	1.1%	35.2%	51.1%	15.9%	2.3%	4.5%		
Online	Count	32	5	4	16	29	7	2	5	50	0
	% within Area	64.0%	10.0%	8.0%	32.0%	58.0%	14.0%	4.0%	10.0%		
Total	Count	182	43	12	108	151	52	9	23	324	0
	% of Total	56.2%	13.3%	3.7%	33.3%	46.6%	16.0%	2.8%	7.1%		0.0%

Price, recommendation and prior use were the main influences on buying OTC medicine. The Chi-square test was used to determine if any statistical significance was present between influences on OTC purchases and the importance of buying a brand name medicine (Q5), this was not usable as too many cells, 20% plus had an expected count of less than 5.

Q8 *Have you ever had any side effects that you think were caused by over the counter medicine?*

Total 12 Side effects

Area		Yes	No	Don't know	**Total**	Missing Data
Altrincham	Count	1	24	6	31	0
	% within Area	3.2%	77.4%	19.4%		
Broughton	Count	1	23	3	27	0
	% within Area	3.7%	85.2%	11.1%		
Chorlton	Count	4	12	1	17	0
	% within Area	23.5%	70.6%	5.9%		
Crumpsall	Count	2	55	2	59	0
	% within Area	3.4%	93.2%	3.4%		
Levenshulme	Count	4	33	3	40	2
	% within Area	10.0%	82.5%	7.5%		
Moss Side	Count	0	10	0	10	0
	% within Area	0.0%	100.0%	0.0%		
Stretford	Count	2	76	7	86	2
	% within Area	2.3%	88.4%	8.1%		
Online	Count	3	45	2	50	0
	% within Area	6.0%	90.0%	4.0%		
Total	Count	17	278	24	320	4
	% of Total	5.3%	86.9%	7.5%		1.2%

Reassuringly, only 5% of respondents thought they had had any side effects from OTC medicine. Where stated, side effects included drowsiness, vomiting, heartburn and skin blistering/hives.

Q9 *Over the counter medicines are effective?*

Table 13 Effective

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	5	20	3	3	0	0	0	31	0
	% within Area	16.1%	64.5%	9.7%	9.7%	0.0%	0.0%	0.0%		
Broughton	Count	4	20	0	1	0	0	1	26	1
	% within Area	15.4%	76.9%	0.0%	3.8%	0.0%	0.0%	3.8%		
Chorlton	Count	2	10	5	0	0	0	0	17	0
	% within Area	11.8%	58.8%	29.4%	0.0%	0.0%	0.0%	0.0%		
Crumpsall	Count	9	40	6	3	0	1	0	59	0
	% within Area	15.3%	67.8%	10.2%	5.1%	0.0%	1.7%	0.0%		
Levenshulme	Count	7	26	5	4	0	0	0	42	0
	% within Area	16.7%	61.9%	11.9%	9.5%	0.0%	0.0%	0.0%		
Moss Side	Count	2	4	2	2	0	0	0	10	0
	% within Area	20.0%	40.0%	20.0%	20.0%	0.0%	0.0%	0.0%		
Stretford	Count	17	53	12	3	1	0	0	86	2
	% within Area	19.8%	61.6%	14.0%	3.5%	1.2%	0.0%	0.0%		
Online	Count	7	30	7	6	0	0	0	50	0
	% within Area	14.0%	60.0%	14.0%	12.0%	0.0%	0.0%	0.0%		
Total	Count	53	203	40	22	1	1	1	321	3
	% of Total	16.5%	63.2%	12.5%	6.9%	0.3%	0.3%	0.3%		0.9%

It is again reassuring that, from their experiences, most respondents agreed that OTC medicines are effective.

Q10 *Over the counter medicines are reasonably priced?*

Table 14 Reasonably priced

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	1	15	4	2	5	3	0	30	1
	% within Area	3.3%	50.0%	13.3%	6.7%	16.7%	10.0%	0.0%		
Broughton	Count	3	10	5	5	2	1	0	26	1
	% within Area	11.5%	38.5%	19.2%	19.2%	7.7%	3.8%	0.0%		
Chorlton	Count	3	4	7	2	1	0	0	17	0
	% within Area	17.6%	23.5%	41.2%	11.8%	5.9%	0.0%	0.0%		
Crumpsall	Count	4	25	13	7	3	4	2	58	1
	% within Area	6.9%	43.1%	22.4%	12.1%	5.2%	6.9%	3.4%		
Levenshulme	Count	4	20	7	7	1	3	0	42	0
	% within Area	9.5%	47.6%	16.7%	16.7%	2.4%	7.1%	0.0%		
Moss Side	Count	0	4	2	0	0	0	2	8	2
	% within Area	0.0%	50.0%	25.0%	0.0%	0.0%	0.0%	25.0%		
Stretford	Count	5	40	20	11	4	4	2	86	2
	% within Area	5.8%	46.5%	23.3%	12.8%	4.7%	4.7%	2.3%		
Online	Count	3	21	8	10	8	0	0	50	0
	% within Area	6.0%	42.0%	16.0%	20.0%	16.0%	0.0%	0.0%		
Total	Count	23	139	66	44	24	15	6	317	7
	% of Total	7.3%	43.8%	20.8%	13.9%	7.6%	4.7%	1.9%		2.2%

Table 14 shows the majority of respondents thought OTC medicines were reasonably priced.

Q11 *I am confident that I can purchase suitable over the counter medicines for myself.*

Table 15 Confident

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	8	19	3	1	0	0	0	31	0
	% within Area	25.8%	61.3%	9.7%	3.2%	0.0%	0.0%	0.0%		
Broughton	Count	7	12	3	3	0	1	0	26	1
	% within Area	26.9%	46.2%	11.5%	11.5%	0.0%	3.8%	0.0%		
Chorlton	Count	7	8	2	0	0	0	0	17	0
	% within Area	41.2%	47.1%	11.8%	0.0%	0.0%	0.0%	0.0%		
Crumpsall	Count	17	32	6	2	0	0	0	57	2
	% within Area	29.8%	56.1%	10.5%	3.5%	0.0%	0.0%	0.0%		
Levenshulme	Count	13	23	4	2	0	0	0	42	0
	% within Area	31.0%	54.8%	9.5%	4.8%	0.0%	0.0%	0.0%		
Moss Side	Count	4	4	0	2	0	0	0	10	0
	% within Area	40.0%	40.0%	0.0%	20.0%	0.0%	0.0%	0.0%		
Stretford	Count	24	48	6	3	1	0	0	82	6
	% within Area	29.3%	58.5%	7.3%	3.7%	1.2%	0.0%	0.0%		
Online	Count	14	27	2	6	0	0	0	49	1
	% within Area	28.6%	55.1%	4.1%	12.2%	0.0%	0.0%	0.0%		
Total	Count	94	173	26	19	1	1	0	314	10
	% of Total	29.9%	55.1%	8.3%	6.1%	0.3%	0.3%	0.0%		3.1%

Respondents were confident when purchasing suitable OTC medicines but there was no significant correlation with the opinion that OTC medicines were not always safe to use (r = .111, sig (2 – tailed) .064).

Q12 *I am confident that I can purchase suitable over the counter medicines for others.*

Table 16 Confident buying for others

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	5	17	4	2	1	2	0	31	0
	% within Area	16.1%	54.8%	12.9%	6.5%	3.2%	6.5%	0.0%		
Broughton	Count	5	11	4	4	1	1	0	26	1
	% within Area	19.2%	42.3%	15.4%	15.4%	3.8%	3.8%	0.0%		
Chorlton	Count	4	11	2	0	0	0	0	17	0
	% within Area	23.5%	64.7%	11.8%	0.0%	0.0%	0.0%	0.0%		
Crumpsall	Count	10	34	7	3	2	2	0	58	1
	% within Area	17.2%	58.6%	12.1%	5.2%	3.4%	3.4%	0.0%		
Levenshulme	Count	7	24	4	4	1	0	1	41	1
	% within Area	17.1%	58.5%	9.8%	9.8%	2.4%	0.0%	2.4%		
Moss Side	Count	2	2	0	2	2	2	0	10	0
	% within Area	20.0%	20.0%	0.0%	20.0%	20.0%	20.0%	0.0%		
Stretford	Count	14	45	12	7	1	2	1	82	6
	% within Area	17.1%	54.9%	14.6%	8.5%	1.2%	2.4%	1.2%		
Online	Count	7	27	5	6	2	1	0	48	2
	% within Area	14.6%	56.2%	10.4%	12.5%	4.2%	2.1%	0.0%		
Total	Count	54	171	38	28	10	10	2	313	11
	% of Total	17.3%	54.6%	12.1%	8.9%	3.2%	3.2%	0.6%		3.4%

Levels of confidence were high when purchasing OTC medicines for their self and others, with a significant correlation found between confidence when purchasing suitable OTC medicine for own use or for others to use (r = .685, sig (2 – tailed) .000, significant at the 0.01 level).

Spearman's Rank correlation was also used to assess if there was a relationship with age and confidence when purchasing for others, the result was not significant (r = .035, sig (2 – tailed) .545).

Q13 *I always read the instructions when using over the counter medicine.*

Table 17   Read Instructions

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	10	8	5	3	3	2	0	31	0
	% within Area	32.3%	25.8%	16.1%	9.7%	9.7%	6.5%	0.0%		
Broughton	Count	7	10	2	5	1	1	0	26	1
	% within Area	26.9%	38.5%	7.7%	19.2%	3.8%	3.8%	0.0%		
Chorlton	Count	7	6	2	1	0	0	1	17	0
	% within Area	41.2%	35.3%	11.8%	5.9%	0.0%	0.0%	5.9%		
Crumpsall	Count	27	18	6	3	3	0	1	58	1
	% within Area	46.6%	31.0%	10.3%	5.2%	5.2%	0.0%	1.7%		
Levenshulme	Count	13	18	5	0	5	0	1	42	0
	% within Area	31.0%	42.9%	11.9%	0.0%	11.9%	0.0%	2.4%		
Moss Side	Count	6	0	4	0	0	0	0	10	0
	% within Area	60.0%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%		
Stretford	Count	23	38	12	0	2	6	0	81	7
	% within Area	28.4%	46.9%	14.8%	0.0%	2.5%	7.4%	0.0%		
Online	Count	14	17	6	5	3	2	1	48	2
	% within Area	29.2%	35.4%	12.5%	10.4%	6.2%	4.2%	2.1%		
Total	Count	107	115	42	17	17	11	4	313	11
	% of Total	34.2%	36.7%	13.4%	5.4%	5.4%	3.5%	1.3%		3.4%

It is interesting that as many as one in ten respondents didn't read the instructions before taking over the counter medicine, but this could be due to the respondents already being familiar with the medicine from previous use.

Q14 *I always follow the instructions when taking over the counter medicine.*

Table 18 Follow instructions

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	12	10	3	3	1	2	0	31	0
	% within Area	38.7%	32.3%	9.7%	9.7%	3.2%	6.5%	0.0%		
Broughton	Count	6	13	2	3	0	1	0	25	2
	% within Area	24.0%	52.0%	8.0%	12.0%	0.0%	4.0%	0.0%		
Chorlton	Count	9	6	1	0	0	1	0	17	0
	% within Area	52.9%	35.3%	5.9%	0.0%	0.0%	5.9%	0.0%		
Crumpsall	Count	32	16	4	3	2	0	1	58	1
	% within Area	55.2%	27.6%	6.9%	5.2%	3.4%	0.0%	1.7%		
Levenshulme	Count	13	21	4	2	2	0	0	42	0
	% within Area	31.0%	50.0%	9.5%	4.8%	4.8%	0.0%	0.0%		
Moss Side	Count	6	4	0	0	0	0	0	10	0
	% within Area	60.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Stretford	Count	35	35	10	1	0	1	0	82	6
	% within Area	42.7%	42.7%	12.2%	1.2%	0.0%	1.2%	0.0%		
Online	Count	17	18	8	4	1	2	0	50	0
	% within Area	34.0%	36.0%	16.0%	8.0%	2.0%	4.0%	0.0%		
Total	Count	130	123	32	16	6	7	1	315	9
	% of Total	41.3%	39.0%	10.2%	5.1%	1.9%	2.2%	0.3%		2.8%

Spearman's Rank correlation was used to test for a correlation between always reading the instructions when using OTC medicine (Q13) and always following the instructions when using OTC medicines. The correlation was significant (r = .673, sig (2 – tailed) .000, correlation significant at the 0.001 level The majority of respondents strongly agreed or agreed with the statement that they always read the instructions when using OTC medicine and that they always followed instructions when taking this type of medicine. However, in

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certain areas, such as Altrincham, more respondents followed instructions than always read the instructions. The reason for this is not known but it is possible that the medicine is taken regularly and the instructions are followed from memory. This may be due to the age of the population in Altrincham (40% being aged 45 – 54) and ongoing health issues (43%).

Q15 *There are not enough over the counter medicines available.*

Table 19 Availability

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	1	5	4	8	5	3	1	27	4
	% within Area	3.7%	18.5%	14.8%	29.6%	18.5%	11.1%	3.7%		
Broughton	Count	3	6	2	8	1	1	0	21	6
	% within Area	14.3%	28.6%	9.5%	38.1%	4.8%	4.8%	0.0%		
Chorlton	Count	1	3	2	4	2	5	0	17	0
	% within Area	5.9%	17.6%	11.8%	23.5%	11.8%	29.4%	0.0%		
Crumpsall	Count	7	8	7	14	2	10	3	51	8
	% within Area	13.7%	15.7%	13.7%	27.5%	3.9%	19.6%	5.9%		
Levenshulme	Count	2	5	2	16	4	9	2	40	2
	% within Area	5.0%	12.5%	5.0%	40.0%	10.0%	22.5%	5.0%		
Moss Side	Count	2	0	4	2	0	0	0	8	2
	% within Area	25.0%	0.0%	50.0%	25.0%	0.0%	0.0%	0.0%		
Stretford	Count	2	7	9	31	9	15	4	77	11
	% within Area	2.6%	9.1%	11.7%	40.3%	11.7%	19.5%	5.2%		
Online	Count	4	4	3	17	3	18	1	50	0
	% within Area	8.0%	8.0%	6.0%	34.0%	6.0%	36.0%	2.0%		
Total	Count	22	38	33	100	26	61	11	291	33
	% of Total	7.6%	13.1%	11.3%	34.4%	8.9%	21.0%	3.8%		10.2%

Most respondents are ambivalent about the amount of OTC medicines available, choosing the neutral category to describe their opinion. The reason for this is not clear, but it is possible that the respondents have not considered this question prior to the survey or there may be a tendency to purchase the same brand products so they are not aware of the variety and number of OTC medicines available.

Q16 *Over the counter medicines are not as powerful as the same type of medicine available with a prescription.*

Table 20 How powerful are OTC medicines

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	1	10	8	4	1	3	2	29	2
	% within Area	3.4%	34.5%	27.6%	13.8%	3.4%	10.3%	6.9%		
Broughton	Count	2	8	1	9	1	1	0	22	5
	% within Area	9.1%	36.4%	4.5%	40.9%	4.5%	4.5%	0.0%		
Chorlton	Count	0	5	2	3	0	2	3	15	2
	% within Area	0.0%	33.3%	13.3%	20.0%	0.0%	13.3%	20.0%		
Crumpsall	Count	7	15	6	9	5	8	4	54	5
	% within Area	13.0%	27.8%	11.1%	16.7%	9.3%	14.8%	7.4%		
Levenshulme	Count	3	7	4	12	2	6	6	40	2
	% within Area	7.5%	17.5%	10.0%	30.0%	5.0%	15.0%	15.0%		
Moss Side	Count	0	6	0	0	0	4	0	10	0
	% within Area	0.0%	60.0%	0.0%	0.0%	0.0%	40.0%	0.0%		
Stretford	Count	6	20	12	18	4	6	6	72	16
	% within Area	8.3%	27.8%	16.7%	25.0%	5.6%	8.3%	8.3%		
Online	Count	1	11	9	10	3	9	3	46	4
	% within Area	2.2%	23.9%	19.6%	21.7%	6.5%	19.6%	6.5%		
Total	Count	20	82	42	65	16	39	24	288	36
	% of Total	6.9%	28.5%	14.6%	22.6%	5.6%	13.5%	8.3%		11.1%

In all areas respondents agreed that over the counter medicines are not as powerful as their prescribed counter parts.

Q17 Over the counter medicines do not react with other medicines.

Table 21 React with other medicines

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	1	1	1	4	3	10	7	27	4
	% within Area	3.7%	3.7%	3.7%	14.8%	11.1%	37.0%	25.9%		
Broughton	Count	0	2	1	2	1	9	3	18	9
	% within Area	0.0%	11.1%	5.6%	11.1%	5.6%	50.0%	16.7%		
Chorlton	Count	0	0	0	2	0	5	7	14	3
	% within Area	0.0%	0.0%	0.0%	14.3%	0.0%	35.7%	50.0%		
Crumpsall	Count	0	5	3	10	0	14	10	42	17
	% within Area	0.0%	11.9%	7.1%	23.8%	0.0%	33.3%	23.8%		
Levenshulme	Count	1	1	0	1	5	11	13	32	10
	% within Area	3.1%	3.1%	0.0%	3.1%	15.6%	34.4%	40.6%		
Moss Side	Count	2	0	0	2	2	2	0	8	2
	% within Area	25.0%	0.0%	0.0%	25.0%	25.0%	25.0%	0.0%		
Stretford	Count	1	2	1	12	7	18	21	62	26
	% within Area	1.6%	3.2%	1.6%	19.4%	11.3%	29.0%	33.9%		
Online	Count	0	1	1	8	4	17	15	46	4
	% within Area	0.0%	2.2%	2.2%	17.4%	8.7%	37.0%	32.6%		
Total	Count	5	12	7	41	22	86	76	249	75
	% of Total	2.0%	4.8%	2.8%	16.5%	8.8%	34.5%	30.5%		23.1%

While the majority in all areas disagreed with this statement, over a quarter of respondents gave a positive or neutral answer. This indicates that this is an area where more awareness is needed.

Q18 *Over the counter medicines are not always safe to use.*

Table 22 Safe

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	4	7	3	8	3	3	0	28	3
	% within Area	14.3%	25.0%	10.7%	28.6%	10.7%	10.7%	0.0%		
Broughton	Count	1	5	3	5	0	6	0	20	7
	% within Area	5.0%	25.0%	15.0%	25.9%	0.0%	30.0%	0.0%		
Chorlton	Count	2	5	2	3	1	2	1	16	1
	% within Area	12.5%	31.5%	12.5%	18.8%	6.2%	12.5%	6.2%		
Crumpsall	Count	4	12	8	10	2	14	2	52	7
	% within Area	7.7%	23.1%	15.4%	19.2%	3.8%	26.9%	3.8%		
Levenshulme	Count	6	15	3	5	1	9	1	40	2
	% within Area	15.0%	37.5%	7.5%	12.5%	2.5%	22.5%	2.5%		
Moss Side	Count	2	2	0	0	2	2	0	8	2
	% within Area	25.0%	25.0%	0.0%	0.0%	25.0%	25.0%	0.0%		
Stretford	Count	10	22	7	12	5	12	2	70	18
	% within Area	14.3%	31.4%	10.0%	17.1%	7.1%	17.1%	2.9%		
Online	Count	7	13	7	8	3	7	3	48	2
	% within Area	14.6%	27.1%	14.6%	16.7%	6.2%	14.6%	6.2%		
Total	Count	36	81	33	51	17	55	9	282	42
	% of Total	12.8%	28.7%	11.7%	18.1%	6.0%	19.5%	3.2%		13.0%

The wide variation in the answers to this question implies a high level of uncertainty and that this is another area where better education and awareness is needed.

Q19 *Over the counter medicines cannot be addictive.*

Table 23 Addictive

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	0	2	1	5	1	12	8	29	2
	% within Area	0.0%	6.9%	3.4%	17.2%	3.4%	41.4%	27.6%		
Broughton	Count	0	4	1	3	0	8	4	20	7
	% within Area	0.0%	20.0%	5.0%	15.0%	0.0%	40.0%	20.0%		
Chorlton	Count	0	1	0	1	0	7	6	15	2
	% within Area	0.0%	6.7%	0.0%	6.7%	0.0%	46.7%	40.0%	100.0%	
Crumpsall	Count	1	5	3	4	8	20	8	49	10
	% within Area	2.0%	10.2%	6.1%	8.2%	16.3%	40.8%	16.3%		
Levenshulme	Count	0	1	0	6	4	14	14	39	3
	% within Area	0.0%	2.6%	0.0%	15.4%	10.3%	35.9%	35.9%		
Moss Side	Count	0	0	0	0	0	2	6	8	2
	% within Area	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	75.0%		
Stretford	Count	3	2	6	3	13	24	20	71	17
	% within Area	4.2%	2.8%	8.5%	4.2%	18.3%	33.8%	28.2%		
Online	Count	0	4	0	5	5	19	14	47	3
	% within Area	0.0%	8.5%	0.0%	10.6%	10.6%	40.4%	29.8%		
Total	Count	4	19	11	27	31	106	80	278	46
	% of Total	1.4%	6.8%	4.0%	9.7%	11.2%	38.1%	28.8%		14.2%

While over three quarters disagreed with this statement, a significant minority, nearly a quarter, disagreed with the majority view or gave a neutral answer. This again shows the need for greater education and awareness.

5.2 Information Questions Q22 What is your main source of health information?

Table 24 Main source of health information

Area		General Practitioner	Pharmacist	Newspaper /magazine	TV/ radio	Friends and Family	Nurse	Internet	Social Media	Other	**Total**	Missing Data
Altrincham	Count	9	5	1	0	2	0	5	0	2	24	7
	% within Area	37.5%	20.8%	4.2%	0.0%	8.3%	0.0%	20.8%	0.0%	8.3%		
Broughton	Count	6	3	0	1	0	0	8	1	1	20	7
	% within Area	30.0%	15.0%	0.0%	5.0%	0.0%	0.0%	40.0%	5.0%	5.0%		
Chorlton	Count	6	0	1	0	3	0	4	0	2	16	1
	% within Area	37.5%	0.0%	6.2%	0.0%	18.8%	0.0%	25.0%	0.0%	12.5%		
Crumpsall	Count	20	9	2	1	4	4	10	0	2	52	7
	% within Area	38.5%	17.3%	3.8%	1.9%	7.7%	7.7%	19.2%	0.0%	8.3%		
Levenshulme	Count	13	7	3	0	0	0	5	0	5	33	9
	% within Area	39.4%	21.2%	9.1%	0.0%	0.0%	0.0%	15.2%	0.0%	15.2%		
Moss Side	Count	6	4	0	0	0	0	0	0	0	10	0
	% within Area	60.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
Stretford	Count	35	11	1	0	1	1	19	2	2	72	16
	% within Area	48.6%	15.3%	1.4%	0.0%	1.4%	1.4%	26.4%	2.8%	2.8%		
Online	Count	12	12	2	0	4	0	15	1	4	50	0
	% within Area	24.0%	24.0%	4.0%	0.0%	8.0%	0.0%	30.0%	2.0%	8.0%		
Total	Count	107	51	10	2	14	5	66	4	18	277	47
	% of Total	38.6%	18.4%	3.6%	0.7%	5.1%	1.8%	23.8%	1.4%	6.5%		14.5%

Despite the growth of internet use, the internet as a health information source is second to that of the general practitioner. Although the internet was the second most popular source there was no significant correlation with posting a request for health advice on the internet (r = -.100, sig (2-tailed) .064).

Q23 *Have you used the internet in the last year to search for health related information?*

Table 25 Internet use

Area			Yes	No	**Total**	Missing Data
Altrincham	Count		24	7	31	0
	% within Area		77.4%	22.6%		
Broughton	Count		20	7	27	0
	% within Area		74.1%	25.9%		
Chorlton	Count		14	3	17	0
	% within Area		82.4%	17.6%		
Crumpsall	Count		45	14	59	0
	% within Area		76.3%	23.7%		
Levenshulme	Count		33	9	42	0
	% within Area		78.6%	21.4%		
Moss Side	Count		8	2	10	0
	% within Area		80.0%	20.0%		
Stretford	Count		66	18	84	4
	% within Area		78.6%	21.4%		
Online	Count		45	5	50	0
	% within Area		90.0%	10.0%		
Total	Count		255	65	320	4
	% of Total		79.7%	20.3%		1.2%

Table 25 shows that the majority of respondents had used the internet in the last year to search for health information, and, unsurprisingly, the online community 45/50 (90%), scored the highest.

Using Spearmans Rank correlation test no significant correlation was found between internet use for searching health information in the last year and Question 3, the purchasing of major groups of OTC medicines in the last year (r = .104, sig (2- tailed) .063).

Q24 *What type of health information have you searched for on the internet?*

Table 26 Type of health information

Type of Information	Area	Altrincham	Broughton	Chorlton	Crumpsall	Levens-hulme	Moss Side	Stretford	Online
Diagnosis/ Symptoms	Count	13	18	12	39	29	2	57	33
	% within Area	43.3%	66.7%	70.6%	66.1%	69.0%	20.0%	67.9%	66.0%
Self-treatment	Count	7	7	9	22	20	2	27	18
	% within Area	23.3%	25.9%%	52.9%	37.3%	47.6%	20.0%	32.1%	36.0%
OTC Medicine	Count	2	3	2	11	3	2	6	9
	% within Area	6.7%	11.1%	11.8%	18.6%	7.1%	20.0%	7.1%	18.0%
Prescription Medicine	Count	4	2	2	10	9	4	6	8
	% within Area	13.3%	7.4%	11.8%	16.9%	21.4%	40.0%	7.1%	16.0%
Healthcare Services	Count	5	1	4	10	6	2	8	15
	% within Area	16.7%	3.7%	23.5%	16.9%	14.3%	20.0%	9.5%	30.0%
General Health/wellbeing	Count	9	3	8	13	14	2	24	24
	% within Area	30.0%	11.1%	47.1%	22.0%	33.3%	20.0%	28.6%	48.0%
Preventative Healthcare	Count	6	1	6	10	7	0	4	8
	% within Area	20.0%	3.7%	35.3%	16.9%	16.7%	0.0%	4.8%	16.0%
Alternative/ Complementary Medicine	Count	11	4	6	10	11	2	15	12
	% within Area	36.7%	14.8%	35.3%	16.9%	26.2%	20.0%	17.9%	24.0%
Information ongoing issue	Count	10	5	6	14	13	4	18	17
	% of Total	33.3%	18.5%	35.3%	23.7%	31.0%	40.0%	21.4%	34.0%
Other	Count	0	2	0	3	4	0	5	4
	% within Area	0.0	7.4	0	5.1	9.5	0.0	6.0	8.0

Diagnosis/symptoms were the most popular types of health information searched for.

Q25 *What type of internet sites do you get information from?*

Table 27 Internet sites

Area		Healthcare Organisation	Healthcare Charity	Drug Companies	Personal Blogs/ Forums	Help Groups	Wikis	Retail	Other
Altrincham	Count	21	7	2	1	5	2	0	2
	% within Area	70.0%	23.3%	6.7%	3.3%	16.7%	6.7%	0.0%	6.7%
Broughton	Count	18	3	1	1	1	1	1	3
	% within Area	66.7%	11.1%	3.7%	3.7%	3.7%	3.7%	3.7%	11.1%
Chorlton	Count	13	2	2	5	1	4	0	1
	% within Area	76.5%	11.8%	11.8%	29.4%	5.9%	23.5%	0.0%	5.9%
Crumpsall	Count	46	10	4	8	6	8	0	6
	% within Area	78.0%	16.9%	6.8%	13.6%	10.2%	13.6%	0.0%	10.2%
Levenshulme	Count	34	9	4	5	5	6	0	4
	% within Area	81.0%	21.4%	9.5%	11.9%	11.9%	14.3%	0.0%	9.5%
Moss Side	Count	6	0	0	0	0	0	0	2
	% within Area	60.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%
Stretford	Count	64	10	1	16	4	6	0	8
	% within Area	76.2%	11.9%	1.2%	19.0%	4.8%	7.1%	0.0%	9.5%
Online	Count	41	9	2	14	7	7	4	6
	% within Area	82.0%	18.0%	1.2%	28.0%	14.0%	14.0%	8.0%	12.0%
Total (n=319)	Count	243	50	16	50	29	34	5	32
	% of Total	76.2%	15.7%	5.0%	15.7%	9.1%	10.7%	1.6%	10.0%

Healthcare organisations proved the most popular source of and the use of help groups was quite low. Retail internet sites had the least use, perhaps because users questioned the independence of such sites.

Q26 *What do you think makes a good health website?*

Table 28 A good website

	Area	Altrincham	Broughton	Chorlton	Crumpsall	Levens-hulme	Moss Side	Stretford	Online	Total Count (n=319)	% of Total
Easy to Navigate	Count	22	18	10	37	28	6	51	39	211	66.1%
	% within Area	73.3%	66.7%	58.8%	62.7%	66.7%	60.0%	60.7%	78.0%		
FAQs Section	Count	11	10	10	25	16	2	32	29	135	42.3%
	% within Area	36.7%	37.0%	58.8%	42.4%	38.1%	20.0%	38.1%	58.0%		
Links to other Sites	Count	8	8	2	12	9	4	14	14	71	22.3%
	% within Area	26.7%	29.6%	11.8%	20.3%	21.4%	40.0%	16.7%	28.0%		
Credentials of the Site	Count	9	3	7	19	10	2	33	28	111	34.8%
	% within Area	30.0%	11.1%	41.2%	32.2%	23.8%	20.0%	39.3%	56.0%		
Site Forum	Count	2	1	0	5	2	2	7	11	30	9.4%
	% within Area	6.7%	3.7%	0.0%	8.5%	4.8%	20.0%	8.3%	22.0%		
Regularly Updated	Count	8	8	8	21	20	2	32	26	125	39.2%
	% within Area	26.7%	29.6%	47.1%	35.6%	47.6%	20.0%	38.1%	52.0%		
Other	Count	1	1	4	4	3	0	3	3	19	6.0%
	% within Area	3.3%	3.7%	23.5%	6.8%	7.1%	0.0	3.6%	6.0%		

Being easy to navigate was by far the most important factor affecting use, mentioned by two thirds of respondents. No other website feature was mentioned by the majority of respondents.

Q27 *Have you ever posted a request for health advice on the internet?*

Table 29 Request

Area		Yes	No	**Total**	Missing Data
Altrincham	Count	1	29	30	1
	% within Area	3.3%	96.7%		
Broughton	Count	2	25	27	0
	% within Area	7.4%	92.6%		
Chorlton	Count	1	16	17	0
	% within Area	5.9%	94.1%		
Crumpsall	Count	2	55	57	2
	% within Area	3.5%	96.5%		
Levenshulme	Count	3	37	40	2
	% within Area	7.5%	92.5%		
Moss Side	Count	2	6	8	2
	% within Area	25.0%	75.0%		
Stretford	Count	2	79	81	7
	% within Area	2.5%	97.5%		
Online	Count	9	40	49	1
	% within Area	18.4%	81.6%		
Total	Count	22	287	309	15
	% of Total	7.1%	92.9%		4.6%

Table 29 shows that few people have posted a request for health advice online. Even amongst the online respondent group, less than one in six had done so.

Q28 *Have you ever responded to another person's request for health advice on the internet?*

Table 30 Response

Area		Yes	No	**Total**	Missing Data
Altrincham	Count	3	27	30	1
	% within Area	10.0%	90.0%		
Broughton	Count	2	25	27	0
	% within Area	7.4%	92.62%		
Chorlton	Count	1	16	17	0
	% within Area	5.9%	94.1%		
Crumpsall	Count	1	56	57	2
	% within Area	1.8%	98.2%		
Levenshulme	Count	3	37	40	2
	% within Area	7.5%	92.5%		
Moss Side	Count	4	4	8	2
	% within Area	50.0%	50.0%		
Stretford	Count	1	80	81	7
	% within Area	1.2%	98.8%		
Online	Count	13	35	48	2
	% within Area	27.1%	72.9%		
Total	Count	28	280	308	16
	% of Total	9.1%	90.9%		4.9%

A statistical test using Chi–square and Fisher's Exact Test demonstrated evidence of a difference between the consumer posting a request for health information on the internet and having ever responding to another person's request for health advice online   (p-value .000). Using Spearman's Rank test it was found that a strong correlation exists between posting a request for health information on the internet and responding to another person's request for health advice online (r = .263, sig (2- tailed) .000 significant at the 0.01 level).

Q29 I *feel confident the information I receive on the internet is correct.*

Table 31 Correct information

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	0	6	5	15	4	0	0	30	1
	% within Area	0.0%	20.0%	16.7%	50.0%	13.3%	0.0%	0.0%		
Broughton	Count	1	6	4	11	0	0	0	22	5
	% within Area	4.5%	27.3%	18.2%	50.0%	0.0%	0.0%	0.0%		
Chorlton	Count	0	2	7	3	0	2	0	14	3
	% within Area	0.0%	14.3%	50.0%	21.4%	0.0%	14.3%	0.0%		
Crumpsall	Count	2	24	9	13	3	1	1	53	6
	% within Area	3.8%	45.3%	17.0%	24.5%	5.7%	1.9%	1.9%		
Levenshulme	Count	1	10	11	8	2	3	1	36	6
	% within Area	2.8%	27.8%	30.6%	22.2%	5.6%	8.3%	2.8%		
Moss Side	Count	2	2	0	0	0	4	0	8	2
	% within Area	25.0%	25.0%	0.0%	0.0%	0.0%	50.0%	0.0%		
Stretford	Count	2	24	18	21	5	1	1	72	16
	% within Area	2.8%	33.3%	25.0%	29.2%	6.9%	1.4%	1.4%		
Online	Count	0	15	9	14	2	7	1	48	2
	% within Area	0.0%	31.2%	18.8%	29.2%	4.2%	14.6%	2.1%		
Total	Count	8	89	63	85	16	18	4	283	41
	% of Total	2.8%	31.4%	22.3%	30.0%	5.7%	6.4%	1.4%		12.7%

It is interesting that nearly a third of respondents gave a neutral response to this question, perhaps indicating the uncertainty over the reliability of online information.

Q30 *I tend to use the same websites to gain information*

Table 32 Same websites

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	1	11	3	9	1	2	0	27	4
	% within Area	3.7%	40.7%	11.1%	33.3%	3.7%	7.4%	0.0%		
Broughton	Count	1	7	2	8	0	3	0	21	6
	% within Area	4.8%	33.3%	9.5%	38.1%	0.0%	14.3%	0.0%		
Chorlton	Count	1	5	3	4	2	0	0	15	2
	% within Area	6.7%	33.3%	20.0%	26.7%	13.3%	0.0%	0.0%		
Crumpsall	Count	5	26	8	10	2	2	2	55	4
	% within Area	9.1%	47.3%	14.5%	18.2%	3.6%	3.6%	3.6%		
Levenshulme	Count	3	14	6	4	6	3	0	36	6
	% within Area	8.3%	38.9%	16.7%	11.1%	16.7%	8.3%	0.0%		
Moss Side	Count	4	0	0	2	0	2	0	8	2
	% within Area	50.0%	0.0%	0.0%	25.0%	0.0%	25.0%	0.0%		
Stretford	Count	11	26	6	20	6	0	4	73	15
	% within Area	15.1%	35.6%	8.2%	27.4%	8.2%	0.0%	5.5%		
Online	Count	7	20	8	7	3	2	0	47	3
	% within Area	14.9%	42.6%	17.0%	14.9%	6.4%	4.3%	0.0%	100.0%	
Total	Count	33	109	36	64	20	14	6	282	42
	% of Total	11.7%	38.7%	12.8%	22.7%	7.1%	5.0%	2.1%		13.0%

Pearson's Chi-square test was used to determine statistical significance between using the same websites to gain information and confidence that the information received on the internet is correct (Q29). Results of the test concluded a statistical difference between groups (x^2 = 44.955 DF= 4 P=.000). Spearman's rho was then used to determine if a correlation exists between using the same sites and confidence that the information is correct. The correlation was significant (r = .363, sig (2 – tailed) .000 significant at the 0.01 level).

Q31 *I would consider buying over the counter medicines online.*

Table 33 Buying OTC medicine online

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	1	3	3	1	2	8	9	27	4
	% within Area	3.7%	11.1%	11.1%	3.7%	7.4%	29.6%	33.3%		
Broughton	Count	0	1	1	4	2	7	6	21	6
	% within Area	0.0%	4.8%	4.8%	19.0%	9.5%	33.3%	28.6%		
Chorlton	Count	0	2	3	3	3	4	2	17	0
	% within Area	0.0%	11.8%	17.6%	17.6%	17.6%	23.5%	11.8%		
Crumpsall	Count	2	5	3	5	3	23	12	53	6
	% within Area	3.8%	9.4%	5.7%	9.4%	5.7%	43.4%	22.6%		
Levenshulme	Count	2	4	2	4	0	10	17	39	3
	% within Area	5.1%	10.30%	5.1%	10.3%	0.0%	25.6%	43.6%		
Moss Side	Count	0	4	0	0	0	0	4	8	2
	% within Area	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%	
Stretford	Count	2	6	7	6	9	15	30	75	13
	% within Area	2.7%	8.0%	9.3%	8.0%	12.0%	20.0%	40.0%		
Online	Count	1	4	5	3	3	16	15	47	3
	% within Area	2.1%	8.5%	10.6%	6.4%	6.4%	34.0%	31.9%		
Total	Count	8	29	24	26	22	83	95	287	37
	% of Total	2.8%	10.1%	8.4%	9.1%	7.7%	28.9%	33.1%		11.4%

The majority of respondents tended to disagree or strongly disagree with buying OTC medicines online. There was a significant correlation (Spearman's Rank) between considering buying OTC medicines online and buying OTC medicines online that are not available in England Q32 (r = .576 sig (2 – tailed) .000, significant at the 0.01 level).

There was no significant correlation between considering buying OTC medicine online and using the same websites to gain information (r = -.087, sig (2-tailed) .155).

Q32 *I would consider buying over the counter medicines online that are not available in England.*

Table 34 Buying OTC medicines that are not available in England

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	0	1	0	4	1	8	17	31	0
	% within Area	0.0%	3.2%	0.0%	12.9%	3.2%	25.8%	54.8%		
Broughton	Count	0	2	1	2	1	6	10	22	5
	% within Area	0.0%	9.1%	4.5%	9.1%	4.5%	27.3%	45.5%		
Chorlton	Count	0	2	2	3	2	0	7	16	1
	% within Area	0.0%	12.5%	12.5%	18.8%	12.5%	0.0%	43.8%		
Crumpsall	Count	0	5	5	4	4	10	23	51	8
	% within Area	0.0%	9.8%	9.8%	7.8%	7.8%	19.6%	45.1%		
Levenshulme	Count	0	1	2	0	4	9	24	40	2
	% within Area	0.0%	2.5%	5.0%	0.0%	10.0%	22.5%	60.0%		
Moss Side	Count	0	2	0	4	0	2	0	8	2
	% within Area	0.0%	25.0%	0.0%	50.0%	0.0%	25.0%	0.0%		
Stretford	Count	3	1	6	4	3	16	43	76	12
	% within Area	3.9%	1.3%	7.9%	5.3%	3.9%	21.1%	56.6%		
Online	Count	0	2	3	3	6	7	24	45	5
	% within Area	0.0%	4.4%	6.7%	6.7%	13.3%	15.6%	53.3%	100.0%	
Total	Count	3	16	19	24	21	58	148	289	35
	% of Total	1.0%	5.5%	6.6%	8.3%	7.3%	20.1%	51.2%		10.8%

Overwhelmingly respondents disagreed or strongly disagreed with considering buying OTC medicines online that are not available in England.

Q33 *Online information does not influence my over the counter medicine purchases.*

Table 35 Online information does not influence OTC purchases

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	2	8	5	10	3	2	1	31	0
	% within Area	6.5%	25.8%	16.1%	32.3%	9.7%	6.5%	3.2%		
Broughton	Count	2	6	1	8	3	2	1	23	4
	% within Area	8.7%	26.1%	4.3%	34.8%	13.0%	8.7%	4.3%		
Chorlton	Count	2	5	3	2	2	3	0	17	0
	% within Area	11.8%	29.4%	17.6%	11.8%	11.8%	17.6%	0.0%		
Crumpsall	Count	4	18	7	9	9	5	1	53	6
	% within Area	7.5%	34.0%	13.2%	17.0%	17.0%	9.4%	1.9%		
Levenshulme	Count	7	8	3	8	4	4	1	35	7
	% within Area	20.0%	22.9%	8.6%	22.9%	11.4%	11.4%	2.9%		
Moss Side	Count	0	2	2	0	0	2	0	6	4
	% within Area	0.0%	33.3%	33.3%	0.0%	0.0%	33.3%	0.0%		
Stretford	Count	17	24	7	12	9	8	1	78	10
	% within Area	21.8%	30.8%	9.0%	15.4%	11.5%	10.3%	1.3%		
Online	Count	5	11	4	11	8	7	2	48	2
	% within Area	10.4%	22.9%	8.3%	22.9%	16.7%	14.6%	4.2%		
Total	Count	39	82	32	60	38	33	7	291	33
	% of Total	13.4%	28.2%	11.0%	20.6%	13.1%	11.3%	2.4%		10.2%

This question gave a range of answers with only a slight majority (53%) agreeing with this statement.

Q34 *The information I get online does not replace the information from a health professional.*

Table 36 Online information does not replace the health professional

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	14	10	0	4	1	1	0	30	1
	% within Area	46.7%	33.3%	0.0%	13.3%	3.3%	3.3%	0.0%		
Broughton	Count	5	11	2	3	0	2	1	24	3
	% within Area	20.8%	45.8%	8.3%	12.5%	0.0%	8.3%	4.2%		
Chorlton	Count	6	6	1	1	3	0	0	17	0
	% within Area	35.3%	35.3%	5.9%	5.9%	17.6%	0.0%	0.0%		
Crumpsall	Count	16	22	8	3	1	3	0	53	6
	% within Area	30.2%	41.5%	15.1%	5.7%	1.9%	5.7%	0.0%		
Levenshulme	Count	17	7	4	6	1	1	0	36	6
	% within Area	47.2%	19.4%	11.1%	16.7%	2.8%	2.8%	0.0%		
Moss Side	Count	0	4	2	0	0	0	0	6	4
	% within Area	0.0%	66.7%	33.3%	0.0%	0.0%	0.0%	0.0%		
Stretford	Count	34	30	6	7	2	1	0	80	8
	% within Area	42.5%	37.5%	7.5%	8.8%	2.5%	1.2%	0.0%		
Online	Count	13	18	6	7	5	0	0	49	1
	% within Area	26.5%	36.7%	12.2%	14.3%	10.2%	0.0%	0.0%		
Total	Count	105	108	29	31	13	8	1	295	29
	% of Total	35.6%	36.6%	9.8%	10.5%	4.4%	2.7%	0.3%		9.0%

The majority of respondents strongly agreed or agreed that the information gained online does not replace the information from a health professional, indicating the faith the respondents have in the information given them by such professionals.

No significant correlations (Spearman's Rank) were found between online information replacing information from a health professional and confidence that the information

received online was correct (Q29) (r = -.066, sig (2 – tailed) .274) or tending to use the same website to gain information (Q30) (r = .098, sig (2-tailed) .106).

Q35 *I do not always check the sites' privacy policy.*

Table 37 Privacy Policy

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	6	6	2	4	1	5	1	25	6
	% within Area	24.0%	24.0%	8.0%	16.0%	4.0%	20.0%	4.0%		
Broughton	Count	3	10	1	1	1	4	1	21	6
	% within Area	14.3%	47.6%	4.8%	4.8%	4.8%	19.0%	4.8%		
Chorlton	Count	1	5	2	2	2	1	3	16	1
	% within Area	6.2%	31.2%	12.5%	12.5%	12.5%	6.2%	18.8%		
Crumpsall	Count	4	22	4	8	3	6	4	51	8
	% within Area	7.8%	43.1%	7.8%	15.7%	5.9%	11.8%	7.8%		
Levenshulme	Count	5	12	8	3	1	4	1	34	8
	% within Area	14.7%	35.3%	23.5%	8.8%	2.9%	11.8%	2.9%		
Moss Side	Count	0	2	2	0	0	2	0	6	4
	% within Area	0.0%	33.3%	33.3%	0.0%	0.0%	33.3%	0.0%		
Stretford	Count	15	26	7	15	4	2	3	72	16
	% within Area	20.8%	36.1%	9.7%	20.8%	5.6%	2.8%	4.2%		
Online	Count	5	13	6	12	0	7	3	46	4
	% within Area	10.9%	28.3%	13.0%	26.1%	0.0%	15.2%	6.5%		
Total	Count	39	96	32	45	12	31	16	271	53
	% of Total	14.4%	35.4%	11.8%	16.6%	4.4%	11.4%	5.9%		16.4%

Table 37 shows a general lack of concern about privacy when using healthcare sites. Spearman's Rank correlation test was used to confirm a significant correlation between respondents not always checking a sites' privacy policy and not always checking a sites' credentials (r = .605, sig (2 – tailed) .000 significant at the 0.01 level).

Q36 *I do not always check the sites' credentials.*

Table 38 Credentials

Area		Strongly Agree	Agree	Slightly Agree	Neutral	Slightly Disagree	Disagree	Strongly Disagree	**Total**	Missing Data
Altrincham	Count	6	5	2	4	3	5	2	27	4
	% within Area	22.2%	18.5%	7.4%	14.8%	11.1%	18.5%	7.4%		
Broughton	Count	3	8	2	5	0	2	2	22	5
	% within Area	13.6%	36.4%	9.1%	22.7%	0.0%	9.1%	9.1%		
Chorlton	Count	0	8	3	1	0	4	0	16	1
	% within Area	0.0%	50.0%	18.8%	6.2%	0.0%	25.0%	0.0%		
Crumpsall	Count	3	15	7	8	2	9	7	51	8
	% within Area	5.9%	29.4%	13.7%	15.7%	3.9%	17.6%	13.7%		
Levenshulme	Count	3	8	4	1	4	9	5	34	8
	% within Area	8.8%	23.5%	11.8%	2.9%	11.8%	26.5%	14.7%		
Moss Side	Count	0	2	2	0	0	2	0	6	4
	% within Area	0.0%	33.3%	33.3%	0.0%	0.0%	33.3%	0.0%	100.0%	
Stretford	Count	13	13	8	14	10	6	10	74	14
	% within Area	17.6%	17.6%	10.8%	18.9%	13.5%	8.1%	13.5%		
Online	Count	3	12	4	8	3	10	6	46	4
	% within Area	6.5%	26.1%	8.7%	17.4%	6.5%	21.7%	13.0%		
Total	Count	31	71	32	41	22	47	32	276	48
	% of Total	11.2%	25.7%	11.6%	14.9%	8.0%	17.0%	11.6%		14.8%

Around half the respondents did not check the sites' credentials, though it is not certain whether this is because the respondents already knew of the sites reputation or that it is not a priority.

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5.3 Demographic questions

Q39 *Are you male or female?*

Table 39 Gender

Area			Male	Female	Total	Missing Data
Altrincham	Count		4	26	30	1
	% within Area		13.3%	86.7%		
Broughton	Count		3	21	24	3
	% within Area		12.5%	87.5%		
Chorlton	Count		4	13	17	0
	% within Area		23.5%	76.5%		
Crumpsall	Count		12	41	53	6
	% within Area		22.6%	77.4%		
Levenshulme	Count		8	32	40	2
	% within Area		20.0%	80.0%	100.0%	
Moss Side	Count		4	6	10	0
	% within Area		40.0%	60.0%		
Stretford	Count		17	63	81	7
	% within Area		21.0%	77.8%		
Online	Count		11	34	46	4
	% within Area		23.9%	73.9%	100.0%	
Total	Count		63	236	301	23
	% of Total		20.9%	78.4%		7.1%

Over three quarters of respondents were female. A Chi-Square test was used to test for statistical significance between gender and ongoing health issues (Q2), the use of OTC medicine in the last year and the frequency of purchasing OTC medicines (Q4). In each case the results could not be used as the cells had over 20% expected count less than 5

Q40 *How old are you?*

Table 40 Ages

Area		18-24	25-34	35-44	45-54	55-64	65+	**Total**	Missing Data
Altrincham	Count	3	4	9	12	2	0	30	1
	% within Area	10.0%	13.3%	30.0%	40.0%	6.7%	0.0%		
Broughton	Count	0	4	8	8	5	0	25	2
	% within Area	0.0%	16.0%	32.0%	32.0%	20.0%	0.0%		
Chorlton	Count	0	2	8	7	0	0	17	0
	% within Area	0.0%	11.8%	47.1%	41.2%	0.0%	0.0%		
Crumpsall	Count	0	20	25	7	0	1	53	6
	% within Area	0.0%	37.7%	47.2%	13.2%	0.0%	1.9%		
Levenshulme	Count	0	4	20	14	2	0	40	2
	% within Area	0.0%	10.0%	50.0%	35.0%	5.0%	0.0%		
Moss Side	Count	0	4	0	2	4	0	10	0
	% within Area	0.0%	40.0%	0.0%	20.0%	40.0%	0.0%		
Stretford	Count	2	13	50	10	4	2	81	7
	% within Area	2.5%	16.0%	61.7%	12.3%	4.9%	2.5%	100.0%	
Online	Count	2	10	16	10	5	3	46	4
	% within Area	4.3%	21.7%	34.8%	21.7%	10.9%	6.5%		
Total	Count	7	61	136	70	22	6	302	22
	% of Total	2.3%	20.2%	45.0%	23.2%	7.3%	2.0%		6.8%

The results show a range of ages, though nearly half were in the 35-44 age groups. A Chi-square test was used to determine if statistical significance was evident between age and ongoing health issues (Question 2). Too many cells (over 20%) had an expected count less than 5, so the results could not be used.

Q41 *In your main job, how many hours a week (including paid and unpaid overtime) do you usually work?*

Table 41 Hours worked

Area		0-15	16-30	31-48	49 or more	Total	Missing Data
Altrincham	Count	6	6	11	6	29	2
	% within Area	20.7%	20.7%	37.9%	20.7%		
Broughton	Count	4	10	8	2	24	3
	% within Area	16.7%	41.7%	33.3%	8.3%		
Chorlton	Count	6	6	5	0	17	0
	% within Area	35.3%	35.3%	29.4%	0.0%		
Crumpsall	Count	10	14	20	2	46	13
	% within Area	21.7%	30.4%	43.5%	4.3%		
Levenshulme	Count	5	15	17	1	38	4
	% within Area	13.2%	39.5%	44.7%	2.6%		
Moss Side	Count	4	2	0	2	8	2
	% within Area	50.0%	25.0%	0.0%	25.0%		
Stretford	Count	17	31	24	5	78	10
	% within Area	21.8%	39.7%	30.8%	6.4%		
Online	Count	11	7	20	6	44	6
	% within Area	25.0%	15.9%	45.5%	13.6%		
Total	Count	63	91	105	24	284	40
	% of Total	22.2%	32.0%	37.0%	8.5%		12.3%

The results show that fewer than half the respondents were full time workers (31+ hours/week). Whether this was a reflection of the method of collecting data is uncertain. It is possible that those attending leisure centres may do so because they have more time available through not being employed full time. It is notable that the majority of the online group (59%) were full time employed.

Q42 *What is your highest level of education?* *Table 42 Education*

		GCSE	A Level	Vocational Qualification	Diploma	Professional Qualification	Degree	Higher Degree	Other	**Total**	Missing Data
Altrincham	Count	1	1	1	3	2	12	6	1	27	4
	% within Area	3.7%	3.7%	3.7%	11.1%	7.4%	44.4%	22.2%	3.7%		
Broughton	Count	8	0	0	3	4	4	1	1	21	6
	% within Area	38.1%	0.0%	0.0%	14.3%	19.0%	19.0%	4.8%	4.8%		
Chorlton	Count	0	0	0	0	1	8	7	0	16	1
	% within Area	0.0%	0.0%	0.0%	0.0%	6.2%	50.0%	43.8%	0.0%		
Crumpsall	Count	5	5	5	8	4	15	8	1	51	8
	% within Area	9.8%	9.8%	9.8%	15.7%	7.8%	29.4%	15.7%	2.0%		
Levenshulme	Count	5	4	2	3	3	11	7	3	38	4
	% within Area	13.2%	10.5%	5.3%	7.9%	7.9%	28.9%	18.4%	7.9%		
Moss Side	Count	2	0	0	2	6	0	0	0	10	0
	% within Area	20.0%	0.0%	0.0%	20.0%	60.0%	0.0%	0.0%	0.0%		
Stretford	Count	12	5	2	7	10	26	15	4	81	7
	% within Area	14.8%	6.2%	2.5%	8.6%	12.3%	32.1%	18.5%	4.9%		
Online	Count	12	5	2	2	4	14	6	2	47	3
	% within Area	25.5%	10.6%	4.3%	4.3%	8.5%	29.8%	12.8%	4.3%		
Total	Count	45	20	12	28	34	90	50	12	291	33
	% of Total	15.5%	6.9%	4.1%	9.6%	11.7%	30.9%	17.2%	4.1%		10.2%

There is a clear mix of education levels amongst the respondents which is likely to be a reasonable reflection of the education levels of the population in the areas surveyed.

Q43 *What is your household income?* Table 43 Household income

Area		0-£9000	£10,000-£19,000	£20,000-£29,000	£30,000-£39,000	40,000-49,000	50,000-£59,000	£60,000-£69,000	£70,000+	Other	Total	Missing Data
Altrincham	Count	4	2	4	3	1	4	2	3	0	23	8
	% within Area	17.4%	8.7%	17.4%	13.0%	4.3%	17.4%	8.7%	13.0%	0.0%		
Broughton	Count	2	2	8	3	1	2	1	2	2	23	4
	% within Area	8.7%	8.7%	34.8%	13.0%	4.3%	8.7%	4.3%	8.7%	8.7%		
Chorlton	Count	1	0	4	2	2	3	2	3	0	17	0
	% within Area	5.9%	0.0%	23.5%	11.8%	11.8%	17.6%	11.8%	17.6%	0.0%		
Crumpsall	Count	3	9	17	7	3	6	0	2	0	47	12
	% within Area	6.4%	19.1%	36.2%	14.9%	6.4%	12.8%	0.0%	4.3%	0.0%		
Levenshulme	Count	2	8	7	6	8	3	3	1	0	38	4
	% within Area	5.3%	21.1%	18.4%	15.8%	21.1%	7.9%	7.9%	2.6%	0.0%		
Moss Side	Count	0	0	2	0	0	2	2	0	0	6	4
	% within Area	0.0%	0.0%	33.3%	0.0%	0.0%	33.3%	33.3%	0.0%	0.0%		
Stretford	Count	3	2	10	8	15	16	7	9	2	72	16
	% within Area	4.2%	2.8%	13.9%	11.1%	20.8%	22.2%	9.7%	12.5%	2.8%		
Online	Count	6	5	4	3	6	7	2	7	0	40	10
	% within Area	15.0%	12.5%	10.0%	7.5%	15.0%	17.5%	5.0%	17.5%	0.0%		
Total	Count	21	28	56	32	36	43	19	27	4	266	58
	% of Total	7.9%	10.5%	21.1%	12.0%	13.5%	16.2%	7.1%	10.2%	1.5%		17.9%

Again there is a wide variation of household incomes in the surveyed group with all income groups being represented.

Q44 *What is your ethnic group*

Table 44 Ethnic group

Area			Altrincham	Broughton	Chorlton	Crumpsall	Levenshulme	Moss Side	Stretford	Online	Total
English/ Welsh/ Scottish/ Northern Irish/ British	Count		25	21	11	20	25	0	64	40	206
	% within Area		100.0%	84.0%	64.7%%	37.7%	67.6%%	0.0%	78.0%	85.1%	71.0%
Irish	Count		0	1	0	1	2	0	1	0	5
	% within Area		0.0%	4.0%	0.0%	1.9%	5.4%	0.0%	1.2%	0.0%	1.7%
Any Other White Background	Count		0	1	3	0	2	0	3	6	15
	% within Area		0.0%	4.0%	17.6%	0.0%	5.4%	0.0%	3.7%	12.8%	5.2%
White and Black Caribbean	Count		0	0	0	1	0	2	0	0	3
	% within Area		0.0%	0.0%	0.0%	1.9%	0.0%	50.0%	0.0%	0.0%	1.0%
White and Black African	Count		0	0	0	1	0	2	0	0	3
	% within Area		0.0%	0.0%	0.0%	1.9%	0.0%	50.0%	0.0%	0.0%	1.0%
White and Asian	Count		0	1	0	1	0	0	2	0	4
	% within Area		0.0%	4.0%	0.0%	1.9%	0.0%	0.0%	2.4%	0.0%	1.4%
Any other mixed/multiple Ethnic background	Count		0	0	0	0	0	0	1	0	1
	% within Area		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.3%
Indian	Count		0	0	0	3	0	0	2	0	5

	% within Area	0.0%	0.0%	0.0%	5.7%	0.0%	0.0%	0.0%	0.0%	1.7%
Pakistani	Count	0	0	1	10	0	0	3	0	14
	% within area	0.0%	0.0%	5.9%	18.9%	0.0%	0.0%	3.7%	0.0%	4.8%
Any other Asian Background	Count	0	0	0	2	1	0	1	0	4
	%within area	0.0%	0.0%	0.0%	3.8%	2.7%	0.0%	1.2	0.0%	1.4
African	Count	0	1	1	9	0	0	2	0	13
	% within area	0.0%	4.0%	5.9%	17.0%	0.0%	0.0%	2.4%	0.0%	4.5%
Caribbean	Count	0	0	0	1	7	0	2	0	10
	% within area	0.0%	0.0%	0.0%	1.9%	18.9%	0.0%	2.4%	0.0%	3.4%
Any other Black/ African/ Caribbean background	Count	0	0	0	0	0	0	1	0	1
	% within area	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.3%
Arab	Count	0	0	1	2	0	0	0	0	3
	% within area	0.0%	0.0%	5.9%	3.8%	0.0%	0.0%	0.0%	0.0%	1.0%
Any other Ethnic Group	Count	0	0	0	2	0	0	0	0	2
	% within area	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.7%

The table shows a wide range of ethnic groups are represented in the survey respondents.

45 *What is your main language?*

Area		Language		Total	Missing Data
		English	Other		
Altrincham	Count	25	0	25	6
	% within Area	100.0%	0.0%		
Broughton	Count	20	3	23	4
	% within Area	87.%	13.0%		
Chorlton	Count	16	1	17	0
	% within Area	94.1%	5.9%		
Crumpsall	Count	44	7	51	8
	% within Area	86.3%	13.7%		
Levenshulme	Count	31	1	32	10
	% within Area	96.9%	3.1%		
Moss Side	Count	4	0	4	6
	% within Area	100.0%	0.0%		
Stretford	Count	78	1	79	9
	% within Area	98.7%	1.3%		
Online	Count	47	0	47	3
	% within Area	100.0%	0.0%		
Total	Count	265	13	278	46
	% of Total	95.3%	4.7%		14.2%

Table 45   Language

English remains the main language spoken in all areas. Some respondents did indicate on the survey that they were bilingual, using English at work but speaking another language at home.

6 Qualitative Results

6.1 CIT Responses

A total of 549 responses were gained from the four CIT questions, from this 500 responses met the inclusion criteria as described in Chapter 4. Questions that concentrated on a successful incident gained the most responses, questions one and three, which asked about successful treatment using OTC medicines and success when searching for health information respectively.

Table 46 CIT responses

Question	Responses (n)	Useable (n)	Unusable (n)
CIT 1	236	220	16
CIT 2	121	108	13
CIT 3	162	150	12
CIT 4	30	22	8
Total	549	**500**	49

Each response that met the criteria for inclusion contained one or more critical incident, a total of 1210 incidents were identified, again the highest number of incidents occurred in questions 1 and 3 which examined concepts of success in OTC medicine treatment and health information searching. Each incident was analysed thematically so emerging themes and subthemes could be identified.

Table 47 Critical incidents per question

Question	Critical Incidents per question (n)
CIT 1	519
CIT 2	306
CIT 3	331
CIT 4	54
Total	**1210**

Sixteen main themes and 34 subthemes emerged. Question one resulted in 4 main themes and 9 subthemes, question two resulted in 3 main themes and 8 subthemes. Question three identified 4 main themes and 9 subthemes and finally question four from which 5 main themes and 8 subthemes emerged.

Table 48   Themes

Question	Themes (n)	Subthemes (n)
CIT 1	4	9
CIT 2	3	8
CIT 3	4	9
CIT 4	5	8
Total	16	34

6.2 CIT Question 1 (519 incidents)

Q1 Please identify a time when you successfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event? What did you do? What was the outcome or result in regard to what you did? What made this action effective? Would you do anything differently?
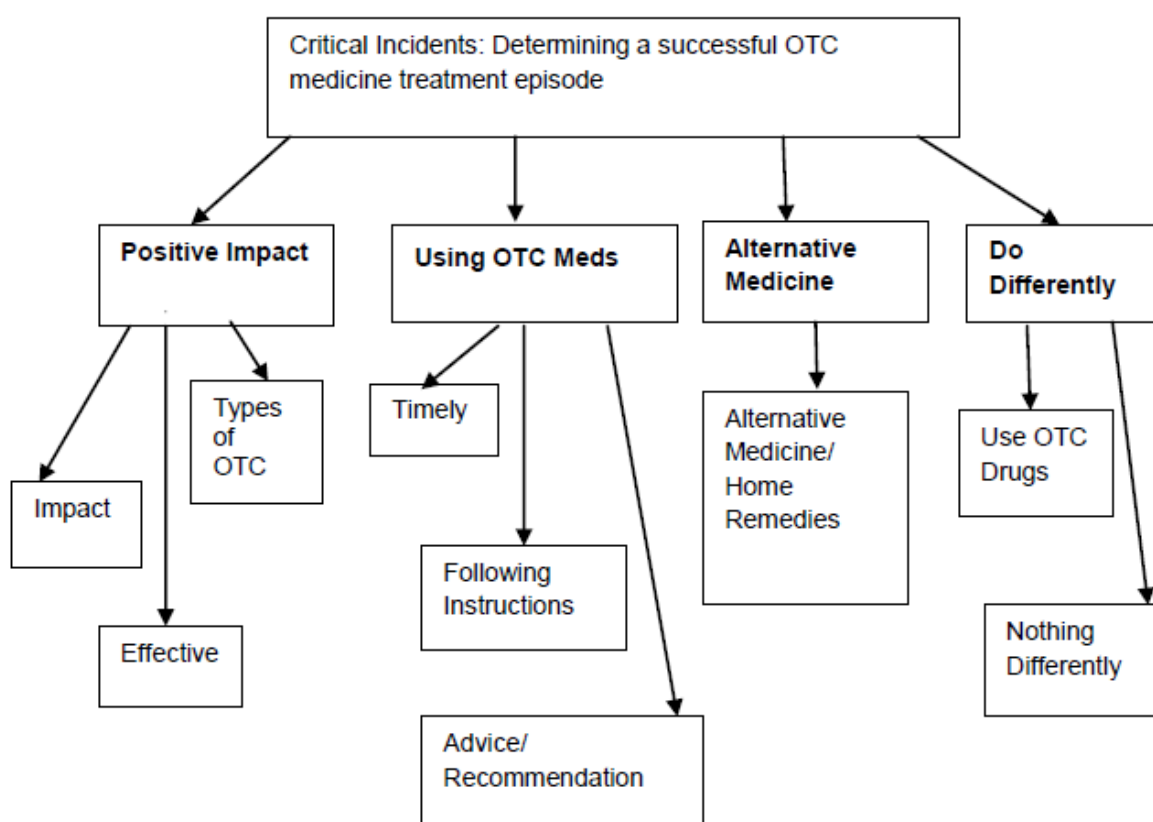
Figure 11 Themes CIT 1

Table 49   CIT 1 Themes

Question	Theme	Subtheme	Subtheme Total (n)	Theme Total (n)
CIT 1	**Positive Impact**	Effective	178	**385**
		Impact	42	
		Types OTC med	165	
	Using OTC meds	Advice/recommendation	28	**45**
		Following Instructions	12	
		Timely	5	
	Alternative Medicine	Alternative medicine/home remedies	6	**6**
	Do Differently	Nothing Differently	77	**83**
		Use OTC Drugs	6	
Total				**519**

6.2.1 Theme: Positive impact (385 incidents)

The most frequently discussed category discussed was that of an experience where over the counter medicine had a positive impact on the life of the respondent, generally due to the alleviation of symptoms of the illness being treated. Phrases used to describe this included effective, very effective, it worked. The language used by respondents tended to have positive attributes. The subtheme 'effective – symptom relief' was developed to reflect this.

6.2.1.1 Subtheme: Effective – symptom relief (178 incidents)

> *'Hangover. Alka seltzer. **It worked**. Same again next time'.*

> *'Few times, headache, sickness and **the effective one was the backache, they gave a good painkiller to stop the pain** while my GP refused to give me anything'.*

Both examples illustrate a positive experience with OTC drugs. The first respondent commented that it worked and would repeat the treatment should the need arise again. The second example explains that an OTC medicine used for back pain was effective although it remains unclear who 'they' are, it could be presumed it was a pharmacy. It does also seem

that this respondent approached their doctor and the outcome was unsuccessful resulting in them seeking medicine from another source.

6.2.1.2 Sub theme: Impact on quality of life (42 incidents)

Some respondents further emphasised how they thought the OTC medicine was effective or how it had a positive impact on their life. Examples of this include using own brand medicines as it is often cost effective and effective in terms of treatment. Other examples included the impact on day to day living and minimising the disruption that being ill can cause, such as shortening the duration of an illness or feeling better sooner than unexpected.

> *'Niece needed travel sickness pills. Enquired the difference between brand and pharmacy own.* **Purchased 'own' as cost less but was effective for her'.**

> *'Felt head cold coming on. Beechams flu plus –* **still able to go to work and mind kids!'***.*

> *'My son had conjunctivitis, sticky eyes, not responding to regular cleaning over a few days, went and bought chloramphenicol eye drops* **after 2 days of use – all better!'***.*

> *'GP kept on diagnosing a chest infection with treatment of antibiotics, actual diagnosis reflux problems due to stress. After research on the internet, self diagnosed, bought necessary over the counter meds and* **have successfully been able to monitor and maintain acceptable balance for daily living.'**

In the above examples respondents explained how in differing ways the medicine had a positive impact on their quality of living. The first incident expresses how the own brand cost less and they were able to save money but the tablets were effective, therefore not compromising on symptom relief. The second incident explains that the responsibilities of daily living were met, the medicine allowed them to go to work and look after children, whilst the next example emphasises how quickly the eye drops had worked. The final example details how an acceptable balance for daily living has been achieved. Whilst this individual does not say that the medicine has been wholly effective, it is implied through the phrase highlighted that there has been an improvement.

6.2.1.3 Subtheme: Types of OTC medicine used successfully (165 incidents).

Respondents in the CIT section of the survey were free to describe their experiences with any type of OTC medicine. Individuals referred to their medication in a number of ways, some describing the type, others using brand names.

*'Hayfever. Took recommended **allergy relief tablets** which were effective'.*

Painkillers (analgesics) including cold remedies, cough medicines and anti-histamines were all represented in the CIT responses, unsurprisingly as they are the three biggest selling types of OTC medicine in England. Other types of medications included: travel sickness medication, iron tablets, anti-fungals, alternative medicine, antacids, kaolin and morphine, eye drops, verruca treatments, cetirizine and Imodium.

6.2.2 Theme: Using OTC medicine (45 incidents)

An important factor when using OTC medicine was seeking and acting upon advice or recommendations from other sources. Sources ranged from health professionals, such as pharmacists, but not the GP, to asking people who are not health professionals such as friends or shop assistants. Another aspect to this theme is that a person who feels a medicine was successful would be happy to recommend this to others in the same situation due to having a positive experience.

6.2.2.1 Subtheme: Advice/recommendation (28 incidents):

*'Daughter had chicken pox, very itchy rash. **Asked pharmacist for advice**, treated the itching with Eurax lotion. Itching eased, child could sleep. **Good advice from pharmacy assistant regarding product**, saved trip to GP with infectious child. Would not do anything differently'.*

*'Chicken pox. Bought anti-histamine – worked really well. Medicine worked. **Have recommended to others'.***

*'I currently suffer from acid reflux in my pregnancy – I have suffered for quite a few weeks now – instead of going doctors **I went to our local shop, spoke to the cashier and he recommended gaviscon**, of which I now take when I get acid and its helping greatly ☺'.*

The three incidents above have been chosen to reflect the diversity in terms of recommendations and advice. The first example reflects the more conventional route by asking a health professional, in this case a pharmacy assistant whose advice saved having to visit the GP with an infectious child. The third incident is more unusual in that instead of seeking professional help this respondent asked the cashier in their local shop, the advice which he gave – a product recommendation, according to this respondent, has worked in terms of symptom the relief. The second example shows a different aspect to recommendations. Whilst the other two examples are people who are actively seeking advice, from very different sources, the third example has used their experience to recommend to others.

6.2.2.2 Subtheme: Following instructions (12 incidents):

As seen in the quantitative findings of the study respondents follow instructions when using OTC medicine.

> *'Cold/flu. Went to supermarket bought lemsip. Came home used lemsip alleviated symptoms (don't expect to be a cure!).* **Used according to instructions** *(not boiled water etc). Maybe look at treating in the early stages if I thought there was an effective medicine'.*

6.2.2.3 Subtheme Timely (5 incidents):

> *' Headache, running nose, sore throat. Bought some medicine with pharmacist instructions. Result successfully.* **Getting the medication at appropriate time without stress of waiting to get a prescription from GP.** *Perhaps keep some flu remedies at home'.*

> *'Caught nasty cold from husband. Took paracetamol and cough medicine and also some decongestants. Felt poorly for several days, but* **took medication immediately and started to get better straight away** *–kept on top of symptoms. Keep meds in the house for such circumstances. Skin allergy – took piriton and other anti-histamines (overdosed as directed by GP's). Need to keep meds on me at all times.* **Symptoms subside sooner the quicker I take them'.**

Following instructions was a point many respondents thought important enough to mention within their incident (n=12). Respondents also considered timeliness an important factor when using OTC medicine, that starting a course of medicine when symptoms first appear may help alleviate symptoms quicker.

6.2.3 Theme: Alternative medicine (6 incidents)

The use of alternative medicine and/or home remedies was present within the CIT results. The examples below show one individual who used alternative medicine as a standalone treatment and another individual who used a home remedy in conjunction with an OTC medicine. In each instance the respondent deemed the alternative medicine successful.

6.2.3.1 Subtheme: Using alternative medicine/home remedies (6 incidents)*:*

> *Molluscum contagidsum* **successfully treated with essential oil (lemon balm)** *when GP prescription/advice failed'.*

> *'Recently had a cough (chesty/mucus). I purchased a syrup and using less frequently than instructed my cough cleared up rather quickly.* **This was alongside increased doses of chilli**. *I would not do anything different'.*

The respondent in the first example had used alternative medicine, in this case lemon balm, when it was felt that the GP had not provided an adequate cure or advice. A GP appointment was needed for this illness as it is a reportable disease. The second example uses what could be described as a home or dietary remedy. The respondent implies that the use of cough syrup and chilli helped clear the cough quite rapidly.

6.2.4 Theme: Do differently in future (83 incidents)

The survey asked respondents what they would do differently in future. The majority of respondents answered nothing differently or indicated that they would use OTC drugs. By responding 'nothing differently' there is an assumption that the individual would continue to use OTC medicines for that particular problem should it return and that they would use the same medicine. Respondents in the subtheme 'use OTC drugs' implied strongly or stated that they would in future continue to use these drugs or try OTC medicine before considering a doctors appointment.

6.2.4.1 Subtheme: Nothing differently (77 incidents):

> *Sore throat/flu like symptoms. I had flu-like symptoms and I got paracetamol over the counter. Following the instructions I took the tablets as prescribed and it worked quickly. It was effective because I took it before the symptoms became worse. **I wouldn't do anything differently.***

6.2.4.2 Subtheme: Use OTC drugs (6 incidents):

> *' Bad period cramps. Went to buy feminax brand supermarket no longer stocked. They informed me that co-codamol was the same thing, very pleased as was cheaper and had more tablets. **In future I would check ingredients of brand names against store options.'***

> *'I began a new job working with children, picked up a bad case of the flu. This turned into synositis . I went to the doctors but was recommended otc medicine. This cleared symptoms. **Go over the counter first before doctor.'***

The first example is an individual who would do nothing differently. They had judged the medicine taken, paracetamol, as effective. Additionally the medicine was taken according to instructions and in a timely method, before symptoms worsened and it worked rapidly. Therefore it is understandable that for flu like symptoms this individual would not wish or need to do anything differently.

The next example heavily insinuates using OTC medicines in future, even when their usual brand was no longer in stock and possibly discontinued. Because of this the respondent had to make a choice as to purchase another brand, which they did. There was also an element of widening their knowledge about own brand and branded medicines, something they would use to their benefit in the future. The third individual visits their GP who recommends that they use OTC medicine that cleared their symptoms prompting them to try OTC medicines in future prior to going to the GP.

6.3 CIT Question 2 (306 incidents)

Q2 Please identify a time when you unsuccessfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event? What did you do? What was the outcome or results in regard to what you did? What made this action ineffective? Would you do anything differently?
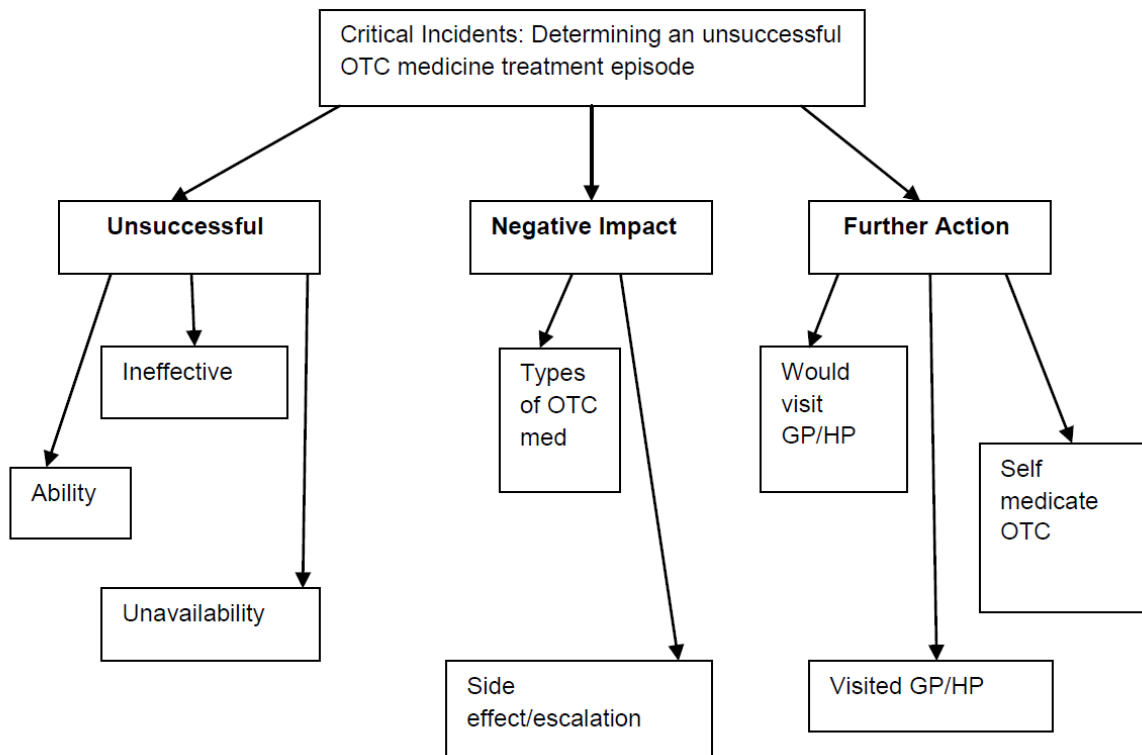
Figure 12 CIT 2

Table 49 CIT 2 Themes

Question	Theme	Subtheme	Subtheme Total (n)	Theme Total (n)
CIT 2	Unsuccessful	Ineffective	85	131
		Ability	42	
		Unavailability	4	
	Negative Impact	Side effect/escalation	23	98
		Types of OTC med	75	
	Further Action	Visited GP/HP	43	77
		Would visit GP/HP	18	
		Self medicate OTC	16	
Total				306

6.3.1 Theme: Unsuccessful (131 incidents):

The overriding theme in why individuals thought they had been unsuccessful in treating an illness with OTC drugs is that of ineffectiveness. Medicine had been purchased in accordance with signs and symptoms but did not have the desired effect.

6.3.1.1 Subtheme: Ineffective (85 incidents):

'*Suffering from a migraine, sleep and **painkillers (normal painkillers) did not cure migraine, had to wait days for migraine to clear,** buy migraine specific painkillers.*'

'*Chesty cough which had lasted seven days. **Bought over the counter cough medicine. Cough medicine is a waste of time and money (as told to me by the pharmacist), would not purchase again**. Had lemon and honey in hot water instead*'.

'*When I bought **cheap paracetamol they did not work***'.

The examples above show variations on the theme. The first example is a relatively clear cut incident where regular analgesics were purchased instead of migraine specific medication. The respondent acknowledges this as next time they would buy tablets specific to this. The second respondent was actually advised against buying cough medicine, but decided to proceed. Next time, however, they would try a home remedy. The third incident thinks that

the cause of the ineffectiveness was due to the quality of the drug, this is in direct opposition to individuals in question 1 who counted own brand/off patent cheaper medicines as effective as their more expensive counterparts.

6.3.1.2 Subtheme: Ability of the drug to treat illness (42 incidents):

Whilst still being perceived as ineffective, the ability of an OTC drug to treat certain ailments does need to be questioned.

> *'Neuralgia, took co-codamol, not effective, had to take prescription drugs (pregabalin)'.*

> *Scratched my eye. I purchased eye treatment which didn't work. Went back at pharmacist and they recommended specialist treatment by doctor. Went to accident and emergency. They provided treatment which worked. I would get specialist attention with eye treatments.*

Both of the above incidents are examples where there is no OTC drug available to provide treatment. Co-codamol whilst being a relatively strong and generally effective painkiller is in a different group of drugs (analgesics) than the prescription only drug pregabalin (anticonvulsants), which is used partly for various neuropathic pain and types of neuralgia. The last example is beyond the scope of any over the counter medicine and as directed by the pharmacist in definite need of immediate specialist medical attention.

6.3.1.3 Subtheme Unavailability of drug (4 incidents):

These two incidents document experiences by the respondents when they had difficulty or were unsuccessful in obtaining OTC medicines.

> *'I was on holiday in Wales over a bank holiday, my son of 18 months developed conjunctivitis. **The boots pharmacy refused to give eye drops as he was too young** and it was 28 miles to the nearest A&E that was open. As he had the problem before, I ended up getting my husband to lie and ask for eye drops for himself as I couldn't let my son be in discomfort until we saw a doctor.'*

> *'Tried to buy calpol for children, and 2 small boxes of paracetamol for adults when we all had colds and supermarket wouldn't sell that number of paracetamol containing products – disappointing as I have a large family and we needed that amount'.*

The first example presents this individual with a dilemma – a bank holiday, when medical services are often restricted and busy, an A&E department which is a distance away and a

young child who was suffering from an illness which the parent had in the past treated. The medicine was eventually obtained as the parent judged that this was the preferable option to letting the child be in discomfort until a doctor's appointment could be made. Both examples appear to be purely legislative. Restrictions on the amount of pain killers than can be purchased in one transaction apply to all stockists on the high street, the exception to this is when these drugs are bought on prescription. In regard to the eye drops, it could be the case that without a prescription they are not licensed for young children or that guidelines for suitability had changed since the respondent had last used the product.

6.3.2 Theme: Negative impact

Negative impacts were reported. These included side effects or escalation of symptoms and medicine that did not provide effective symptom relief.

6.3.2.1 Subtheme: Misdiagnosis/mistake/escalation and side effects (23 incidents)*:*

Misdiagnosis, mistakes and an escalation of the illness often underpin why a treatment is unsuccessful.

> *'Kidney stones – **misdiagnosed by GP and advised to take over the counter medication**. Went to A&E after 1 week and given effective treatment. As over the counter did not work. Wouldn't go to a walk in centre again!'*

> *' Bought treatment for thrush at supermarket chemist. **The treatment was ineffective as I had made the wrong diagnosis, so I ended up going to the GP**. I would go to the GP if I had the same situation again'.*

> *'**Tried cough medicine. No effect on condition, attended GP. Viral bronchitis diagnosed**, OTC drugs not available to treat infection. **Should have attended GP earlier rather than trying to self treat'.***

> *'I had problems breathing, was very tired, thought that I had a heavy cough. Used cough medicine, temperature control, vics vapour rub. Small amount of relief. **Undiagnosed pneumonia.** Go to the doctor sooner'.*

> *'Urinary infection, bought over the counter treatment for cystitis. Not effective, also using paracetamol for the pain. **Ended up in hospital with a serious kidney infection**. Will go to GP more promptly if ever same symptoms occur'.*

The first two incidents are evidence of misdiagnosis, one by a health professional and the second by self-diagnosis. The first example is also a case where an OTC drug does not have the ability to treat that specific illness. It is unclear in the third example who was responsible for the diagnosis but the respondent feels that it was a mistake trying to self treat

and that they should have visited the GP earlier. All examples, except the second, show how an illness can escalate. The respondents have reacted to signs and symptoms and purchased what they thought was the correct medicine for what they considered it to be, rather minor incidents. This also provides an illustration of how in the early stages of an illness the signs and symptoms can mimic something less serious but can worsen rapidly and may have a different pathology than the illness that was originally thought needed to be treated.

> '*I had a really bad pain in my back. I went to supermarket pharmacy and they recommended cobrifen, its codeine and ibuprofen.* **The next morning when I woke up my eyes were swollen. I ended up going to the doctors, he said I had had a reaction to them.** *I will not buy these again'.*

> '*I once had the green nurofen or the orange ones!* **And there was a manufacturing problem they had no letter N printed and I felt they were too strong for me too! I felt dizzy and fainty.** *I've stopped taking them now!'*

Both instances refer to side effects thought to be caused by analgesics, the first being a reaction to the drug, the second person felt dizzy and faint and makes reference to what they considered to be a manufacturing problem. Unsurprisingly, both individuals have stopped using these particular medicines.

6.3.2.2 Subtheme: Type of OTC medicines used unsuccessfully (75 incidents).

When describing an experience where an ailment was not successfully treated, respondents often referred to the type of medicine or brand they had used.

> '**With IBS it made it worse. I tried all the over the counter drugs to reduce the pain and bloating I had, but it just didn't work. It would sometimes make it worse'.**

The types of medicine included IBS drugs, pain killers including cold remedies, decongestants, cough medicine, verucca treatments, herbal sleeping tablets, antacids, anti-fungals, migraine treatments and antihistamines. One of the main types of OTC medicine where respondents felt the problem was treated unsuccessfully was with UTI's, with the respondents having to visit their GP for antibiotics.

6.3.3 Theme: Further action/outcome (77 incidents)

Individuals that commented on any further action or the outcome of their experience could be categorised into three groups. The first two groups – visited GP/HP (healthcare practitioner) /needed prescription and would visit GP were the predominant categories.

6.3.3.1 Subtheme Visited GP/HP/needed prescription (43 incidents):

'*UTI – tried sachets for cystitis but didn't work.* **Had to see my GP** *for antibiotics'.*

6.3.3.2 Subtheme Would visit GP (18 incidents):

'*Yeast infection, bought canestan combi, mild relief but needed stronger antibiotics,* **go to Dr first'.**

6.3.3.3 Subtheme Self medicate OTC (16 incidents):

'*Bought cough mixture for son – cough got worse. Visited GP who prescribed antibiotics.* **Would do the same as I wouldn't take my son to GP with every cough**!'.

The first example is typical of many respondents' experiences, an OTC medicine was not effective therefore further help from a medical professional was sought. The reason for seeking further medical help was to obtain prescription drugs, generally antibiotics. The second category represents those who tried OTC medicine but did not consider them to be effective and would if faced with this health problem again go to the doctor in the first instance. In essence, they would not be willing to self-treat again. The final category, with the least incidents, represent respondents who did not find the medication effective but realise the need and would be willing to self-treat with OTC drugs as a first line action.

6.4 CIT Question 3 (331 incidents)

Q3 Please identify a time when you successfully gained information about a health condition. What were the circumstances leading to the event? Where did you search? How did you search? What was the outcome or result in regard to what you did? What made this action effective? Would you do anything differently?
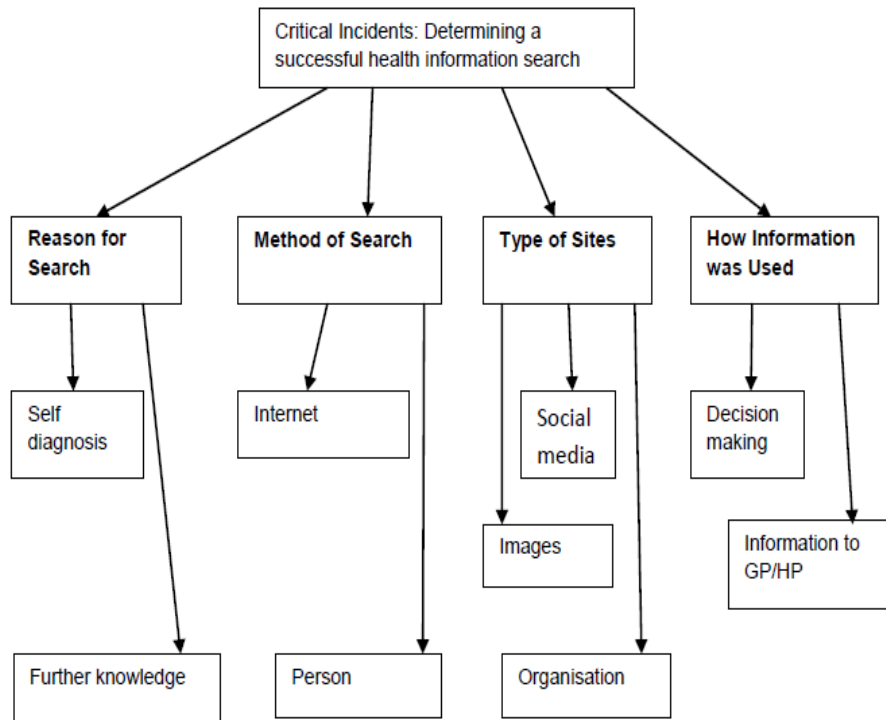

Figure 13 CIT 3

Table 51   CIT 3

Question	Theme	Subtheme	Subtheme Total (n)	Theme Total (n)
CIT 3	**Reason for Search**	Self Diagnosis	19	**71**
		Further Knowledge	52	
	Method of Search	Internet	114	**146**
		Person	32	
	Type of Sites	Organisation	45	**65**
		Social Media	13	
		Images	7	
	How Information was Used	Decision making	34	**49**
		Information to GP/HP	15	
Total				**331**

6.4.1 Theme: Reason for search (71incidents)

When searching for health related information respondents are categorised as searching for a diagnosis or searching for further information about an existing illness. Self diagnosis is defined within this literature as researching signs and/or symptoms of an illness or injury without the initial inclusion of a health care professional for themselves or others.

6.4.1.1 Subtheme: Self diagnosis (19 incidents):

 *'Son and daughter – both suffered with feet and hands turning purple. **Searched online, symptoms lead to raynards disease**, confirmed by specialist following referral from GP.'*

*'**I recently diagnosed myself correctly with superficial thrombophlebitis**. I just googled vein thrombosis. I then checked with GP who prescribed anti-inflammatories and antibiotics'.*

6.4.1.2 Subtheme: Further knowledge of condition (52 incidents)*:*

 *Pain in my knee. Doctor suggest its sport injury. **Wanted more information about it. On Google, NHS website helped and some others. Better understanding about my problem.** No.'*

*'**To learn more about an eye problem (macular degeneration) which my mother had been diagnosed with**. Probably did a google search, then picked website that looked most 'official'. **I didn't take any actions later but felt better informed**. Would always be very careful about source of information I used and make sure that it was a reputable source. (But then I am a librarian!)'*.

The first two examples illustrate individuals who have been successful when self-diagnosing, in both instances via the internet. Again, both examples have confirmed their self diagnosis with a doctor, possibly because the illnesses were only treatable with prescription medicine and the GP provides the gateway to this, as well as referrals to specialised care. Both examples of respondents who looked for further knowledge of a condition suggest that they were successful due to expressing that they had gained better understanding about a problem and felt better informed. Again, both of these respondents had gained information via the internet. It would seem that neither of the respondents acted on the information they had found in any practical manner, but were content to just further their knowledge.

6.4.2 Theme: Method of search (146 incidents)

The internet was the main source of information regarding health and medicine for respondents, followed by information gained in person, such as the GP, colleague or a family member.

6.4.2.1 Subtheme: Internet (114 incidents incidents):

 *' **Internet**, google, more info, able to gain more info than GP able to give in time available, no'.*

6.4.2.2 Subtheme: Person (GP/colleague/family etc) (32 incidents):

 *'**All the information I get is from my GP**. And thats how I intend to continue receiving information re my health'.*

*'**I regularly learn health information, both general and specific to myself from my incredibly knowledgeable partner. She's great. If she doesn't have the answer I'd go to a pharmacist or my GP. The internet is not really a place I instinctively go to'.***

The first example uses the internet as a source for information. The respondent states that by doing so they can gain more information that the GP can offer in the time available. Whilst the internet is a popular source for gaining health information other respondents were less enthusiastic. Responses varied from being seemingly anti-internet and seemingly unwilling to change search methods, with their intention to continue to use the GP as their information source, to using a pharmacy because it was an easier option. The third example differs, as this person relies on their partner for information, if their partner could not provide this, they would then ask a health professional.

6.4.3 Theme: Type of sites searched (65 incidents)

Some respondents, when describing an incident, named a specific site or type of site, rather than 'googling it' or 'internet search'. This is not to say they did not find this site without googling key words, or that they specifically searched for this site. The key sites identified were organisational, such as the NHS or charities and social media. Social media is defined in this context as sites such as Facebook or websites that contain discussion forums.

6.4.3.1 Subtheme: Organisation site (NHS, charity) (45 incidents) :

> *'Information for pre diabetes for family member. **Looked on NHS websites and diabetes UK.** Information received around what it means and healthy lifestyle info. Gave info to family member'.*

> *'Daughters skin condition, **NHS direct**, looked at images, successfully diagnosed: ringworm. Avoided GP appointment, treated using antifungal cream from pharmacy. No'.*

6.4.3.2 Subtheme: Social media (13 incidents):

> *' **I posted on a group forum on facebook called Emma's diary requesting information about my sons health** and was provided information of possibilities, it could be, and was advised to ring his HV (Health Visitor) or GP of which I did and got the info I needed.'*

> *'When trying to diagnose a re-occurring, month after month, mouth ulcer. On this occasion found Dr a little unhelpful. **Search internet – various forums to get other people experiences/advice.** Used an over the counter medicine. Treated problem effectively.'*

> *'**Information re: molloscum obtained from a response by another user to a question posted.** No other website had ever mentioned this treatment, so it was a*

lucky find. I also ordered the essential oil from the alternative health store recommended and the transaction was very smooth.'

6.4.3.3 Subtheme: Images (7 incidents).

*' Son sent home with suspected slap cheek syndrome by childminder. **I checked photos of this on the NHS website** and was satisfied that he didn't have the condition so I sent him to school confidently the next day'.*

NHS Direct online and websites belonging to charitable organisations featured heavily in the incidents reported by respondents who considered their search to be successful. Respondents not only used textual information but also used images to further inform themselves about an illness. Images proved to be useful for respondents in terms of dermatological diseases, especially when researching children's skin rashes. Social media websites were also used by individuals. One respondent contacted a Facebook group to request information. The second example of social media use concerns an individual who used the internet after they found their initial source of information unsuccessful. From reading about other people's experiences on various forums they were able to successfully treat the problem effectively. The third example of social media also describes success in treating an illness. Both of the latter examples illustrate a passive use of social networking and forums where the information seeker reads questions and answers posted by other users, rather than actively participating on the thread.

6.4.4 Theme: How information was used (49 incidents)

The earlier theme Reason for Search described two distinct reasons why respondents searched for health information – self diagnosis and further information. The examples of individuals who searched for further knowledge of a health condition were content for just that, to further their knowledge. Respondents included in this theme used the information they had received to provide a basis for decision making. The theme how information was used also encompassed how an individual further communicated or utilised knowledge with health professionals.

6.4.4.1 Subtheme: Decision making (34 incidents):

*'Acute pain in my shoulder came on suddenly for no reason. Searched wicky and questions and answers. Then went to my GP. **Internet search made me aware that I should seek help from my GP**. I would do the same again.*

*' Following the late stillbirth of my 2nd daughter, I was more conscious about all ailments when pregnant again. I suffered a great deal of itchiness which was brought to my attention could be a symptom of obstetric cholestasis. **Following internet***

research, I understood the potential seriousness of the condition and went to my GP who arranged regular blood tests for the duration of my pregnancy'.

*'Used NHS direct after child hit head falling from height less than her own. Cycling accident. **Information was clear and symptoms did not cause alarm or prompt recommendation to go to casualty**. It was effective due to clear questions asked online by the website. Would do same again if in doubt'.*

The first three examples reflect incidents in which the respondent has used information to inform the decision making process. In these cases the decision was the necessity to seek further medical intervention or not. The first example uses questions and answers found on a social networking site, in this case a wiki which prompted further medical attention. In the second incident the respondent describes her prior experience and how this affected her in terms of decision making. Due to her prior experience she researches ailments that are pregnancy related on the internet, which prompts her to contact her GP, ensuring that her pregnancy is well supported. The third example does not decide to involve further medical care. After using an organisational website and following a decision support pathway which questions signs, symptoms and circumstances, the respondent is confident that no further action needs to be taken.

6.4.4.2 Subtheme: Information to GP/HP (15 incidents):

The above theme discussed how the information is used in decision making, this theme details how the information is used when communicating with medical professionals.

' Placenta previa. *I conducted very comprehensive searches and accessed medical publications (articles) online **which I used to INFORM the doctors at the hospital (not many of whom knew much or enough about the risks and about the procedures needed – some were newly qualified).** The outcome was that I persuaded doctor to accept the recommendations in the studies and as a consequence my remaining pregnancy was well supported. (My daughter has cerebral palsy because of the problems caused by placenta previa, so it was justifiable to be so concerned).'*

*'**All I can say is that sometimes you arm yourself with vital knowledge, in my case net result was that I was given a tablet described as the best for hypertrabeculation (thinning of the heart wall)**. I do observe you can reach a wrong conclusion just by wrong wording or no's or words in wrong order which could be dangerous and lead to anxiety and misdiagnosis'.*

*'**Used the internet for trouble shooting questions I wanted to ask my doctor.** Still went to the doctor and asked the same questions. I felt I knew what I was talking about even when jargon was being used by the doctor to answer my questions. I also knew what options to treatment I had. I wouldn't change anything'.*

> *'Had a rash on skin. **Had a diagnosis from doctor, typed name of rash into google and various sites confirmed doctors diagnosis'.***

The first three examples provide evidence of how the individual has evolved into the expert patient. In the first example the respondent has researched the condition, driven by a prior experience and taken the research to the doctors at the hospital to inform them, ensuring the pregnancy was supported. It would seem from the incident reported that the respondent felt that they knew more about the condition than some of the medical professionals, who were newly qualified. The second respondent describes 'arming themselves with vital knowledge'. Again, this respondent has thoroughly researched their treatment options regarding the medicine they wanted to be prescribed as it was described as the best for that condition and understandably, did not want another drug. The third incident involves an individual who wants to maximise the time in a doctor's appointment, by using trouble shooting questions. The respondent felt the information helped to increase their knowledge and understanding in regard to useful questioning, medical terminology and treatment options. All three of the examples had used research to ensure they were given treatment that they considered suitable for themselves. The last example shows how information can be used in a different context, in this case the doctor gave the diagnosis but the respondent decided to research this to confirm the diagnosis.

6.5 CIT Question 4 (54 incidents)

Q4 Please identify a time when you were unsuccessful in gaining information about a health condition.

What were the circumstances leading to the event? Where did you search? How did you search? What was the outcome or result in regard to what you did? What made this action ineffective? Would you do anything differently?

Figure 14 CIT 4

160
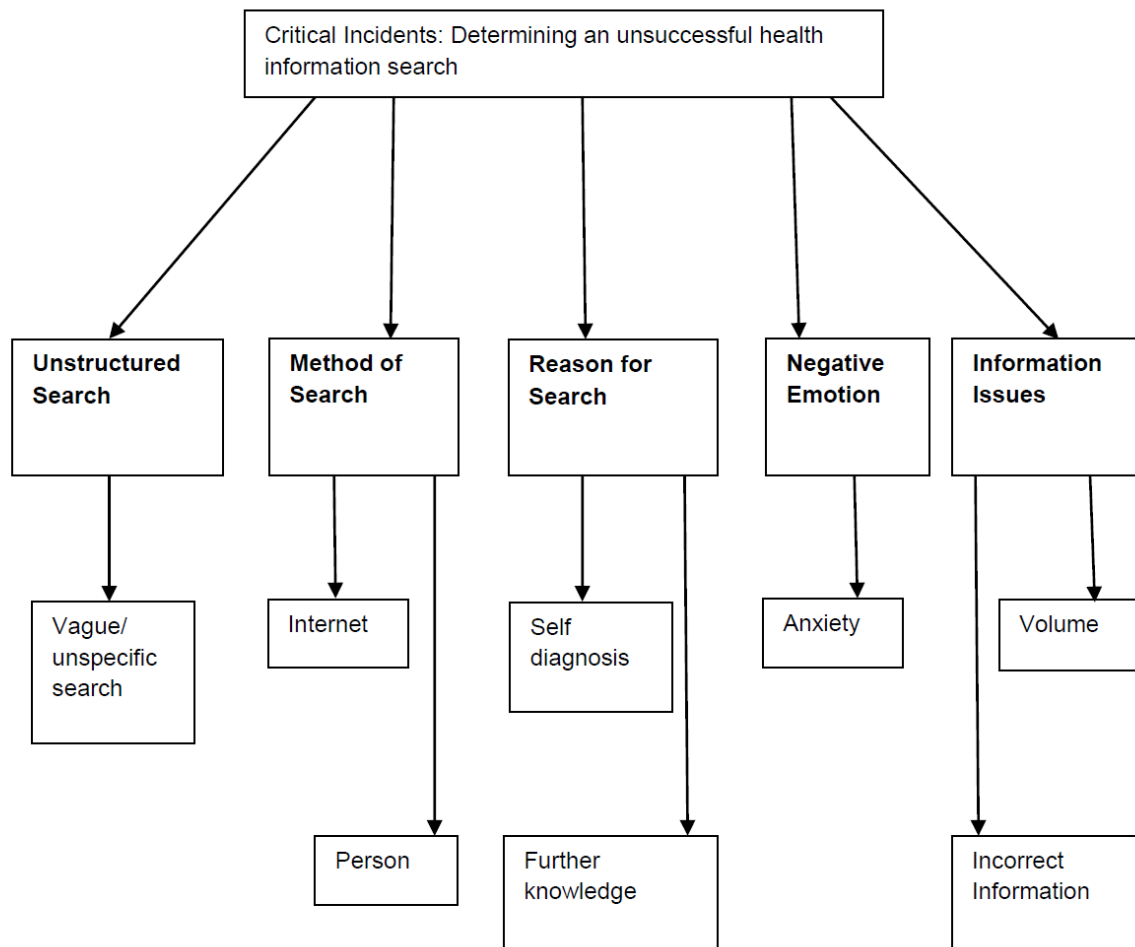
Table 52   CIT 4

Question	Theme	Subtheme	Subtheme Total (n)	Theme Total (n)
CIT 4	**Unstructured search**	Vague/unspecific search	8	**8**
	Method of search	Internet	16	**20**
		Person	4	
	Reason for search	Self diagnosis	11	**18**
		Further Knowledge	7	
	Negative emotion	Anxiety	3	**3**
	Information Issues	Volume	3	**5**
		Incorrect Information	2	
Total				**54**

6.5.1 Theme: Unstructured search (8 incidents)

Respondents who considered their health information search to be unsuccessful often used very broad or ambiguous search terms.

6.5.1.1 Subtheme Vague/unspecific search strategy (8 incidents):

> *'Circumstances: symptoms for a few days, not sure what. Where/how: googled, followed links, also searched for research papers. **Outcome/result: not really helpful. Ineffective because: symptoms too vague/ too many possible causes.** Do anything differently: Not really in this case as the symptoms disappeared fairly quickly, otherwise see GP sooner.'*

> *'Infrequent menstrual periods. Searched google, chose NHS site. **Area was too vast to pinpoint problem. This condition was symptom of many health problems.'***

Both of the examples describe the reasons for the search being ineffective because of vague symptoms and vast areas of medical information. This may in part be due to many illnesses presenting, certainly initially, with the same signs and symptoms, but also due to user expectation of the search engine. It would seem that the user was unsure of what keywords to use 'symptoms for a few days, not sure what' or how to narrow down search results 'area was too vast to pinpoint problem'. From these examples it could be inferred that respondents

expect a search engine to be more intuitive than it actually is and a better outcome may be achieved via a more strategic search method.

6.5.2 Theme Method of information search (20 incidents)

The methods used for information searching did not differ from those who were successful in finding health information, namely using the internet or gaining information from other people including healthcare professionals. Internet searching was categorised into two groups, specified health websites and general searching, 'googling'.

6.5.2.1 Subtheme: Internet (16 incidents):

' *Neck pain, **googled neck pain,** recommended chiropractor but I don't want to go to one, don't know.'*

*'I had pains in my legs when pregnant but could not self diagnose either via **NHS websites** or by general googling. A physio told what was wrong – I would still look online first in the future.*

6.5.2.2 Subtheme Person (4 incidents):

*'Little one had spots. **Doctors didn't know what it was**. NHS and other websites but couldn't find the answer. My mother knew about the disease better and she treated it as well.'*

The first example of why an internet search was not successful was because the respondent googled their problem but did not like the outcome as it was not deemed an agreeable solution. The second used health specific sites and general googling but could not self diagnose, perhaps due to a poor search strategy. The final example used a combination of health professionals and the internet to no avail, it was a relative who eventually provided the diagnosis and treatment of the illness.

6.5.3 Theme: Reason for search (18 incidents).

There are two distinct categories for searching health information. As in question three, successfully gaining information, the categories are self diagnosis and further knowledge.

6.5.3.1 Subtheme: Self diagnosis (11 incidents):

***Tried to research daughters symptoms**, too many varying diagnosis for the symptoms so unsuccessful and confusing and worrying. Go to GP rather than try to research.*

6.5.3.2 Subtheme: Further knowledge (7 incidents):

> *'I was pregnant when child had scarlet fever and couldn't find if I was likely to get it too. Online.'*

Again respondents in both categories were unsuccessful, the first respondent stating that there were too many varying diagnoses for the symptoms. The second respondent could not find the specific information they were searching for – the transmission of scarlet fever. It is possible that the failure to gain this information is due again to a poor search strategy and in the second example a lack of understanding of the literature.

6.5.4 Theme: Negative emotion (3 incidents):

The failure to successfully search for health information can have a far reaching negative outcome emotionally for some individuals.

6.5.4.1 Subtheme: Anxiety (3 incidents):

> *Tried to learn more about childhood eczema because my grandson is badly affected. Google search for reputable sites.* **Information and advice too muddling. Too many opinions about what may cause it and what may help. Felt bewildered and unable to help.** *Worry that he is not getting sufficient treatment and advice.'*

This individual was trying to further their knowledge about an ailment their grandson was suffering from. Far from being assured, even though they searched sites they regarded as reputable, the search actually caused them to be worried. The amount of information and conflicting findings caused them to feel bewildered and muddled in terms of causes and treatments. They were left feeling anxious that the grandson was not getting sufficient treatment or advice for the eczema.

6.5.5 Theme: Information Issues (5 incidents)

Information issues took the form of too much information, to little information and information which was incorrect.

6.5.5.1 Subtheme: Volume of information (3 incidents).

> *' In connection with my brothers illness I attempted to find out about a drug called Zemeter (probably misspelt)* **but could find very little information** *(and yes then it was spelt correctly). I assumed that it was a fairly new drug and that was why there was little information. Again, under the same circumstances I would follow the same procedure. I cannot think of any occasion where I have not been able to find the information I require from healthcare professionals.'*

*'Google/internet, symptoms too general – **too much info to limit down to anything useful.'***

6.5.5.2 Subtheme: Incorrect information (2 incidents):

*'I've previously searched for information regarding my own health using online symptoms checkers and they been **so wrong its unbelievable.'***

The first example deals with trying to find information about a drug called Zometa, which at the time of the search was according to the respondent a relatively new therapy, which is used for treating cancer, specifically malignant melanoma, a disease which is classified as a rare genetic illness. The combination of the newness of the therapy and the rarity of the illness may have had an impact on the amount of information available. The other end of the scale is when there is too much information, in this case where symptoms are described as being general, therefore the search results will be generalised causing problems when trying to limit search results to potentially useful information. Both examples illustrate how the respondent feels the volume of information can hinder their search for information. Occasionally it is not the amount of information but the quality of the information. The respondent in the third example had used a symptom checker and found the outcome to be incorrect.

7 Discussion

In conjunction with the aims and objectives of the research the discussion will begin with how the consumer views OTC medicine in terms of their attitudes and opinions to these drugs. This includes reporting the consumer use, purchase and frequency of purchase as well as the importance of branded drug names. Attitudes and opinions towards commonly held beliefs that are concerned with OTC medicines are also discussed. It is intended that this section of the discussion will provide an insight into how the consumer uses and thinks about this type of medicine.

7.1 General Health and OTC Medicine Use

Survey respondents were first asked how they viewed their general health status ranging from extremely good to extremely poor. In keeping with previous research PAGB (2005, 1997) the majority of individuals considered themselves to be in good health. The question was entirely subjective as one persons concept of good health may differ from another individual's definition of good health. When asked if there were any ongoing health issues one third of respondents did say yes they did have ongoing issues. Whilst the majority, two thirds (68%), did not have any ongoing health issues, a third reported health issues that varied greatly in terms of seriousness, pathophysiology and comorbidity.

Over-whelmingly the individuals surveyed had used OTC pain killers, cold/flu remedies, cough medicine or allergy medicines including complementary/alternative medicines in the last year (90%) and agreed to an extent that they were effective (92%). This result was not surprising for a number of reasons. The OTC market is valued at £2.4 billion, with, in 2009, 990 million packets of OTC products being sold, rising to £2.5 billion in 2013 (PAGB 2010c, PAGB 2015a). The types of OTC medicine above are the most popular medication purchased. Painkillers had a total worth of £542 million rising to £544 million in 2013 and the cough and cold medicine market was valued at £437.2 million, actually decreasing slightly in 2013 to £415 million. Reasons for the popularity of this type of medicine include the availability of OTC drugs, they are no longer the sole domain of the pharmacy, being available at supermarkets, local shops, bargain stores, petrol stations, online and vending machines which maximises the convenience factor when purchasing these drugs. The reason for the slight decrease in the revenue for cough and cold medicine is not clear, it may be due to adverse media about the efficacy of cough medicines (Which?2013).

Where the type of drugs are concerned; analgesics, cough medicines, cold/flu remedies or allergy medicines it is interesting to consider that these groups of medicines are best sellers as they treat very common symptoms, but they also use similar ingredients. The active ingredients are often found within the differing groups. Codeine may be present in an analgesic but also used in cough medicines due to its antitussive properties (Bolser 2006). Paracetamol is ubiquitous, as an analgesic in its own right, combined with other analgesics – ibuprofen or codeine or used in flu/cold treatments where it may form part of the medication along with caffeine, nor-epinephrine or an antihistamine.

7.1.1 Price, Branding and Purchasing

Another factor is price. The OTC market is hugely competitive, not just between well known drug manufacturers producing patent drugs, but also in the off patent and own supermarket brands. Whilst the price of the drug can vary, depending on what it is used to treat, many of the off patent drugs are inexpensive. In terms of convenience the availability of differing OTC drugs is growing, with more being added to the OTC market every year (BMA 2005). Being able to purchase an OTC drug allows the consumer to treat themselves, at their point of need, without having the inconvenience of making a doctor's appointment, perhaps having to wait for an available appointment and in an increasingly 24hour culture the drug can be purchased at any time, generally at a less expensive cost than using a prescription. The consumer is also empowered as, unlike when using prescription medicine they have a choice in which brand or non branded medicine they wish to purchase. Generally the consumer considered OTC medicines to be reasonably priced (72%).

7.1.2 Frequency of Purchase

Frequency of purchasing OTC medicines correlates with using OTC medicines within the last year (Spearman 0.01 two tailed). It can be argued that the individuals surveyed are not only using OTC medicine, they are also actively purchasing them, again this is reflected in the market value of OTC medicine. The majority of respondents (50%) tended to purchase this type of drug every three months or on a monthly basis. What remains unclear is the reason why these products are bought on this timescale. There is a possibility that purchasing on a monthly basis could coincide with shopping on a monthly scale therefore underpinning the concept of convenience being a basis for purchase. It could mean that due to restrictions on package size, symptoms suffered and the type of drug purchased there is a

need to restock on a monthly or quarterly basis. Other respondents were more or less sporadic with their purchasing habits. This included every two weeks, to as and when needed, very rarely, when symptoms occurred or bulk buying allergy medication once a year, which suggests an insight into when the symptoms may start and how much medication may be needed. The findings suggest that there are two specific groups of consumer; those who purchase routinely, such as monthly, quarterly or every six months, or those who purchase on a more spontaneous basis – when needed, when the symptoms arise.

7.1.3 Proprietary versus Non-Proprietary

It is evident that the individuals surveyed used and purchased OTC drugs regardless of their perceived general health status and that the market is worth multi-billions of pounds, with certain drug groups contributing highly towards this. As mentioned above and within the literature review, OTC drugs are developed and marketed from the pharmaceutical companies, with branded drugs being sold by major pharmaceutical companies and off patent drugs being sold through other domains such as supermarket own brands. Whilst the worth of the market has been ascertained, it is, however, the consumer who can make their own choice on the importance of buying a branded drug when the non-proprietary counterpart is available.

Respondents were asked if buying a brand name of medicine was important and resoundingly the answer was no (71%). Nearly three quarter of those surveyed did not think it was an important factor in their decision to purchase a medicine. This is further reinforced when respondents are asked what influences their OTC medicine purchases. The main influences were price (56%), prior use (47%) and recommendation (33%), a brand name accounted for only 16% of those surveyed.

7.1.4 Purchase Environment

The majority of respondents (54%) purchased OTC medicine from the supermarket; the pharmacy (37%) was the second most popular place to purchase these products. The local shop/ petrol station only accounted for 6% of responses whilst buying online accounted for only 0.3%. There are a number of interesting factors within these results. There is a definite split between the types of shops used to buy this medicine. The popularity of the supermarket suggests convenience that OTC medicines are bought by the majority as a

grocery type commodity, perhaps with other shopping items that are non medical. The other branch of respondents tended to buy from the pharmacy, where traditionally, this was the only outlet for many OTC drugs. Respondents tended to be conservative in their choice of places to purchase these drugs, only one respondent stated that they mainly purchased OTC medicines online. There may be issues regarding trust when purchasing OTC drugs online, such as the counterfeit drugs, the quality of the drugs, giving personal information or payment security.

Briefly discussed above were the online buying habits in regards to medicines of the individuals surveyed. It was observed that traditional methods such as the supermarket or pharmacy were the preferred methods. Further questioning emphasised this point. When asked if buying OTC medicines online would be considered the majority (70%) responded negatively. Respondents were then asked if they would consider buying OTC medicines online which were not available in England, 79% responded that they would not. This correlated significantly (Spearman 0.01 level 2-tailed). Respondents were unwilling to buy OTC medicines online from abroad or from England. In regard to buying OTC medicines from abroad some of these issues may have been exacerbated, such as financial transactions, counterfeit drugs or having no real point of contact with the site from which it was purchased. Moreover it is also possible that there is a distrust of drugs which are not available due to licensing as OTC in the UK or England in terms of their safety and many people may be unwilling, if there is a negative effect, to explain this to their GP or primary care giver.

Apart from the trust issues when ordering medicine online, often OTC medicine is used to treat acute conditions, which may or may not be anticipated by the consumer. The individual who is suffering from an acute condition is unlikely to order online and wait for the purchase to be delivered; there is a need to gain relief from the symptoms in the shortest time possible. This also explains why the consumer would purchase OTC medicine from an outlet rather than wait for an appointment with the GP, even though the GP is seen to be the first and principal source of information and the act of visiting a GP fulfils the social and emotional aspect of a face to face consultation (Williams et al 2003). Purchasing medication from a pharmacy also allows the consumer to ask advice from the pharmacist adding the 'human' dimension and a readily available source of information at the point of purchase.

7.1.5 Side Effects and Adverse Events

The majority of respondents (87%) did not think they had any side effects which were caused by OTC medicine. A total of 5% did think they had experienced a side effect, whilst 7.5% did not know. It can be presumed that for the majority using OTC medicines are safe in terms of not causing side effects, some respondents did however remain uncertain if they had experienced a side effect that was due to this type of medicine. As discussed in the literature review the side effects or adverse can be many and varied in type and in severity, depending on the drug, the amount taken and any underlying conditions (Anekwe 2008, Frei 2010, Robinson et al 2010, Prescott et al 2009, Wazaify et al 2005a).

7.1.6 Consumer Confidence Using OTC Medicine Safely

Respondents were confident they could purchase OTC medicine for themselves and for others, results which correlated (Spearman 0.01 level 2-tailed). The results from the questions did vary slightly; more respondents did feel more confident in purchasing medication for themselves than purchasing for others. Only 0.6% of individuals thought of themselves as unconfident in purchasing for themselves and 7% felt unconfident in purchasing suitable medicines for others. The majority of individuals surveyed answered that they always read the instructions on OTC medicines and always followed the instructions. This also correlated at a significant level (Spearman 0.01 level 2-tailed). Most of the respondents claimed to strongly agree that they always read the instructions (41%) and agreed that they always read the instructions (37%). From the evidence it can be seen that the respondents of this survey always read the instructions for the OTC drug and that they adhere to the instructions using the drug concordantly.

7.1.7 Consumer Beliefs about OTC Medicine

The final section of questions in the first part of the survey aimed to gather information about the attitudes, opinions and beliefs of the respondents in terms of safety when taking OTC medicines, strength of these drugs and addiction through agreement/disagreement to phrases which have been designed to reflect common misconceptions about this group of medicines.

Individuals were asked to state if OTC medicines are not as powerful as their prescription counterparts. Respondents mainly agreed with the statement (50%), with 23% remaining

neutral. The response is mainly incorrect, though this depends on the specific drug, most medicines available OTC including those who are in the P category, are often as strong as their prescription counterparts. This is an area in which public perception is in agreement with a common misconception about the strength of these drugs. Many prescription drugs such as paracetamol have always been the same strength as OTC drugs. Ibuprofen was often sold over the counter as a less strong preparation, various strengths were prescribed, the same was true of codeine (BNF 2005, PAGB 2010b). More recently there has been addition to the OTC market of analgesics that describe themselves are more powerful and faster acting than those which have been traditionally available. These newly available analgesics and newly available compound medications are as strong as those available on prescription and the same drug however it is purchased, on or off prescription, will have the same side effects if abused.

When asked if they agreed with the statement that OTC medicines do not react with other medicines the majority of respondents disagreed or strongly disagreed (65%), although a lot of missing data was recorded with this question (n=75 missing). It was also asked if OTC medicines are not always safe to use, with just of half of individuals surveyed (53%) agreeing to some extent with this statement, 18% remaining neutral. With that statement OTC drugs cannot be addictive, 78% disagreed. Overall, the majority of respondents were aware of need to read and act on the instructions included in these drugs, they were also aware of some of the more common misconceptions surrounding these medicines, such as interaction with other drugs or the suitability of the medicines for everyone and the possibility of addiction. The fact that respondents did not think or believe that OTC drugs can and are as strong as their prescription counterparts does strongly suggest a gap in knowledge within this area. There is also potential for further education in OTC medicine in terms of when they are safe to use and possible drug interactions.

7.1.8 Additions to the OTC Market

The OTC market is now swiftly moving with more drugs becoming available to purchase off prescription. As discussed in the literature review, this was not always the case. The shift in paradigm to increase the number of medicines available is recently modern. Certainly, after World War II and even up to the 1990s there was little choice in what could be purchased OTC. Mainly this consisted of paracetamol, ibuprofen, aspirin, alka-seltzer, antacids, cough medicines etc, more recently this expanded to include some antihistamines. Now the consumer is faced with an array of patent and off patent OTC drugs including strong analgesics, asthma inhalers and statins. The age of respondents could have influenced

opinions towards additions to the OTC market. Most respondents (45%) were aged 35 – 44, the second highest category was ages 45 – 54 (23%), with 20% belonging to the 25 – 34 of age category. It is, therefore, possible that the respondents of this survey are used to a very limited OTC market, before recently having to rely on a GP to prescribe medicines which are now available off prescription, they have been unaware of the changes or not seen a need to further their knowledge in regards to the strength of OTC drugs.

7.1.9 Availability of new OTC Drugs

New drugs being are becoming available OTC on a frequent basis (BMA 2005). It is also evident from the individuals surveyed that the vast majority used and purchased this type of medicine, especially those in the best selling groups. Respondents also displayed high levels of confidence in their ability to purchase these drugs and displayed remarkable levels of adherence to the instructions, findings which correlated at significant levels. With the high levels of use and the individuals perceived own confidence in the results, when asked if there are not enough OTC medicines available, were unexpected. Individuals were ambivalent or uncertain about the addition of drugs to the OTC market and many respondents (34%) remained neutral.

7.2 Health Information Behaviour

The second part of the discussion is concerned with the attitudes, opinions and beliefs of the consumer with regard to their health information behaviour in accordance with the aims and objectives of the study, to determine consumer preferences for health information sources. This includes how they search for information, why they search and how they value the information gained. There is an emphasis on web based information searching and behaviour although other methods of information have been included.

7.2.1 Health Information Sources

Historically the main source of health information was the doctor and other health care professionals. When asked what was the main source of health information the GP remained the most utilised resource (39%). The internet was the second resource for health information (24%), followed by the pharmacist (18%). Friends and family, nurses, the media and social media were not frequently used as the main source of health information. There

are a number of reasons why the GP is still the main source of health information. Firstly, the GP provides the human aspect of health care communication, which is an important factor for many as is evident from the literature (Trotter & Morgan 2008). Not only does the GP fulfil the human communication role, they are an expert in their field, they are there to be consulted and expected to provide a diagnosis, where possible and suggest a source of treatment. Secondly the GP is a gatekeeper. The GP can prescribe and advise about medications which the consumer may then purchase with confidence as they know they are getting the correct drugs. The GP is also gatekeeper to other services and agencies in which they have the power to refer the patient. Economic reasons could also be part of the reason that the GP remains the main source of health information. In England the NHS provides health and medical care for free, except for the prescription charge, enabling the consumer to visit the GP without fearing the impact this may have on them financially.

7.2.2 Health Information and the Internet

The internet is now the second main source of health information, rising above that of the pharmacist. Over a period of time starting in the mid 1990s (Spink 2010) internet use has become more prolific. Many households have a computer, tablet or smart phone and are equipped with broadband and wifi. Internet use forms a part of many individuals lives either work or socially and many buildings now provide wifi, so it is possible to link to the internet in different environments, which was historically not always possible. There is a wealth of health and medical information available on the internet, which may differ in quality and in target audience. Healthcare organisations and charities are highly visible online, journals are available, discussions, blogs and forums are all present and cover a huge range of medical issues. The consumer can use these online resources to empower themselves through gaining knowledge of health care issues in a timely and convenient manner. Timeliness is another advantage of the internet. The consumer may want to gain information but this may be governed by the fact that they cannot contact the GP or pharmacist because it is out of opening hours, or it may not be convenient for the consumer. The concept of timeliness also includes how people want to gather information. The internet allows the consumer to spend as much or little time as they prefer searching for information, information can be cross referenced and they can choose the level and depth of information suited to their needs.

7.2.3 Consumer Choice of Health Website

It was asked if the internet had been used in the last year to search for health information. The majority of respondents (80% n=320) responded that they had used the internet in the last year to search for this type of information. When asked what type of health information had been searched for on the internet the main category was diagnosis or presenting symptoms, general health/wellbeing and information about an ongoing issue were also popular categories where information was sought.

Types of sites from where information was sought were overwhelmingly healthcare organisations (76%), followed by healthcare charities and personal blogs/forums, 16% respectively. Drug companies (5%) and retail (2%) were the least searched sites. Healthcare organisations such as the NHS are widely recognised and have a reputation through their evidence based information, brand recognition and an establishment, in the population of England as the main provider of healthcare, therefore becoming an immediately trusted resource. Healthcare charities are viewed as being informed and, by being a charity, viewed as being trustworthy and altruistic. The personal blog or forum provides a more personal aspect, it is not governed by some of the aspects that the above sources are, such as only providing evidence based information, it is more subjective, more human and often conveys a person's journey through a health issue. This, in itself, allows a degree of communication through a forum, or perceived communication in that there can be a degree of empathy, even unspoken, to what the author and the reader are experiencing. As a blog or forum is often a personal communication, the author or commentator are not under the constraints that other professional health organisations are and can provide information that is not evidence based or may personally answer questions and perhaps provide support.

Whilst respondents were seemingly advocating their use of these groups, websites provided by drug manufacturers and retails sites were rarely used to gain health information. This finding again supports existing literature (Powell et al 2011) that there tends to be a distrust of sites run by these types of companies, that they are not entirely altruistic or are judged to be not entirely non-biased. After all they manufacture and/or sell these products. Responses recorded in the 'other' category included specific websites such as NHS Direct, patient.com or Men's Health. Responses in this category also gave an insight to how online searches are conducted with answers, such as 'Google it, various via Google, Google, general searches, any and anything that comes up in the search but only UK sites'. This suggests that consumers have a naive or simplistic strategy to searching information, almost like a lucky dip generating random information. One respondent did include a description of their safety marker, only using UK sites.

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7.2.4 Characteristics of a Good Health Website

Participants were asked what they thought made a good health website the majority thought being easy to navigate was the most important factor (66%). Previous research has shown that ease of navigability is indeed an important factor for many users and it is in the interest of the site's host to provide this. A FAQs section (42%) was the second most important factor as it provides a quick, easy and concise guide to the query. A regularly updated site and site credentials were also listed as important factors. As discussed above, site credentials could include the name, such as NHS, which to many individuals is an instantly trustworthy organisation. A health website that included a forum was deemed less important with only 9% of participants citing this as a factor which makes a good health website.

The internet is often seen as a medium for interactivity, allowing individuals to communicate with relative ease, offer and share information about common factors in a private or public domain, often through the use of forums or blogs. Whilst only 9% of individuals surveyed thought that it was an important aspect of a health based website that it contained a forum, 16% stated that it was through the use of these and blogs that they gained online health information knowledge. To gain an insight into the popularity of online communication in regards to health respondents were asked if they had ever posted a request for health advice on the internet and if they had ever responded to another person's request for health advice on the internet. Seven percent of individuals surveyed had posted a request for health advice and 9% had responded to another person's request for health advice. Spearman's Correlation was significant (0.01 level 2-tailed), evidence that there is a relationship between individuals who request and respond to health information queries online.

Just over half of the individuals surveyed (56%) were confident that the information received via the internet was correct. The majority of those surveyed also stated that they tended to use the same websites to gain information (62%). There is direct evidence of the relationship between trusting the information and the use of the same websites using Pearson Chi-Square and a Spearman's rho for correlation (Spearman 0.01 level 2-tailed). This does not prove that the information received is actually medically correct, rather it points to the individual developing specific information behaviour traits. The respondent uses a website which they trust, this is determined by their own trust markers and/or they find the information useful and the site utilises what they determine makes a good health site. In further information searches they will tend to return to this site because of the traits the site provides. By employing this type of information behaviour, Zipf's model -The Principle of

Least Effort (1949) may be unwittingly initiated. This model is discussed in detail in the literature review and in a later chapter of the discussion.

7.2.5 Online Information Influences

Consumers are subjected to a plethora of OTC medicine adverts, which is a relatively new phenomenon. Adverts appear for these medicines in publications such as newspapers, magazines, TV based adverts and program sponsoring, in-store adverts and money off vouchers. The internet is not immune from this phenomenon, with online information about these drugs being prolific. This may take the form of recommendations for drugs from people who have used them successfully or unsuccessfully, sponsored links/adverts and following on social networking sites. However, when surveyed, over half of individuals (53%) agreed to various increments that the information received online did not influence their OTC medicine purchases. This maybe because the majority of people already are habitual in their purchases or loyal to a particular type/brand of drug or it is preferred not to stray too far from what is known to work, even if an alternative could be more beneficial.

7.2.6 Ease of Access to a GP

The internet, from the results of this study, is now the second source of health information, the GP being the first. Respondents were asked if the information gained online did not replace the information from a health professional, the majority of respondents (84%) did agree that this was the case, the information from a health professional would be of more importance than that gained online. Even so, individuals did still seek health information online. Reasons for this include: convenience in terms of time and geographical location, difficulty in getting a GP appointment, self-assessment of diagnosis and need for intervention, or triangulation of knowledge.

People often have busy lives with various commitments including work, they often also have unlimited internet access via computer or smart phone. Therefore whilst it may be inconvenient to make an appointment with a healthcare professional initially, signs and symptoms may be researched via the internet. It is also feasible that a person may be located at the time of need from a preferred or indeed any point of healthcare access, this also transcends to time of day or occasions such as public holidays when the only healthcare professional who may be available could be situated in the A&E unit and the condition does not warrant that level of intervention. GP appointments can be very difficult to

book, in terms of the process and the disruption to daily life and in some instances, be a number of days or a week in the future before there is a vacancy. In this respect the internet can allow consumers to research their symptoms and the medication available OTC and if it is suitable to self treat it can therefore negate the visit to the GP.

7.2.7 Types of Health Information Searched

Health information is often sought in diagnostic terms, the individual wants to make sense of the signs and symptoms they are experiencing and to label this. This can provide, through internet searches, the basis for their knowledge. Often signs and symptoms can be confusing and point to many different health conditions of differing severity. Whilst the internet can describe sign and symptoms and provide advice, on occasion a patient may need more invasive procedures such as blood tests to provide conclusive diagnosis of a health condition, which mainly lies within the domain of the health professional. Consumers however, use the information to arm themselves with knowledge. It is not uncommon for a patient to have made a self-diagnosis prior to a GP appointment, the triangulation occurs from the onset of symptoms and the internet research, the patient then is aware of what illness they may have and can visit the GP having more knowledge and confidence about their condition, which the GP may verify.

7.2.8 Trust Markers

Trust markers are evident where internet use is concerned, especially that in relation to health and medical advice. Whilst trust markers may differ from person to person and in terms of importance, there is literature supporting the importance of trust markers and what in general people consider as a trust marker (Sillence et al 2005, Sillence et al 2007). Often trust markers that can be easily checked are embedded in the site used; these are the privacy policy and site credentials. Results from the survey show that when asked to agree or disagree with the statement 'I do not always check the sites' privacy policy' the majority of respondents (62%) did agree. The same was also true when individuals were asked if they did not always check the sites' credentials (49%), a significant correlation was found between consumers' not always checking a sites' privacy policy and not always checking a sites' credentials (.000 significant at the 0.01 level 2-tailed). In terms of this study, it is an interesting result, the majority of respondents are rather cautious and in some respects quite well informed in terms of their online and health knowledge but choose to overlook easily

identifiable trust markers. This is more incredible when given the strength of the evidence between trusting online content and using the same websites is evident. It is, perhaps, plausible that seeing a well known and trusted organisation is itself enough to outweigh other trust markers that may be otherwise employed, or that the person is using a non-organisational site such as a chatroom, forum or blog which is free content and not under duress to the legislation that organisational websites are bound to.

7.3 Models and Frameworks for Self Care

Healthcare models and frameworks have been discussed in-depth within the literature review. These models have included models for self-care, information and human behaviour and patient models. The models and frameworks have evolved from the fields of sociology, medicine and health and information science. Some of the models and frameworks were developed in the 1950s, but remain relevant today, other models are more modern and have been developed to reflect the changes and challenges of healthcare and information today. It is the intention to discuss these models within this section of the discussion in regard to the specific findings of this study.

7.3.1 The Sick Role

Two of the older models are Talcott Parson's Sick Role (1951) and Zipf's Principle of Least Effort (1949). The former model classifies the patient as at a much lower social level than the doctor, the doctor is an expert on the patient and it is the patients role to understand this and when they are ill it is their responsibility to seek the help of the medical community, as a sick person is not a productive member of society. The model is authoritarian and paternalistic, inferring that the patient knows their place in the social hierarchy. The patient is to be cooperative, deferential, not questioning the doctor's decisions or making decision's of their own. The patient therefore has no autonomy in regards to their healthcare and the difference in power balance is very much evident.

Although the face of healthcare has changed rapidly and it is continuing to change, Parson's (1951) model continues to resonate in healthcare seeking behaviour. The majority of respondents have used the internet to search for health related information, but they also still rely heavily on the doctor. Whilst the information gained online is trusted, it does not replace that of the health professional. The GP remains the main source of health information, above any media based information sources and above human resources including professionals

such as the pharmacist or nurse. There is no evidence to suggest that the GP knows more, certainly about minor ailments than a trained pharmacist or nurse but the doctor or GP is still viewed as being at the top of the hierarchy and whilst individuals may gain information from the internet they look towards the GP to verify this.

7.3.2 The Principle of Least Effort and the Healthcare Consumer

Zipf's model, the Principle of Least Effort (1949) also came into being in the 1950s and like the model above is still relevant in this present day. A sociological model, it describes individuals as being habitual. Whilst often used in information, the model can be applied to many aspects of human behaviour. The model conveys the fact that people will choose the path of least resistance of effort using methods that have been utilised before and gained acceptable results. The underpinning factor is acceptable results, by changing various elements, even on a small scale the individual could gain better results, but convenience and time saving equates to a reliance on the easy and familiar. For instance people have habitual ways in purchasing OTC medicines, from where they purchase to how often and the majority are very against purchasing online. Taking the time to research a reputable online company could yield results and could save money, as could buy from a supermarket rather than a pharmacy or visa versa. By researching where to buy OTC medicines a consumer may find a better variety of drugs that are available or be able to gain advice on their purchases.

The area where this was particularly evident was within the health information behaviour questioning within the survey. The majority of people surveyed had a tendency to use the same sites. In effect the information gained may not be the best information available to that individual, through habit and a reliance on convenience the consumer may be denying themselves better more relevant information for their needs. The need for convenience was also evident when asked what makes a good website. The website needed to be easily navigated, so it can be presumed that a more difficult to navigate site would not be used as it is not time efficient. The second most popular category was a FAQs section, again convenient, easy to read and therefore time saving as it is a very structured part of a website consisting of short commonly asked questions and answers, behaviour which may also be equated with the Paradox of Choice framework (Bawden & Robinson 2008).

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7.3.3. Modern Day Self Care Models and Frameworks

The NHS has been under considerable pressure for some time, due to an increasing and aging population, with a longer life expectancy, models and frameworks have been developed to try and ease the pressure on the organisation. This has included to concept of the expert patient, an individual who is suffering from a long standing chronic illness, who has developed an insight into their condition and can manage it and make decisions such as the level of intervention may be needed. For example, would a doctor's appointment be a necessary course of action or would OTC medicines alleviate the symptoms? Another model is the campaign for Real Self Care, spearheaded by the PAGB and the Royal College of General Practitioners (PAGB 2010a). The aim of the model is to encourage the healthcare consumer to take more control over their health, therefore changing the culture of dependency on the NHS for minor ailments, allowing the NHS to work more effectively for those with more complex health needs. It is without doubt that there needs to be a change from a demand led culture, the Self Care Campaign (2010) emphasises this highlighting the catastrophic impact that dependency and a demand led culture is having on the NHS. A demand led and dependency culture is described as one in which common disturbances to health, such as coughs and colds, are accounting for nearly one fifth of the GPs' workload. This is having an impact on the GPs' time, when it could be spent treating people with more complex needs and a serious effect on NHS finances. The 21st century NHS needs to be sustainable and able to deal with consultations in primary care for complex care needs (Self Care Campaign 2010)

7.4 Overview: The Outlook for Self Care and the Healthcare Consumer

By adopting self care models, the future for self-care and a lessening of the burden on the NHS looks bright. But obstacles do remain in persuading the public to engage more with the self-help model. Most of the individuals surveyed were knowledgeable and confident in purchasing and using OTC medicines, except in one key area, it was a widely held belief the OTC medicines were not as strong as their prescription counterparts. A knowledge gap, that perhaps needs addressing, if consumers are to be more aware of considerations when using OTC drugs.

The NHS was conceived after the Second World War promising free healthcare to all, not in regard to their social standing or wealth. Prior to this individuals had to pay to consult a doctor, they had to make a decision if the presenting illness was worthy of the financial price to be paid (Jones 2008, Royal Pharmaceutical Society 2010). The GP was and still is the

gateway to health provision, often held in high esteem in their community, the GP was a respected figure. In effect Parson's Sick Role (1951) was perpetuated throughout the NHS. Whist there may have been some redress in the power balance between doctor and patient, such as GPs learning better communication skills, the public becoming more knowledgeable about health and lifestyle, the legacy of the doctor knows best and the concept of free healthcare for all lives on.

Whilst it is undoubtedly a positive step for self-care that consumers are using the internet for health information, demonstrating autonomy and patient empowerment in the methods utilised to seek health information, the internet is the second main source for information, the GP still remains the main source. As discussed above this had elements of the hierarchical model developed by Parsons and also elements of convenience or learned behaviour. England has a long standing culture of consulting the GP for reasons of varying severity, possibly stemming from when little was available in terms of OTC medicine. It may be considered that this has become ingrained on the population's psyche, trust equating to convenience and a reliance on the easy and familiar– the Principle of Least Effort (Zipf 1949).

In some respects the consumer is taking steps to further their healthcare knowledge, the internet has undoubtedly made this easier and more convenient, health information is being sought and the consumer prefer reputable sites' such as the NHS. Certainly organisations, such as PAGB, have support for the Self Care Campaign (2010) model, and by organisations working in collaboration, the internet can provide a wide reaching platform to disseminate information. The problem lies with re-educating health consumers, changing their learned behaviour and addressing knowledge gaps to ensure the consumer can make responsible choices for their care.

7.5 The arguments for and against OTC medicine

The adoption of a self care framework will involve the use of OTC medicine, this framework can promote patient empowerment and potentially decrease a demand-dependency led culture (Self Care Campaign 2010). A reduction in GP appointments for minor ailments could also reduce the amount of antibiotics that are being prescribed (Public Health England 2014). OTC medicines are viewed by the healthcare consumer as being convenient, effective and reasonably priced (PAGB 2015a, PAGB 2015b). Medicines can be purchased from a shop if on the GSL or from the pharmacist if categorised P or if further advice is needed about an ailment, this also promotes community pharmacy use. There is an increasing competitive edge with OTC medicine with 'own brands' often being less expensive than branded products. Branded and non-branded products promote consumer choice and more medicines are becoming available as OTC medicines, again adding to the range a consumer can chose from (BMA 2005).

OTC medicines are well established in England and most respondents asked in this survey had used certain groups of them in the last year. The safety profile of OTC medicine is generally good, legislation has been put into use to improve safety and the process of a drug from PoM to P to finally GSL is closely monitored (BMA 2005). Additionally, respondents demonstrated knowledge about OTC medicines, such as interaction with other drugs and suitability of this group of medicines for everyone. Attitude and opinion tended to be one of responsibility towards the use of OTC medicine, for instance reading and adhering to instructions for the medicine.

The safety profile of OTC medicine tends to be good and there was little reporting of adverse events or side effects in this study. However, it can be argued that any self harm, intentional or otherwise, through the use of OTC medicine, is evidence that this group of drugs are still potentially dangerous. Certain groups such as analgesics can be easily overdosed on as they are present in many different forms and it only takes a relatively small amount of the drug to cause an adverse event. An example of this would be paracetamol in tablet form and also an active ingredient in many cold and flu remedies. It can also be argued that due to the accessibility to OTC medicine and the mainly inexpensive price, consumers see these medicines as a normal grocery item and are treating them as such, an attitude that probably would not extend to PoM.

OTC medicines can be potentially dangerous if there are gaps in consumer healthcare knowledge, not all healthcare consumers are going to be 'expert patients'. A knowledge gap was identified in consumer opinion with the strength of OTC medicines and PoM. It is

possible the healthcare consumer might not recognise or act upon the need for professional help should it be necessary.

7.5.1 The arguments for and against online health information

The internet has become an established health information source, which is beneficial for the consumer due to advances in technology. Mobile internet has allowed health information seeking to be convenient and easily accessible. The internet has the capability to provide information around the clock, which is not the case with the GP surgery or the pharmacy.

The provision of information is wide and varied, the consumer can draw on different information from various websites to compare and contrast findings. The websites can also vary with the type of information they offer, from informal and anecdotal, to formal and evidence based. The healthcare consumer can tailor their preferences for the type of information they access to their information need at any specific time and chose how they decide to interact with the site if it contains a forum. Consumer preferences for internet information sources in this study were mainly NHS sites and charitable sites, although some consumers had used more informal sites. NHS websites provide evidence-based, trustworthy health information and often provide links to other sites which provide trusted information. Self diagnosis and seeking health information to further knowledge about an existing illness are the patterns that underpin the information seeking need in this study; therefore the internet can be viewed as a health education tool.

While internet use for seeking health information has become prolific, there are health care consumers who do not use this information source, either because they do not want to or do not have the means. They may not have the technology or lack the technical skills to use this resource, or prefer a face to face consultation. Therefore, it is important that other information sources remain accessible, such as the pharmacist, GP and printed information. It is important that the minority that do not use online health information still have access and provision to health information, that their health information needs are being met.

Personal responsibility for internet security is an area of concern when using online health sources. Respondents surveyed had little consideration of trust markers do not often check a site's privacy policy or the credentials of the site. Potentially the consumer could be unwittingly sharing their information and confidentiality could be compromised. The pattern of not checking site credentials could lead the consumer to believe health information that is wrong, not evidence based or could be harmful. This is more prevalent in sites with free

content, such as blogs or forums as they are not bound by legislation that organisational sites are.

The use of health information for diagnostic purposes can be a negative aspect of internet use. Generally, the health care consumer is not a health care professional, but they are taking over their role in terms of diagnosis. There is a scope for misdiagnosis when the consumer diagnoses themselves and this may have far reaching consequences, such as not accessing the correct level of medical care, incorrect treatment or an escalation of symptoms. Related to this is the assumption that the health consumer knows when it is appropriate to use the internet as a source of health information or when direct action is needed. Although this may be true for the majority of health consumers, it is inevitable that some individuals will not know when it is appropriate to use the internet or to go directly to a health care professional.

8 Discussion Part 2: Critical Incident Technique

Previous studies documenting the use of OTC medicines have mainly been quantitative and little is known from a qualitative perspective what underpins consumer decision making when purchasing this type of medicine or how they may be determined as successful in terms of treatment. In keeping with the aims and objectives of the study this chapter will discuss the results of the CIT findings to expand on what factors make an episode of self treatment with OTC medicine successful or unsuccessful and the factors that determine a successful or unsuccessful health information seeking exercise.

8.1 CIT 1

8.1.1 Theme: Positive impact

8.1.1.1 Subtheme: Effective

Respondents replied overwhelmingly, with 178 incidents, that successful treatment of a health condition with an OTC medicine was determined by the effectiveness of the drug, generally in the alleviation of symptoms. The high number of instances of effectiveness (n=178) reflects the findings of the PAGB and Readers Digest study (2005) that consumers have a high opinion of OTC medicines with 91% being very satisfied or quite satisfied with the treatment outcome and that effectiveness is a factor which determines a successful episode of self care using this type of medication.

8.1.1.2 Subtheme: Impact on quality of life

In addition to the effectiveness of symptom alleviation respondents in some instances reported further positive impacts that the OTC medicine had on their quality of life. Being able to continue with day to day tasks and maintaining health were both factors. As was the speed in which the consumer recovered from their illness. Personal economics also are a factor in the success of an OTC drug. While it has been established by the PAGB (1997, 2005b) that proprietary OTC medicines are widely used by the population, non-proprietary OTC medicines are also acceptable. This reflects findings from the quantitative findings of this research; 71% of respondents did not feel that purchasing a drug brand name of medicine was important. Experiences reported within this critical incident find that the consumer who purchases the non-proprietary drug considers this to be equal in terms of

effectiveness with the branded drug, with the benefit of costing less in economic terms, therefore saving money but resulting in the same successful outcome.

8.1.1.3 Subtheme: Types of OTC medicine used successfully

Painkillers (analgesics), cold remedies, cough medicines and anti-histamines were groups of OTC medicines reported to have been used successfully and were deemed effective. As seen in current literature PAGB (2009b, 2010c, 2015a), analgesics, cold remedies and cough medicines are market leaders in the OTC sector, although a decline of 1.8% in sales was seen in the cough/cold/sore throat medicine sector in 2013. Anti-allergy treatments, including antihistamines, had the highest sales increase between 2012 and 2013 with a growth of 22%, signalling a new growth trend within the OTC market (PAGB 2015a). A wide range of OTC medicine products were used successfully including eye drops, dietary supplements and anti-fungals which may represent the use of drugs now available due to reclassification from POM, to P or OTC status.

8.1.2 Theme: Using OTC medicine

8.1.2.1 Subtheme: Advice/recommendation

Seeking advice or recommendation was a factor in the successful treatment of a health complaint in 28 instances. Sources ranged from a health professional, such as a pharmacist to the non health professional such as the cashier in a local shop. Respondents' examples included asking for advice and also passing on recommendations to others when they feel the outcome has been successful '*worked really well. Medicine worked. Have recommended to others'.*

What becomes apparent in this theme is that information was elicited in human forms and that individuals have been engaging in information behaviour in regards to their OTC medicine and minor ailment needs. In accordance to information behaviour models, (Wilson 1981, 1997, Kuhlthau 1991), respondents have recognised the need for information and thus exhibited information seeking behaviour, from demand on information sources (the pharmacist, the cashier), active searching, selection, success and, in the case of the individual who sought advice and then recommended the treatment method to others, provides evidence of information exchange and information transfer. The experiences

individuals related also provide an insight into the information grounds where the information behaviour exchange took place on a micro level (Spink 2010), which in these instances was the pharmacy and local shop.

8.1.2.2 Subtheme: Following instructions

Respondents viewed following instructions as an element in how successful treatment was. Unlike in the quantitative results where the emphasis was on safety implications of reading and following instructions, individuals expressed that correct preparation of a medicine may impact on how well the medicine works.

8.1.2.3 Subtheme: Timely

Not only taking medicines as per the instructions, timely consumption was seen as beneficial to recovery. The general consensus was getting or taking the medicine at an appropriate time, generally at the onset of symptoms provided a successful reduction of these. One individual states that they *'took the medication immediately and started to get better straight away'* after a period of feeling unwell for several days, this implies that the speed of action of the medication has a bearing on the success of treating an episode.

8.1.3 Theme: Alternative medicine

8.1.3.1 Subtheme: Alternative medicine/home remedies

The two examples selected in the qualitative results section, 'molluscum contagidsum successfully treated with essential oil' and treating a cough with a syrup and chilli, illustrate alternative medicine used after conventional treatment failed and in a complementary form, alongside a conventional cough medicine treatment. The second example uses chilli as a cough treatment, the knowledge for this would have to be prior knowledge or gained from another source, not an innate understanding. The first example explains the use of lemon balm for molluscum contagidsum when the first line treatment and healthcare professional advice failed. In terms of information behaviour models this can be viewed as recognising the need for information – molluscum contagidsum, information seeking behaviour – the GP and the satisfaction or non-satisfaction as an outcome. In this example the individual was not

initially satisfied and it can be reasoned that they actively searched for another treatment solution, the iterative process, it may be assumed that at the stage of presentation in accordance to Kuhlthau's information search process model the feelings of disappointment from the first episode of information seeking were replaced with satisfaction after the success gained from subsequent information seeking (Kuhlthau 1991, Wilson 1996, 1991).

8.1.4 Theme: Do differently in future

8.1.4.1 Subtheme: Nothing differently

Individuals who responded to 'would you do anything differently?' in the survey overwhelmingly replied nothing differently. From a behaviour perspective this indicates the Principle of Least Effort (Zipf 1949). An acceptable solution has been found and this negates the need to search for alternative solutions, should the problem present itself again the information used to problem solve will have been incorporated into the individuals knowledge base (Spink 2010). The assimilation of information into the knowledge base and the seemingly willingness to repeat a process if needed has been documented by the PAGB (2009b), stating that when treating an illness the consumer will use methods utilised previously.

8.1.4.2 Subtheme: Use OTC drugs

Other respondents stated that they would use OTC medicines, rather than do nothing differently. The first respondent used in the examples would continue to use OTC medicine, but now would check the ingredients of brand names against store options. This highlights the individual using information they had gained, as the usual brand was no longer stocked. Decision making and assimilating the knowledge for further use was evident '*in future I would check ingredients of brand names against store options*.' The respondent in the second example decided to use OTC medicine after it was recommended by the doctor, equating to the information use process in Wilson's 1981 model, therefore next time OTC medicines would be used before consulting a GP.

8.2 CIT 2: Unsuccessful OTC medicine experiences

8.2.1 Theme: Unsuccessful

8.2.1.1 Subtheme: Ineffective

Examples reflect ineffectiveness of the medicines purchased. The first example is the case of unsuccessfully trying to treat a migraine with normal painkillers, the second example found cough medicine to be ineffective, whilst the third respondent was unsuccessful using *'cheap paracetamol'*. The third example blames the perceived quality of the medicine '*cheap paracetamol*' insinuating that a more expensive brand could have yielded better results, a thought not shared with respondents who successfully treated health related issues with cheaper off-patent brands. One respondent complains about cough medicine, the effectiveness of which is a contentious issue (Cox 2014, Which? 2012). The pharmacist echoes this, telling the consumer that cough medicine is a waste of time and money. In terms of information behaviour and OTC medicine, the consumer chose to ignore the information during the exchange, but now repeats the information they were given after finding out through their experience that the medicine was ineffective.

8.2.1.2 Subtheme: Ability of the drug to treat illness

Respondents tended to have high expectations of symptom relief from OTC medicines. Failure to treat successfully has stemmed from purchasing drugs that are not correct for a specific condition, for instance buying normal painkillers instead of migraine specific medication. On occasion, individuals have needed stronger drugs only available on prescription or specialised medical care. For example the incident where the respondent had scratched their eye and the OTC medicine failed to respond and was then directed to A & E by the pharmacist. This type of injury is beyond the scope of any medicine available OTC and the need for specialist medical care should be recognised by the healthcare consumer.

Frameworks developed by the NHS in conjunction with the PAGB (2011, 2008b) and other health organisations stress the use of the correct type of care for the problem encountered and advocate the utilisation of the community pharmacist. The incident highlighted the need for more active information seeking and how the iterative process, revisiting the pharmacy and requesting information, could have been avoided with the respondent being directed to the medical intervention needed initially if a more proactive information seeking pathway was activated and indeed if the individual had recognised the severity of their injury.

8.2.1.3 Subtheme: Unavailability and OTC legislation

While much discussion has focused on the availability of OTC medicine and how this may undermine the respect in regards to safety of this type of medicine OTC drugs are subject to various levels of legislation which has provided a barrier to respondents being able to purchase medicine at the point of need.

Contrary to popular belief there is no legal age restriction for buying OTC medicines. Both the Royal Pharmaceutical Society and the Medicines and Healthcare products Regulatory Agency do not have specific rules on a suitable age for buying OTC drugs and have not issued any guidance. Although some retail outlets do have their own specific policies restricting the sale of OTC medicines to children (NHS choices 2014).

One safeguard concerns pharmacy medicines (P), where only pharmacies can sell these medicines, unlike those on the GSL (General Sales List - medicines available from non pharmacy retail outlets),and a pharmacist must oversee the purchase (NHS choices 2014). One respondent was declined a purchase by the pharmacist because the intended user did not meet the criteria for that medicine. The respondent did in fact manage to purchase the medicine, using other methods, as there had been prior experience of using the eye drops for the child and it was felt by the parent that it would be kinder, rather than the child suffering discomfort until a doctor's appointment could be made. This example showed the decision making process in purchasing OTC medicine from the parental perspective – decision making based on prior use and experience and doing what was perceived to be most beneficial for the child. Also, the role of the pharmacist and medicine regulation was emphasised. Wilson (1999) describes barriers that relate to information behaviour, the barriers in this specific case being the guide lines of the medication and the specific environment (pharmacy) and demographics (age) of the individuals involved. Again, the respondent had to employ an iterative method to overcome the barriers to the goal – relief of symptoms. Problem solving, in this instance, involved disregarding knowledge. The previous knowledge was that they had used this medicine for their child before, which formulated their beliefs – that they could purchase the medicine OTC, the pharmacist informed the respondent that the medicine was not suitable for a child of that age, therefore could not be sold. By disregarding the new information provided by the pharmacist a method of purchase was found for the medicine, which would not contravene, at least apparently, legislation governing the sale.

The new information offered by the pharmacist opposed the original experience and beliefs of the respondent – the prior use of this medicine for their child. The respondent decided to find another method to purchase the medicine (another adult conducting the transaction), rejecting the newly gained knowledge to provide a solution to the problem. Therefore eliminating the unforeseen barriers they had experienced (legislation governing the sale due to the age of the patient) and achieving the goal of purchasing this specific medicine.

The second area of OTC medicine sales legislation is restriction on the amount of tablets sold per pack, the amount of packets that can be bought in one transaction and the strength of the tablets. Paracetamol and ibuprofen are examples of common OTC drugs that do have sales restrictions. The second CIT example (Section 6 Qualitative Results) details the respondents disappointment in not being able to purchase the required amount of paracetamol products resulting in an unsuccessful treatment episode. The respondent mentions the fact that they had a large family, who were all suffering from colds and needed that amount of medication. The legislation governing the sale of paracetamol is non-negotiable, even if it is seemingly obvious that those were the reasons underpinning the purchase. This may construed as being draconian, for a widely available, cost effective medicine which has a considerable history in the OTC medicine market. However, the facts remain that paracetamol is the most common agent of self harm in the UK (Patient.co.uk 2013). While it cannot be denied that pack restrictions have been successful in reducing the number of intentional suicides NHS choices (2013), Hawton et al (2013) conclude that as a large number of deaths due to paracetamol overdose occur every year further measures are needed. Paracetamol has been linked to accidental overdose due to the high number of combination products available OTC, confusion when dosing children, prolonged use and the presence of an underlying condition (Patient.co.uk 2013).

8.2.2 Theme: Negative impact

8.2.2.1 Subtheme: Misdiagnosis, escalation and side effects.

In keeping with the quantitative research there was little reporting of side effects that the respondent felt was directly attributed to OTC drugs. OTC drugs do generally have a good safety profile but as with any drug that is available, including prescription medicines, there is potential for allergic reactions, as reported by one respondent who took cobrifen and woke up with swollen eyes. The second respondent was concerned there was a manufacturing problem with the medicine. In each case both individuals stopped taking the medicine.

Rather than perceived side effects of OTC medicine, misdiagnosis and escalation of an illness dominated negative impacts attributed to OTC medicines. It is not uncommon for some illnesses to present with mild symptoms and rapidly escalate in severity or to mimic signs and symptoms of another condition. (Chandler 2015, University of Maryland Medical Center 2005, Rupavate 2016).

In cases of misdiagnosis, either by the individual or a health professional, the medicine purchased is unlikely to be effective. In some situations the inability of the individual to correctly diagnose their condition has resulted in delayed treatment and an escalation of the condition. Instances of this reported include coughs and UTIs. One individual who thought they had a cough and tried to treat the cough did have at that stage undiagnosed pneumonia. Whilst the exact circumstances leading to this episode are not disclosed it is understandable why they decided on this method of treatment initially. Many types of pneumonia exist but the most common strains are caused by staphylococcus aureus causing pneumonia after a preceding influenza viral illness and mycoplasma pneumonia (Kumar & Clark 2002). Both types of these pneumonia present with a cough, the severity and productivity depending on the type of pneumonia. Headaches, malaise and raised temperature may also be initially present (Kumar & Clark 2002, Gould 2002). Initially the individual may have thought that they had a cough or the beginnings of influenza before they realised the severity of the illness they were suffering from due to the generalised nature of the signs and symptoms of the illness.

Another respondent describes their experience with OTC treatment for cystitis combined with paracetamol the outcome of which is that they presented to hospital with a serious kidney infection. Again, this is another example of how an illness can escalate with delays to the correct treatment. The OTC treatment available is designed to relieve- the symptoms in mild UTI infections while the body overcomes the infection. NHS Choices (2015) however,

do state that there is a lack of clinical evidence that alkanising agents are effective. It does seem, in this case, that the infection was severe and due to the delay in seeking professional treatment the condition worsened due to the ascending nature of UTIs, allowing the infection to eventually reach the kidneys, which can have severe consequences on the renal system (Gould 2002).

Adverse events concerning OTC medicine is multifaceted and the majority of events reported were those of misdiagnosis due to common symptoms culminating in an escalation of severity of the illness. On an organisational level this has been realised and health education in this field, such as the Treat Yourself Better with Pharmacist Advice campaign (PAGB 2014) provides literature on 'warning signs' which is available online.

8.2.2.2 Subtheme: Types of OTC used unsuccessfully

A wide spectrum of OTC medicines was reported as have being used unsuccessfully. These included treatments for veruccas, sleeping tablets, antifungals and antacids. Market leaders such as analgesics, cough medicines and antihistamines also featured. One of the groups of drugs that were most frequently reported was those used to treat UTIs, categorised by the PAGB (2010c) as a skin treatment and representing a proportion of the £415 million revenue in that market sector.

8.2.3 Theme: Further action/outcome

8.2.3.1 Subtheme: Visited GP/HP/needed prescription

The majority of respondents who unsuccessfully treated a health issue with OTC medicines did then visit their GP or healthcare provider, generally obtaining a prescription. The PAGB (2009b) state that when treating an illness the consumer will use methods utilised previously and the majority of respondents when questioned (CIT 1), did state they would use the same method, in this case OTC medicine, should the condition recur. When questioned about what steps would be taken if unsuccessful treating an ailment with OTC medicine the answer was overwhelmingly that they went to the GP. The main reason for this is to access prescription drugs, mainly antibiotics and the doctor is seen as the gateway to this treatment. While this is understandable from some perspectives, such as the examples of when OTC medicine was not suitable or there had been significant escalation of the illness, it does

appear to present a worrying precedent when the minority of respondents would try OTC medicines again, but the majority would go to the GP first when confronted with the same problem, especially for minor ailments or when the onset of symptoms first occur and there has been no attempt at self care. The findings of this research also highlight two relevant and current subjects within healthcare and medicine: the patients perceived need for antibiotics and the potential of antimicrobial resistance (Nesta.org 2014). Over prescribing and the lack of concordance are seen as primary factors for potential antibiotic resistance as the more antibiotics are taken the more bacteria becomes resistant to them (Nesta.org 2014). Two main factors for over prescribing antibiotics in a GP setting are the lack of accurate point of care diagnostic tools to differentiate between a viral and bacterial infection and patient pressure to prescribe. Whilst respondents did not categorically admit to pushing the GP for an antibiotic prescription (Society for Applied Microbiology 2014) the intonation was that as they had tried and failed to treat an ailment with OTC medicine the next step was prescription, mainly antibiotic, drug treatment and that this pathway would be sought in the future, with the elimination of the OTC medicine.

8.2.3.2 Subtheme: Would visit GP

Similarly, a proportion of respondents when faced with a problem recurring would go to the GP first before attempting self-care with OTC medicine. The respondent is unwilling to try using self-care

8.2.3.3 Subtheme: Self medicate OTC

Representing the least amount of respondents were the individuals that would continue to use OTC medicine as a first line treatment option when an unsuccessful attempt had been previously made. One respondent answered that they 'wouldn't take my son to GP with every cough'.

8.3 CIT 3: Successful information searching

8.3.1 Theme: Reason for search

8.3.1.1 Subtheme: Self diagnosis

The reasons why respondents searched for health or medical information was categorised into two distinct areas: to self diagnose and to further knowledge about an existing medical problem. Therefore, two patterns of information seeking behaviour were evident: (1) approaching a health professional first and then further seeking information after the diagnosis and (2) or self diagnosing first using the presenting signs and symptoms before approaching the health professional if deemed necessary.

The presentation of signs or symptoms of illness formed the catalyst to seek information, identifying the need for specific information and in the case of individuals who responded to this survey resulting in an active search. Respondents who actively sought information, for themselves or others can be viewed as monitoring, initiating the stress/coping element of Wilson's (1996) model of information behaviour.

8.3.1.2 Subtheme: Further knowledge

Furthering existing knowledge about an ongoing health issue was another reason underpinning the need to seek information. Respondents' did not necessarily act on the information they had actively searched for, but reported that they felt better informed about the medical issue. Furthering knowledge by actively seeking information usually occurred after a professional diagnosis, again exhibiting monitoring traits, promoting understanding of a disease and resulting in the healthcare consumer feeling more informed. In terms of information need, this is categorised as the need to elucidate the information held (Weights et al 1993).

8.3.2 Theme: Method of search

8.3.2.1 Subtheme: Internet

The internet superseded the person as the main source of health information from respondents' CIT experiences, unlike findings in the quantitative area of study, where the main source of information was the GP. It is possible that some respondents assumed the

question was asking about seeking health information online. It was reported that reasons for this included 'more info' and the consumer was 'able to gain more info than GP able to give in time available'. Whilst it is unclear if the individual had consulted the GP it is not unusual for more than one information resource to be utilised (Cameron et al 1994). Paradoxically the place where an individual should be able to gain information about a health issue – the GP surgery, can become an environmental/situational barrier, characteristics that may be evident within a situation or organisation (Borgers et al 1993) . Time is a factor, with the information exchange between doctor and patient being inhibited with limited time available to provide diagnosis, examination and explanation of treatment (Cameron et al 1994, Wilson 1997, Hannay et al 1992). The internet limits environmental and situational barriers allowing the individual to seek information at a rate appropriate for their needs providing information gathered from a number of sources.

8.3.2.2 Subtheme: Person

The internet as a health information resource has increased in popularity but there remains a need for the human as a health information resource. This may take the form of a formal or informal information seeking activity, depending on the source. The formal route through a doctor or pharmacist remains relevant to information seeking behaviour as they are professionals, experts in their fields, are free, promote information exchanges as seen in CIT questions one and two and can provide medicine or information at the point of need. Behavioural models, for example Zipf's Principle of Least Effort (1949) can also form a barrier to utilising personal information seeking resources. A respondent who is familiar with accessing the GP for health information is reluctant to explore other resources, a behaviour that also reflects Parsons' (1951) Sick Role.

The second 'human' factor identified was that of the informal resource: a friend, relative or partner are examples of this. One respondent uses their partner for information seeking and if this fails they reiterate the search using formal pathways such as the pharmacist or GP.

8.3.3 Theme: Type of sites searched

8.3.3.1 Subtheme: Organisation

A factor underpinning a successful search was the type of internet site where the individual sought health information. The majority of respondents' cited using organisational websites, namely the NHS and charitable organisations. The NHS is a highly recognised brand in England and the UK and is the largest care provider for the population. Websites that belong to charitable organisations are more specific in content focusing on one illness or a small group of related illnesses. Both types of organisational sites provide expert advice, but do not promote specific brands of medicine providing a non-biased or promotional information resource.

8.3.3.2 Subtheme: Social media

Websites also provide more informal resources for information seeking allowing interaction between users who can actively seek information and exchange information, described as a virtual information ground (Spink 2010). The concept is not dissimilar to that of the non medical professional 'person' source of information. Respondents' reported successful information seeking using these types of sites and acted on the information received. Using social media was not always the first source of information utilised with individuals investigating other resources such as the GP or other websites first. When prior attempts at goal attainment failed, respondents reiterated the process, as Wilson (1999) describes as the feedback loop.

8.3.3.3 Subtheme: Images

How information was presented was a factor in successful health information seeking, images on websites, such as the NHS, were used for comparison by health consumers. These images were useful for dermatological conditions such as slapped cheek syndrome as it allows a direct visual comparison. A respondent who was trying to determine if a child had this syndrome used the adjectives 'satisfied' and 'confident' to recount their experience of using the site to actively seek information, feelings or emotions that Kuhlthau (1991) describes as part of the Information Search Process, when the search is successful and the information need has been satisfied.

8.3.4 Theme: How information was used

8.3.4.1 Subtheme: Decision making

Information use, it has been recognised, had received little attention, which was a factor in Wilson's (1999) model of information behaviour. A key factor in the success of information seeking in this research was how this information was used. The main use of the information gained was in decision making. Participants used the information as a foundation to further knowledge and ultimately decide how to proceed with their health issue. Decision making centred around the necessity to seek further care, such as a GP appointment or visiting A&E or to self-treat using OTC medicines. Various information sources were utilised from the internet, including NHS website questioning frameworks and wikis to personal knowledge gained from prior experience leading to identifying a need for information, actively searching and using the new information.

8.3.4.2 Subtheme: Information to GP/HP

Once to decision had been made to consult a medical professional individuals made further use of the information by referring it to the healthcare provider. Taking the information to the 'expert' opposes Parsons (1951) model it highlights elements of modern health frameworks; suggesting that the consumer should be proactive and more assertive with their health and decision making, not passive receptors. Problem solving and goal attainment was evident and these individuals conducted searches, one also using previous experience to ensure that they got what they considered the best possible care and outcome for their situation.

Barriers to information seeking and use have been well documented and may be physical, affective, psychological or environmental (Wilson 1997). Borgers et al (1993) cite cognitive characteristics such as a lack of medical knowledge as a barrier to information during a consultation, whilst Cameron et al (1994) reports that unfamiliar terminology may hinder the information exchange between the patient and doctor. One approach by a participant who recognised this barrier was to search online for 'trouble shooting questions to ask the doctor'. This approach increased confidence levels and the individual felt that they knew what they were talking about 'even when jargon was being used by the doctor' to answer questions and that they also 'knew what options to treatment I had'.

Whist the example above emphasises the recognised need to problem solve before a consultation, one individual utilised information behaviour after the diagnosis from the doctor.

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In effect, they were working backwards, whilst most respondents actively sought information for diagnosis, furthering knowledge or decision making for care, identifying the need for information, actively searching, information processing and use, a pattern evident in other successful information seeking CIT experiences, this individual sought to use the information to confirm the doctors diagnosis.

8.4 CIT 4: Unsuccessful information searching

8.4.1 Theme: Unstructured search

8.4.1.1 Subtheme: Vague/unspecific search

A factor that determined an unsuccessful information search was the use of vague search terms or searching for illnesses that were complicated by multiple signs or symptoms and comorbidity – the presence of more than one illness at the same time. This resulted in a query that was vague and, understandably, results were ineffective, often due to the volume of information that was generated. As in previous CIT experiences reported, success was measured by goal attainment. In these instances the motive for information seeking was present and an active search undertaken but the process was terminated before a successful result due to the perceived failure of the individual.

8.4.2 Method of information search

8.4.2.1 Subtheme: Internet

Information sources utilised were identical to those accessed in successful information searches, the internet and in person. Respondents reported internet searches using specific websites such as the NHS or that they just 'googled' a query, a generic term used by respondents meaning that they typed a query into a search engine. Information gained from a person was both formal and informal and some respondents accessed more than one source of information. An information seeking exercise was considered unsuccessful because it did not yield the results that the respondent deemed acceptable, for example, 'googled neck pain, recommended chiropractor but I don't want to go to one'. Whilst the cognitive aspect of the solution has been represented, unlike the examples of vague and

unspecific information searching, the beliefs and values held by the respondent were compromised to an unacceptable extent (Wilson 1997).

8.4.2.2 Subtheme: Person

Respondents reported utilising health professionals for information as well as the internet for the same query. Using more than one source of information does not initially guarantee success. Respondents considered an information source was unsuccessful if they had to use more than one source of information and repeat the process, even though success was eventually gained suggesting that the value of time (Wilson 1997) could be a factor for the healthcare consumer.

8.4.3 Theme: Reason for search

8.4.3.1 Subtheme: Self diagnosis

The reasons for searching did not differ from successful information seeking experiences; self diagnosis and to further knowledge about an already diagnosed health condition. The volume of diagnosis' contributed to the failure of goal attainment and feelings of confusion and worry were reported, consistent with the emotions common to the exploration stage of Kuhlthau's (1991) Information Search Process model.

8.4.3.2 Subtheme: Further knowledge

After finding the motive to search for information about pregnancy and the risk of contracting scarlet fever, and actively seeking the information online, the respondent in this study could not determine the likelihood of catching the illness. No other information sources were reported to have been investigated. It can be deduced that the respondent stopped searching for information leaving their query unanswered.

8.4.4 Theme: Negative emotion

8.4.4.1 Subtheme: Anxiety

A consequence of an unsuccessful search can result in negative emotions such as anxiety. This may stem from feeling ineffectual when trying to problem solve. The respondent states that the *'information and advice too muddling. Too many opinions about what may cause it and what may help. Felt bewildered and unable to help.'* Again this suggests the volume of information was a factor which hindered the information search as was the multitude of opinions causing an information overload. Self-efficacy is also a barrier, the individual may be aware that use of an information source may produce useful information, but doubt their capacity to access it or properly carry out a search. Again these emotions experienced relate to the exploration stage of ISP and those of an information overload and information anxiety (Wilson 1997, Kuhlthau 1991, Bawden & Robinson 2008).

8.4.5 Theme: Information issues

8.4.5.1 Subtheme: Volume of information

The volume of information generated by an online information search was a factor in why a search was unsuccessful, there was either too much or too little information. Generating too much information is a well known pathology in information behaviour, resulting in an information overload (Bawden & Robinson 2008). One participant reports that there was 'too much info to limit down to anything useful'. The inability to employ information coping strategies such as satisficing can be considered a barrier to the individuals' information goal attainment.

Too little information generated in an information search is not a pathology as defined by Bawden and Robinson (2008) but has been reported as a factor determining an unsuccessful search. The drug that information was being searched for was, at that time, relatively new and barriers may have existed such as a lack of access to information. Wilson (1997) states that a fundamental requirement for information seeking is that some form of information should be accessible. It is entirely possible that information about this drug had only just began to be disseminated and that the targeted audience were medical professionals. It is also feasible that information could only be accessed by purchasing the literature, or by subscription to the publisher.

8.4.5.2 Subtheme: Incorrect information

Whilst it is evident that various barriers to information seeking exist, which contribute to factors that cause information seeking to be unsuccessful, on occasion the information accessed is just incorrect. An example of this is symptom checkers, an online system that an individual enters their symptoms and receives a diagnosis, described as being '*so wrong its unbelievable'*. By looking at factors that constituted an unsuccessful episode of using OTC medicine and an unsuccessful information source, symptoms and signs of illnesses are often varied and vague. This may be a contributing factor to why this form of health information framework is seen to be an element that underpins unsuccessful information seeking.

8.5 Overview

The main factor identified that constitutes a successful self-care episode using OTC medicine was the effectiveness of the treatment, which is the alleviation of symptoms. One hundred and seventy eight incidents were reported in the CIT research citing this, providing evidence that the consumer has access and provision to OTC medicines and did actively use this type of drug. This reflects findings from the quantitative analysis that 90% of respondents had used certain categories of OTC medicines in the last year. Additionally being able to continue with day to day tasks and the speed in which the consumer recovered from their illness was seen as a positive impact. The theme positive impact extended beyond the effectiveness of the medicine to reduce symptoms to value for money with own brand medicine being beneficial in economic terms. Groups of medicines that respondents cited as being effective were mainly analgesics, cold remedies, cough medicines and anti-histamines, as found in previous literature (PAGB 2009b, 2010a, 2015a).

Factors that were reported by the healthcare consumer when describing a successful self-care episode included advice/recommendations when using OTC medicine. Sources for advice/recommendations were varied, from healthcare professionals to non healthcare professionals. The consumer also passed on advice when the outcome of treatment was deemed successful. This provides evidence that the consumer is engaging health information seeking behaviours from varying information sources. Consumers also expressed that following instructions and timeliness were important factors when using OTC medicine, to maximise the potential effectiveness of the treatment rather than from a safety perspective. Alternative medicine was cited by some respondents as being beneficial either as a treatment on its own, or used in a complementary form alongside conventional OTC

medicine. Alternative medicine was also used when the respondent felt that the conventional OTC medicine had not been successful and professional medical advice had failed to resolve the ailment.

When asked what they would do differently in future most respondents stated that they would do nothing differently or would use OTC medicine, indicating that the treatment had a positive outcome and that they would repeat the same process.

When describing what factors made a self treatment episode unsuccessful, ineffectiveness of the medicine was a contributing factor, as was the ability of the OTC drug to treat the illness. Unavailability of a medicine and OTC drug legislation was also cited as a factor in an unsuccessful episode, certainly in terms of access and provision according to respondents who had experienced difficulty purchasing OTC medicine. This factor centred around respondents trying to buy more than the permitted amount of paracetamol in one purchase and the attempted purchase of a medicine that was PoM.

There was little reporting of side effects of OTC medicine that was directly attributed to OTC drugs. However, escalation of symptoms was reported, as was misdiagnosis by the individual or a health professional. The types of OTC medicine which was used unsuccessfully included irritable bowel syndrome medicines, antifungals, antacids, the most frequently reported in this study was treatments for cystitis.

When asked about further action/outcomes respondents in this study said they would or did visit their GP, very few respondents would use OTC medicines again as a first line treatment should the condition recur.

Reasons for successful information searching included self diagnosis and further knowledge about an existing condition. Information sources included the internet and people, including the doctor or pharmacist and non health professionals such as friends or relatives. Further information sources and patterns were detected as factors in a health successful information search. These were the types of internet site searched, such as the NHS or charitable organisation, the use of social media and images as a source of information.

Patterns of health information seeking included decision making, respondents in this study used decision making as a foundation as how to proceed with a health issue, if further intervention was necessary and, if so, at which level. Information use as a factor continued with the consumer using the information they had gained in consultation with the GP.

Factors governing an unsuccessful information search were unspecific or vague search terms being used. Sources of information were the internet or in-person and the reasons for searching were self diagnosis and to further knowledge of an existing condition. Anxiety was experienced and the volume of information generated by internet searching was a contributing negative factor.

9 Conclusions

9.1 Quantitative Study Conclusion

This thesis demonstrated the relationships between the healthcare consumer, OTC medicine and information seeking behaviour in accordance with the aims and objectives of the research from a quantitative and qualitative perspective nested within the social networking stage of the evolutionary information behaviour timeline model.

Quantitative findings in section 5.1 provided an overall understanding of how healthcare consumers considered their health status and further attitudes and opinions to OTC medicine which was compared with existing literature. Further investigations into consumer behaviour included purchasing habits, types of OTC medicines used and attitudes towards proprietary versus non-proprietary products as discussed in sections 7.1.1 – 7.1.9. The second half of the quantitative section (5.2, discussed in sections 7.2 to 7.3) of the survey investigated the information seeking behaviour of healthcare consumers, including preferences for health information sources.

The majority of respondents considered themselves to be generally in good health and had used OTC medicine in the last year. The majority of respondents also claimed to read and follow instructions on the medicine and were confident in their use of OTC drugs for themselves and for others and found these drugs effective for treating their ailments. Health information sources utilised were the GP and the internet, the first and second preferred sources respectively. A high proportion of respondents had searched for health related issues online, the main category researched being diagnosis of presenting signs or symptoms with the information sought from organisational sites, charities or forums as reported in section 5.1 and 5.2.

It is a positive step for self-care that consumers are using the internet for health information (discussed in section 7.5.1) Certainly organisations such as the Proprietary Agency Great Britain (PAGB) have support for their model and but there is a need for self-care to become more prevalent as it would certainly help ease the burden on the NHS, financially and in the time the GP spends dealing with minor ailments, as discussed in section 7.2.1. The problem lies with re-educating health consumers, changing their learned behaviour and addressing knowledge gaps to ensure the consumer can make responsible choices for their care (discussed in section 7.1.8, 7.3.1 and 7.4).

9.2 Qualitative Study Conclusion

The objectives of the qualitative study was to determine factors that contributed to the success or lack of success of an OTC medicine treatment episode and to determine the factors that made information seeking either successful or unsuccessful. Themes were identified using an inductive, emergent approach to the data analysis. The qualitative CIT questioning approach was intended to give more insight to experiences in these fields from the health consumer perspective.

From the OTC medicine treatment episodes it was evident that information behaviour and information seeking behaviour was being utilised. Information seeking tended to occur in person, such as at the point of purchase of an OTC medicine in a pharmacy or shop. As well as information seeking, respondents also engaged in further information behaviours, such as information exchanges as identified in sections 6.2.1.2, 6.2.2.1 and 6.4.4.2 (discussed in sections 8.1.2.1, 8.3.4.2).

The theme positive impact of an OTC medicine and the subtheme effective symptom relief generated more critical incidents than any other theme or subtheme identified, in addition the subtheme impact on quality of life provided insight to what other aspects of an OTC medicine was considered as positive or beneficial. The ability to control an ailment to maintain an acceptable balance for daily living, being able to continue with day to day responsibilities and the use of non-proprietary medicine providing more economic value were reasons cited as being beneficial (identified in section 6.2.1.2, discussed in section 8.2.1.2).

Ineffectiveness was the emergent theme from findings in section 6.3.1.1 that made an OTC medicine treatment episode unsuccessful. Various reasons contributed to this, purchasing the incorrect medicine for a specific illness, for example. Again information seeking behaviour was evident, from the respondent who ignored pharmacy advice to another individual who was directed to A&E after requesting advice from a pharmacist, these incidents taking place at the point of care/purchase. (Discussed in section 8.2.1.1 and 8.2.1.2).

When a respondent met with a barrier to OTC medicine this was reported as an unsuccessful episode, even though they did eventually get the medicine requested, perhaps this is due to extra unanticipated decision making and problem solving skills having to be employed to attain their specific goal. (Findings in section 6.3.1.3, discussed in section 8.2.1.3).

Respondents were asked what they did and what they would do differently the next time they encountered a similar situation. In both successful and unsuccessful OTC medicine episodes the majority of individuals would repeat the same process (section 6.2.4 and 6.3.3). Respondents who did not treat themselves successfully and visited a GP would continue to do so in future, without using OTC medicines as a first line treatment. This behaviour is widely recognised in medicine and healthcare as consumers will use the treatment option that has provided success on prior occasions (PAGB 2009b) (discussed in sections 8.1.4.1, 8.2.3.1, 8.2.3.2).

The majority of respondents reported using online sources when information seeking, both successfully and unsuccessfully. Sources used tended to be organisations such as the NHS or charities (section 6.4.3.1) and information was used to further knowledge about an existing medical condition or for self-diagnosis, evident in section 6.4.1.1 and 6.4.1.2. Where treatment through conventional channels had failed respondents reported using social media channels such as forums to read about others' experiences and act on the information that was discovered there. Social media is an emergent theme in health information seeking, from dedicated social networks such as Facebook which have specific groups dedicated to an illness, to other more generalised forums (section 6.4.3.2, discussed in section 8.3.3.2).

Insight was gained into how the information was utilised. For the majority of individuals it formed part of the decision making process, in many cases to decide if professional care was needed or if self treatment was appropriate, evident in section 6.4.4.1 Goal attainment – finding the information and assistance with the decision making process were factors determining a successful information seeking exercise. Information was also employed to communicate needs with a healthcare professional, the consumer was using the information to form an argument or case for their preferred treatment of a condition, the information forming the evidence, underpinning the changing attitude in communication between healthcare professional and the consumer. Information was also used to overcome barriers in consultations with a GP, to provide prior knowledge of an illness and an understanding of the medical terminology employed in that specific environment as discussed in section 8.3.4.2

Factors governing an unsuccessful information seeking episode were more complex. Online searching was the method reported the most, with vague or non specific presenting symptoms and search strategies forming the basis of the problem, resulting in vast amounts of information and possible causes/diagnosis (section 6.5.1.1, 6.5.5.1 and 8.4.5.1). Individuals experienced information pathologies such as information overload, a lack of information and information that was incorrect. Beliefs, values and emotional impact were

also factors. Information seeking was categorised as unsuccessful because the individual did not like the solution, finding it unacceptable. Healthcare and medicine when seeking information from a subjective point can be highly emotive, and failure to find solutions to a query resulted in emotions described as bewilderment, worry or confusion which constitutes information anxiety (section 6.5.4.1 discussed in section 8.4.4.1).

9.3 Final Conclusion

It is evident from the research that OTC medicine is a widely used commodity, generally used safely with individuals adhering to the instructions, feeling confident in their use and experiencing few negative effects (see sections 5.1). As an information resource the internet continues to rise, challenging the GP as the most utilised source and is favoured over the pharmacist, mass media or friends/family, shown in sections 5.2 and 6.4.2.1. The use of social networking and social media as a platform for information seeking for health related issues is an emerging theme, providing an environment to seek and exchange information with others who may have similar experiences, fulfilling the social networking aspect that exists in the evolution of information behaviour as discussed in sections 7.2.1, 7.2.2, 7.2.3, 8.3.2.1 and 8.3.3.2.

Respondents still have a heavy reliance on the GP for self treatable ailments and the perceived need for prescription medicine, namely antibiotics (discussed in section 8.2.3.1). There is also evidence shown in section 6.3 that the individual utilises solutions to ailments that have been successful in the past and that there is an unwillingness to deviate from that method, for instance visiting the GP for a prescription and reporting the intention to do the same when faced with a similar situation. Organisations such as the NHS, the Proprietary Agency Great Britain and the Department of Health have recognised this and are working collaboratively to actively deliver frameworks to healthcare consumers via the internet, pharmacies and GP surgeries to provide information to educate the healthcare consumer about suitable methods of healthcare. This includes self treatment and when it is appropriate to see a healthcare professional, such as the pharmacist, a resource that is under-utilised (PAGB 2014).

Information behaviour and related behaviours – information seeking, utilisation, decision making and exchanging are evident (sections 5.2, 6.4.1, 6.4.4.1, 6.4.4.2 and 6.5.2). The majority of information seeking reported in the qualitative research takes place online, but the human aspect is still evident. The information grounds, the environment where the information was found, were the GP consultation, the pharmacy, general shops and online forums.

The NHS and charitable organisations were widely used online resources, though less formal or evidence based networks and media were also used which provide the means for interactivity, should it be needed (evident in sections 5.2 and 6.4.3). Negative aspects of information searching were expressed (sections 6.5.4.1, 6.5.5.1, 6.5.5.2) but the majority of individuals communicated successful experiences in their health information seeking episodes. Respondents tended to follow well documented stages in their information seeking,

including recognising the need to reiterate the search process on occasion to reach their intended goal (section 6.4.3.2). The research provided documentation of the process from recognition of a need or motivation to seek information, the active search and how it was conducted, through the decision making process or utilisation of information gathered the outcome – gaining more knowledge of a condition or finding the means to treat an illness in an appropriate manner (sections 6.4.1.1, 6.4.2, 6.4.4.1). Overall the majority of healthcare consumers in this study were adept information seekers, utilising more than one source, overcoming perceived barriers and, when needing to, repeating the exercise and continuing to adopt and utilise various information sources, such as social networks, to fulfil their information needs, as discussed in sections 8.3.1.1, 8.3.1.2, 8.3.3.2, 8.3.4.1 and 8.3.4.2.

9.4 Recommendations

Over the counter medicine, online health information seeking and the concept of self care can be divisive subjects in healthcare. Whilst some aspects of OTC medicine and online health information seeking are not viewed positively, there are compelling arguments for these policies which are discussed in sections 7.3.5 and 7.3.6.

This study has led to the conclusion that OTC medicine and online health information seeking can provide positive benefits to the healthcare consumer if used correctly and are an established part of healthcare in England. The research provided evidence (section 5.1 and 6.2) that the healthcare consumer experience of OTC medicine was mainly positive, whilst negative experiences were reported (section 6.3) these were in the minority and mainly were concerned with the medicine being ineffective. Healthcare consumers also reported more positive experiences of online health information seeking than negative experiences (section 6.4 and 6.5). However, the literature and the research have highlighted where improvements can be made (sections 2.2.4, 2.4.1, 2.4.2, 6.5.1.1, 6.5.5.1 and 6.5.5.2). The recommendations below take into consideration all stakeholders involved in OTC medicine and health information seeking.

1. Healthcare organisations, particularly the NHS should improve social networking pages on popular social networking sites. This includes promoting the profile, improving and regularly updating content and prominently providing links between the social media profile and the main website. Content should include promoting self care for minor ailments and topical health subjects such as over prescribing of antibiotics. This recommendation is based on the findings that the internet and social networking have a prolific role in consumer health information seeking (sections 5.2 and 6.4.2.1, discussed in sections 7.2.1, 7.2.2, 8.3.2.1, 8.3.3.2 and 8.2.3.1). Recommendation to raise awareness of antibiotic reliance is based on the literature in section 2.4.2 and findings in section 6.3.3.1, this is discussed in section 8.2.3.1. The literature, research findings and the discussion highlight the use of antibiotics and the healthcare consumers decision making process.

2. Healthcare organisations and healthcare professionals need to ensure the provision of continuing online health education aimed at the healthcare consumer. This can include choosing the appropriate healthcare for the ailment, promoting the community pharmacy as a source of health information and OTC medicine safety. This recommendation is based on findings in sections 5.1, 5.2, 6.2.2.1, 6.3.1.1, 6.3.1.2, 6.3.2.1, 6.4.2.1 and discussed in sections 7.2.1, 8.2.1.2 and 8.3.2.1. These

sections emphasise the importance of choosing appropriate treatment and the appropriate information source.

3. Healthcare professionals should be aware that not all healthcare consumers use the internet as an information source, so they should ensure printed media, for example information leaflets, or posters are displayed prominently in the surgery or pharmacy and are relevant. They should provide paper based information about OTC medicine and minor ailments, promoting the pharmacy as a source of information and self care. This recommendation is based on findings in section 6.4.2.2, where respondents have expressed a dislike for finding health information online and have shown little inclination to change information seeking behaviours. This finding is discussed in section 8.3.2.2

4. Healthcare organisations, specifically NHS should continue to provide online step by step frameworks and 'red flag' signs and symptoms to aid consumer decision making when a medical or healthcare incident has occurred. This recommendation is based on findings in section 5.2 and 6.4.4.1, this is discussed in sections 7.2.3, 8.3.3.1 and 8.3.4.1. The findings highlight consumer use of NHS websites and specifically the use of a questioning framework used as an aid to consumer healthcare related decision making).

5. Healthcare organisations should undertake more research about OTC medicine and consumer information seeking behaviour from a consumer perspective. This will provide feedback, provide a means to assess models and frameworks plus highlight what is working and where there is a need for improvement. This recommendation is based, in relation to models and frameworks on sections 2.3.1, 2.4.1 and discussed in section 7.3. Chapters 5 and 6 provide comprehensive quantitative and qualitative research findings regarding the health consumers perspective about OTC medicine and information seeking behaviour. This is discussed in chapters 7 and 8.

6. Healthcare professionals and pharmacies should improve promotion of the community pharmacy as a source of information as well as a place to purchase medicine. This should emphasise the role of the pharmacist as an expert and the pharmacy services available and promote the positive aspects of visiting the pharmacist to the healthcare consumer, for example, that there is no appointment needed and there is patient confidentiality. This recommendation is based on current literature, section 2.4.1, findings in sections 5.2 and 6.2.2.1 and discussed in section 7.2.1, 8.1.2.1. The role of the community pharmacist for advice and treatment of minor ailments is recognised in the literature (section 2.4.1) and the findings in section 6.2.1.2 and 6.2.2.1 show evidence that the pharmacy is successfully utilised for health information, when it is actually used. However, findings in section 5.2

emphasises that the community pharmacy is not a main source of consumer health information.

7. Drug manufacturers (including manufacturers of none branded OTC medicine) should continue to work with healthcare organisations and the legislation to ensure the safety of the healthcare consumer, identifying potential areas of improvement for patient information. The basis for this recommendation is drawn from the literature in sections 2.3.2, 2.2.4, 2.2.5, and research findings in section 6.3.2.1. This is discussed in section 8.2.2.1. The literature discusses the current legislation governing certain OTC medicines, whilst the research findings and discussion uses respondents negative experiences regarding OTC medicine.

8. Healthcare consumers should use the appropriate medical service for the health/medical event that is being experienced. The recommendation is based on findings in sections 6.2.2.1 and 6.3.1.2, advice/recommendations and the ability of the drug to treat an illness, respectively. This is discussed in sections 8.1.2.1 and 8.2.1.2. The findings suggest that while many health care consumers choose an appropriate medical service, others do not. Therefore, further education is needed to address this knowledge gap.

9. Healthcare consumers should improve online skills in regard to trust markers, as there is a need to be more aware of privacy policies and site credentials. This extends to social networking sites. The basis for this recommendation is from the findings in section 5.2 which is discussed in section 7.2.8. The evidence shows that privacy policies and site credentials are not a high priority when seeking information online. The qualitative findings suggest instances of poor skills when seeking information online which can results in negative effects, such as anxiety (section 6.5.4.1, discussed in section 8.4.4.1). The online health information consumer needs to be educated in basic online safety skills to ensure confidentiality and be aware of site credentials.

10. Healthcare consumers should use the health information sources available to maximise the benefits of self care and to ensure the safe use of OTC medicine. The recommendation is based on research findings in sections 5.1, 5.2 (quantitative findings), 6.2.1.1, 6.2.2.2, 6.3.1.1, 6.3.2.1, 6.4.1.1 and 6.5.3.1, where positive and negative experiences are described. This is discussed in sections 7.1.7, 7.1.8, 7.1.9, 7.2.1, 8.1.2.1, 8.2.1.2, 8.2.2.1 and 8.3.4.1. The consumer needs to utilise the pharmacist more as a source of health information and to consider using a combination of information sources (section 6.4.4.2). Findings suggest a good uptake on the reading of instructions on OTC medicines and knowledge about reactions with other medicines (sections 5.1, 6.2.2.2) which needs to continue to ensure the safe

use of these drugs. However, findings in section 5.1 (discussed in section 7.1.8) suggest that the consumer is confused about the strength of OTC medicines when compared to the same drug which has been prescribed. This indicates a knowledge gap and the health consumer could benefit education in this matter and awareness of products which are new to the OTC market.

9. 5 Limitations of the Study

The following possible limitations to this study have been identified:

- The main limitation of the study was the use of a convenience sample; this method was employed to contact a large enough sample of healthcare consumers. This may have added an element of bias to the results due to the non-random nature of selection and prevents generalisation to the general public.
- A small proportion of respondents replied to the survey online. This may have added bias in regard to information seeking behaviour and use of social media. It is envisaged that this bias, should it exist, would be minimal as the majority of respondents completed a paper based survey.
- Some potential respondents had to be discounted from inclusion as they met the criteria but English was not their first language and they did not consider themselves competent enough in the English language to participate in the survey.
- Possible limitations of question design exist in some questions in the survey. In question 3, a list of specific OTC medicines were listed as they are best selling products. In hindsight these medicines could have been viewed separately, as individual products. This would allow each product to potentially be analysed with Question 4 on frequency of use, giving a breakdown to what medicine type was purchased with what frequency. Question 22 asks the respondent to select the main source of health information and question 29 asks the respondent to indicate how much they agree or disagree about feeling confident that information received on the internet is correct. It is possible that the answer given could be dependent on other factors, such as the severity of illness. A query about a less serious illness could have less importance attached to the information received, than other more serious problems.

9.6 Further Work

Studies researching OTC medicine from the general consumer perspective are still limited in number, especially those that use qualitative methods or investigate information behaviour in this sector. Healthcare organisations such as the NHS, PAGB and the DoH are working collaboratively to develop and implement frameworks for self care so that the NHS is used appropriately. Future research could focus on these specific frameworks to assess if they are having an impact on the health care consumer, from changing health behaviours to investigating further information behaviour.

The use of social media is becoming more evident in health and information seeking, providing a platform to (virtually) meet and discuss issues with individuals who have had or are having similar experiences with health related matters. Whilst research exists about social media, further exploration into health related social networks could give insights into the information behaviour exhibited in these specific information grounds. Trust issues surrounding social media are potential areas of exploration. Issues such as trusting that the health information is correct, to confidentiality, anonymity, information lifecycle, sharing information and permission to share information are conceivable areas of investigation from the consumer perspective.

What is good health? Health status remains subjective and a matter of personal opinion. One person's concept of being in good health can differ from another individual's. There is scope to further investigate what is defined by good health from the healthcare consumer perspective and what it means to them.

Two types of healthcare consumers are identified in the quantitative discussion in relation to OTC medicine purchasing habits. These are the routine purchasers and the spontaneous purchasers. There is the potential to investigate these purchasing routines in greater depth, to gain insight into why these specific times and what illness the individual might suffer that may warrant spontaneous or planned purchases.

9. 7 Contributions

The thesis has made original contributions to research for a number of reasons:

- There is a general lack of research documenting health consumer's attitude and opinion to OTC medicine in England, this research has sought to address this.

- This is the only research to use qualitative, CIT, methods to evaluate successful and unsuccessful episodes of treatment using OTC medicine from a general user perspective.

- Little or no research exists to investigate links between OTC medicine use and information seeking in England. Evidence was found that consumers do employ information seeking behaviour and information behaviours (sections 5.2, 6.4.1.1, 6.4.1.2). Research findings also provided evidence of how the health consumer used the information (sections 6.4.4.1, 6.4.4.2).

- The approach to consumer health information seeking behaviour is from a generalised non-specific perspective, which is not focusing on one specific illness, demographic or one method of information seeking.

- The study is placed at a specific stage of the information behaviour evolutionary timeline providing context and insight into the information behaviours of healthcare consumers that is relevant at this present juncture in the changing frameworks underpinning self treatment and the evolving methods of seeking health information.

This study is potentially beneficial to a number of stakeholders involved with health, medicine and information. Of particular benefit are organisations such as the NHS, DoH, PAGB, pharmaceutical companies and the healthcare consumer. The research provides a relevant picture of how the consumer views OTC medicine and health information seeking, providing an insight into consumer attitudes and opinions to OTC medicine and health information seeking through quantitative and qualitative methods. Therefore, the employment of a dual methodology provides statistical findings and actual experiences from the health consumer perspective to promote understanding of the issues that are faced. This may be of value to the identified stakeholders to promote deeper understanding of the of the research area.

In addition to the views and opinions of the healthcare consumer, the study has highlighted strengths and weaknesses that are displayed by the consumer when implementing self care and health information seeking and how these can interrelate. Specifically, sources for health information were not only identified, but the consumer use and exchange of information was demonstrated in this health context. Finally, the research reflects the

changing face of health information seeking from a consumer perspective identifying the emergence of social media sites as sources for health information. The use of social media, as a health information resource, may benefit organisations such as the NHS and PAGB in regards to the provision of health information to the consumer, providing a means to disseminate frameworks and models for self care to the general population.

References

Anekwe,L.,2008. *Pharmacists to sell diclofenac.*[online]
http://www.pulsetoday.co.uk/newsarticle-content/-/article_display_list/10987406/pharmacists-to-sell-diclofenac, [accessed 26.1.11].

Anthony,J.C., Breitner,J.C., Zandi,P.P., Meyer,M.R., Jurasova.I., Norton,M.C., & Stone,S.V.,2000. Reduced prevalence of AD in users of NSAIDs and H2 receptor antagonists: the Cache County study. *Neurology* [online], 54(11) 2066-71. http://www.neurology.org/content/54/11/2066.full.pdf#page=1&view=FitH [accessed 4.6.11].

Aronson,J.K.,2004. Editors' view.Over-the-counter medicines. *British Journal of Clinical Pharmacology*, 58(3),231-34.

Baker,LM., Wagner,T.H. ,Singer,S. & Bundorf,M.K.,2003. Use of the internet and email for health care information. Results from a national survey. *Journal of the American Medical Association.* 289(18), 2401-2406.

Baker,L,M,. 1995. A new method for studying patient information needs and information seeking patterns. In: *International Symposium on Health Information Research*, Sheffield. 67-75.

Ball,K. & Wilde.M.,1989. OTC medicines misuse in West Cumbria*, Pharmaceutical Journal*, 242(6516),40.

Bawden,D. & Robinson,L.,2008. The Dark Side of information: overload anxiety and other paradoxes and pathologies, *Journal of Information Science*, 35(2), 180-191.

Beech, P. & Norman, I.J., 1995. Patients' perceptions of the quality of psychiatric nursing care: findings from a small-scale descriptive study. *Journal of Clinical Nursing*, (4) 117-123.

Belkin,N.J.,Brooks,H.M.,Oddy,R.N. 1982. Ask for information retrieval. *Journal of Documentation*, (38),61-71.

Bissell,P. & Anderson,C.,2003. Supplying emergency contraception via community pharmacies in the UK: reflections on the experiences of users and providers, *Social Science & Medicine* [online], 57(12),2367-2378. http://www.sciencedirect.com/science/article/pii/S0277953603001291>*,* [accessed 18.3.11].

Bitner, M.J., 1990. Evaluating service encounters the effects of physical surroundings and employee responses. *Journal of Marketing*, (54) 69-82.

Bitner, M.J., Booms, B.H. & Tetreault, M.S., 1989. *Critical incidents in service encounters. Designing a Winning Service Strategy*. Chicago: American Marketing Association.

Bitner, M.J., Nyquist, J.D. & Booms, B.H., 1985. The critical incident as a technique for analysing the service encounter. *Service Marketing in a Changing Environment.* Chicago: American Marketing Association.

BMA, 2005. *Over – the – counter medication*, [online] http://www.blenkinsopp.co.uk/BMAreportOTCmeds.pdf, [accessed 22.3.11].

BNF, 2005. *BNF 50 September 2005.* London: BMJ Publishing Group Ltd and the Royal Pharmaceutical Society of Great Britain.

Bjorkman,D.J.,1998. The effect of aspirin and nonsteroidal anti-inflammatory drugs on prostaglandins. *The American Journal of Medicine*, 105(1B), 8S-12S

Bogin,B., 1999. *Patterns in personal growth*. Cambridge,UK: Cambridge University Press.

Boundless.com., 2016. Social Networks. [online], http://www.boundless.com, [accessed 25.3.16].

Borgers,R., Mullem,P.D., Meertens,R., Rijken,M., Eussen,G., Plagge,I., Visser,A.P., Blijham.G,H., 1993. The information seeking behaviour of cancer outpatients: a description of the situation. *Patient Education and Counselling*, (22), 35-46.

Borne,R.F., 1995. Nonsteroidal anti-inflammatory drugs. In: Foye,W.O., Lemke,T.I. & Williams,D.A., eds., *Nonsteroidal Anti-inflammatory Drugs: Principles of Medicinal Chemistry*, 4th ed.Maryland: Williams & Wilkins, 544-545.

Bradley, C.P., 1992. Uncomfortable prescribing decisions: a critical incident study. *British Medical Journal,* 304, 295-296.

Briggs,P., Burford,.B, De Angeli,A. & Lynch,P.,2004. Trust in online advice. *Social Science Computer Review*, 20(3), 321-332.

Bryman, A., 2012. *Social research methods,* 4th ed. Oxford: Oxford University Press.

 Burns, A.C., Williams, L.A. & Maxham, T.,2000. Narrative text biases attending the critical incidents technique [online], *Qualitative Market Research: An International Journal,* 3(4), 178-186. [online,] www.emeraldinsight.com/journals.htm?articleid=858393, [accessed 07.05.12].

Butalia,S., Leung,A.A., Ghali,W.A. & Rabi,D.M.,2011. Aspirin effect on the incidence of major adverse cardiovascular events in patients with diabetes mellitus: a systematic review and meta-analysis, *Cardiovascular Diabetology* [online], 10(25), http://www.cardiab.com/content/10/1/25 [accessed 4.6.11].

Byrne, M., 2002. Research corner critical incident technique as a qualitative research method, *AORN Journal*, 74(4), 536.

Cabri,W.& Di Fabio,R.,2000. *From bench to market: the evolution of chemical synthesis.* Oxford: Oxford University Press.

Cameron,P., Corbett,K., Duncan,C., Hegyi,K., Maxwell,H., Burton,P.F., 1994. Information needs of hospital patients: a survey of satisfaction levels in a large city hospital. *Journal of Documentation.* 50, 10-23.

Cano Vaegas-Machuca,E., Mondejar-Marin,B., Navarro-Munoz,S., Perez-Molina,I., Garrido-Robres, J.A. & Alvarez-Tejerina,A.,2006. Recurrent aseptic meningitis secondary to taking ibuprofen and ketorolac. *Revista de Neurologia* [online], 42(4) 217-219. http://www.ncbi.nlm.nih.gov/pubmed/16521060 [accessed 3.3.11].

Chandler,S., 2015. Diseases that have flu symptoms, *Livestrong.com*, [online], http://www.livestrong.com/article/70760-diseases-flu-symptoms [accessed 23.1.17].

Charmaz,K., 2006. Constructing grounded theory: A *practical guide through qualitative analysis.* London, UK: Sage.

Chaudry, A.S. & Al-Sagheer, L., 2011. Information behaviour of journalists:analysis of critical incidents of information finding and use [online], *Asia-Pacific Conference Library & Information Education & Practice.* http://eprints.uitm.edu.my/3957/1/SP_IBO11_35.pdf, [accessed 14.05.12].

Chell.E., 1998. Critical incident technique. In: Symon,G. & Cassel,.C., eds. *Qualitative Methods and Analysis in Organisational Research: A Practical Guide.* London: Sage, pp 51-72.

Cho,J.,Y., Lee,E.,2014. Reducing Confusion about Grounded Theory and Qualitative Content Analysis: Similarities and Differences. *The Qualitative Report. [*online], 19,64, 1-20, http://www.nova.edu/ssss/QR/QR/cho64.pdf [accessed 20.11.2016].

Collins Gem., 2003. English Dictionary. 11th ed. Glasgow. Harper Collins.

Cox,A. 2014 ,Pharmacists must move with the times, *The Pharmaceutical Journal*.[online] http://www.pharmaceutical-journal.com [accessed 11.11.14].

Cox, K., Bergen, A. & Norman, I.J., 1993. Exploring consumer views of care provided by the Macmillan nurse using the critical incident technique. *Journal of Advanced Nursing*, 18 408-415.

Creswell, J.W., 1998. *Qualitative inquiry and research design choosing among five traditions.* London: Sage Publications.

Davis, P.J., 2006. Critical incident technique: a learning intervention for organizational problem solving. *Development and Learning in Organisations*, 13, 16.

Department of Health., 2010. *Equity and excellence: Liberating the NHS.* White Paper.

Dervin,B., 2005. *Welcome to the Sense-making Methodology Site*. [online] http://communication.sbs.ohio-state.edu/sense-making/, [accessed 12.1.11].

Dictionary.com.,2012. [online] http://dictionary.reference.com/browse/critical?s=t, [accessed 23.08.12].

Dictionary.com., 2016. [online] http://dictionary.com/browse/social-network?qsrc=2446, [accessed 27.3.16].

Digitalhealth.net., 2011, NHS choices sees jump in flu searches. [online] http://www.digitalhealth.net/news/26467/nhs-choices-sees-jump-in-flu-searches [accessed 30.11.2016].

Douglas, J.A., McClelland, R., Davies, J. & Sudbury, L., 2009. Using critical incident technique (CIT) to capture the voice of the student. *The TQM Journal* [online], 21(4) 305-318.www.emeraldinsight.com/1754-2731.htm, [accessed 20.04.2012].

Douglas, J., McClelland, R. & Davies., 2008. The development of a conceptual model of student satisfaction with their experience in higher education, *Quality Assurance in Education*, [online] 16(1) 19-35.http://www.emeraldinsight.com/journals.htm?articleid=1798786, [accessed 16.01.12].

Douglas-Hoffman, K., Kelly, S.W. & Chung, B.C., 2003. A CIT investigation of service-scope failures and associated recovery strategies [online], *Journal of Service Marketing,* 17(4) 322-40.http://www.emeraldinsight.com/journals.htm?articleid=1657862, [accessed 21.01.12].

Douzenis,A., Michopoulos,I. & Lykouras,L.,2006. Sulbutiamine, an 'innocent' over the counter drug, interferes with therapeutic outcome of bipolar disorder., *World Journal of Biological Psychiatry*, 7(3),183-185.

Ellis,D., 1989. A behavioural approach to information retrieval design. *Journal of Documentation.* 45(3) 171-212.

Ernest,D., Chia,M. & Corallo,C.E., 2010. Profound hypokalaemia due to Nurofen Plus and Red Bull misuse*, Critical Care and Resuscitation* [online], 12(2)109-10. http://www.ncbi.nlm.nih.gov/pubmed?term=ernest%202010%20profound%20hypokalaemia%20due%20to%20nurofen%20plua%20and%20red%20bull [accessed 5.3.11].

Edvardsson, B. & Nilsson-Wittel, L., 2004. The role of satisfiers and dissatisfiers in the service encounter. *Proceedings of the 7th Quality Management and Organisational Development Conference, Monterrey, Mexico.*

Edvardsson, B., 1998. Causes of customer dissatisfaction – studies of public transport by the critical-incident method. *Managing Service Quality*, 8(3) 189-97.

Edvardsson, B., 1992. Service breakdowns, a study of critical incidents in an airline. *International Journal of Service Industry Management,* 3(4) 17-29.

Flanagan,J.C,,1954.*The critical incident technique*. Psychology Bulletin, 51:327-58.

Flanagan, J.C., 1947. *The aviation psychology program in the army air forces.* Washington: U.S. Government Printing Office.

Fisher, S. & Oulton, T., 1999. The critical incident technique in library and information management research. *Education for Information,* 17(2), 113-126.

Ford,N., 2004. Towards a model of learning for educational informatics. *Journal of Documentation*, 60(2), 183-225.

Frei,N.Y., Nielsen,S., Dobbin, M.D. & Tobin,C.L.,2010. Serious morbidity associated with misuse of over-the-counter codeine-ibuprofen analgesics: a series of 27 cases. *Medical Journal of Australia* [online], 193(5), 294-6. http://www.mja.com.au/public/issues/193_05_060910/fre11108 [Accessed 5.5.11].

Friedla,E.,2003. *Clinical Edit Criteria Proposal.*[online] http://www.dss.mo.gov/mhd/cs/pharmacy/pdf/thalomis.pdf , [accessed 30.8.11].

Gmtu.gov.uk, [online] http://www.gmtu.gov.uk/about.html, [accessed 05.09.12].

Gould,B.E,. 2002. *Pathophysiology for the Health Professions*. (2nd ed) , Pennsylvania: Saunders.

Grant, N.K. & Hrycak, N., 1987. Use of the critical incident technique to elicit the opinions ofresidents of long-term-care facilities about their care. *Nursing Homes* May/June, 38-44.

Grant, N.K., Reimer, M. & Bannatyne, J. 1996. Indicators of quality in long-term care facilities. *International Journal of Nursing Studies,* 33 469-478.

Griffin,J.P.,2004.Venetian treacle and the foundation of medicines regulation*. British Journal of Clinical Pharmacology* [online], 58(3),317-325. http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2125.2004.02147.x/abstract [accessed 18.7.11].

Groat,L.,Wang,D., (2002). *Architectural research methods.* New York, NY: Wiley & Sons.

Hamer, J., 2003. Coming out: gay males' information seeking. *School Libraries Worldwide,* 9(2) 73-79.

Harrison,J. & Davies,K.,2007.The information-seeking behaviour of doctors: a review of the evidence*, Health Information and Libraries Journal,* 24(2), 78-94.

Hawton,K.,Townsend,E.,Deeks,J.,Appleby,L.,Gunnell,D.,Bennewith,O.,Cooper,J. 2001. Effects of legislation restricting pack sizes of paracetamol and salicylate self poisoning in the United Kingdon: before and after study, *BMJ*, 322(7296)1203, [online] http://www.ncbi.nlm.nih.gov/pmc/articles/PMC31616/ [accessed 2.4.2014].

Hendrickson,R.G. & Bizovi,K.E., 2006. Acetaminophen. In:Nelson,L.H., Flomenbaum,N. & Goldfrank,L.R., eds. *Goldfrank's toxicologic emergencies.* New York: McGraw-Hill, pp525.

Hettlage, R. & Steinlin, M., 2006. *The critical incident technique in knowledge management related contexts. A tool for exploration/planning, evaluation and empowerment/animation*. [online] http://www.click4it.org/images/6/68/Critical_IncidentTechnique_in_KM.pdf,[accessed 05.05.12].

Hodges,D., McLachlan,J.C. & Finn,G.M.,2009. Exploring reflective 'critical incident' documentation of professionalism lapses in a medical undergraduate setting, *BioMed Central Medical Education.* [online], 9(44), http://www.biomedcentral.com/1472-6920/9/44 [accessed 3.8.11].

Hodgson,D.,Helvenston,P.A. 2006. The emergence of the representation of animals in palaeoart: Insights from evolution and cognition, limbic and visual systems for the human brain. Rock Art Research 23(1), 3-40.

Hughes,G.F., McElnay,J.C., Hughes,C.M. & McKenna,P.,1999. Abuse/misuse of non-prescription drugs, *Pharmacy World and Science* [online], 21(6),251-255. http://www.springerlink.com/content/nv48774616r25126/ [accessed 11.3.11].

Hughes, H., Williamson, K. & Lloyd, A. 2007. Critical incident technique [online], Lipu, S.
 (ed). *Exploring methods in information literacy research*.
http://eprints.qut.edu.au/17545/1/17545.pdf, [accessed 14.05.12].

Hughes,L.,Whittlesea,C. & Luscombe,D.,2002. Patients' knowledge and perceptions of the side-effects of OTC medication, *Journal of Clinical Pharmacy and Therapeutics* [online], 27(4), 243-248. http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2710.2002.00416.x/abstract, [accessed 11.5.11].

InternetWorldStats., 2011. [online] http://www.internetworldstats.com/stats4.htm, [accessed 30.8.11].

InternetWorldStats., 2016. Internet Growth Statistics [online] http://www.internetworldstats.com, [accessed 29.3.16].

Jenkins,C., Costello,J. & Hodge,L.,2004. Systematic review of prevalence of aspirin induced asthma and its implications for clinical practice. *British Medical Journal* [online], 328(434),1-7. http://www.bmj.com/content/328/7437/434.full?sid=299240e1-86b1-4787-8222-60c28c5f5c07, [accessed 27.1.11].

Johnson,J.D., Meischke,H. 1991. Women's preferences for cancer information from specific communication channels. *American Behavioural Scientist*, (34), 742-755.

Johnson,J.D., Meischke,H. 1991. Cancer information: women's source and content preferences. *Journal of Health Care Marketing,* (11), 37-44.

Johnston, R., 2004. Towards a better understanding of service excellence. *Managing Service Quality*, 14(3) 129-33.

Jones,R., 2006. Apothecaries, physicians and surgeons. *British Journal of General Practice* [online], 56(524): 232-233. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1828274/, [accessed 10.6.11].

Jones,R., 2008. General practice: past, present and future. In: Hastie.A, Stephenson.A, eds. *Choosing General Practice: Your Career Guide.* London: Blackwell Publishing,pp1-7. Kent.

Jourard, S.M., 1971. *Self-disclosure: an experimental analysis of the transparent self.* New York: Wiley-Interscience.

Keaveney, S.M., 1995. Customer switching behaviour in service industries: an exploratory study. *Journal of Marketin*g, (59) 71-82.

Kemppainen, J.K., 2000. The critical incident technique and nursing care quality research [online], *Journal of Advanced Nursing,* 32(5), 1264-1271.http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2648.2000.0159.x/pdf, [accessed 31.01.12].

Kemppainen, J., O'Brien, L., Williams, H., Evans, L., Newman-Weiner, K. & Holzemer, W., 1999. Quantifying patient engagement with nurses: a validation of a scale with AIDS patients. *Outcomes Management for Nursing Practice,* 3, 167-174.

Kent, G., Wills, G., Faulkner, A. & Parry, G., 1996. Patient reactions to met and unmet psychological need: a critical incident analysis. *Patient Education and Counseling*, 28 187-190.

King's Fund.,2004. Public attitudes to public health policy [online]*,* http://www.commed.vcu.edu/introPH/Introduction/attitudes_of_%20public04.pdf [accessed 30.11.2016].

Kuhlthau,C.C., 1991. Inside the search process: information seeking from the user's perspective. *Journal of the American Society for Information Science*, 42, 361-371.

Kumar,P. & Clark,M., 2002. *Clinical Medicine*, 5th ed. Edinburgh: W.B.Saunders.

Krohne,H,W., 1993. Vigilance and cognitive avoidance as concepts in coping research. In.H.W Krohne (ed). Attention and avoidance: strategies in coping with aversiveness (Chapter2). H.W. Seattle: Hogrefe and Huber.

Lee,A.C.W., Chan,R. & So,K.T., 2004. A case of probable codeine poisoning in a young infant after the use of a proprietary cough and cold medicine, *Hong Kong Medical Journal* [online], 10(4), 285-287. http://www.hkmj.org/abstracts/v10n4/285.htm*,* [accessed 27.1.11].

Lewis, J.R. & Williamson, V, 1995. Examining patient perceptions of quality care in general practice: comparison of quantitative and qualitative methods [online], *British Journal of General Practice*, 45, 249-

253.http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1239230/pdf/brjgenprac00020-0029.pdf
,[accessed 20.01.12].

Lewis,P.J. & Tully,M.P.,2009. Uncomfortable prescribing decisions in hospitals: the impact of teamwork, *Journal of the Royal Society of Medicine* [online] 102(11), 481-488. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2770359/?tool=pubmed, [accessed 9.8.11].

Lincoln, Y.S. & Guba, E.G., 1985. *Naturalistic Inquiry,* London: Sage.

Lock.K., (1996). Rewriting the discovery of grounded theory after 25 years?, *Journal of Management Inquiry*, 5, 239-45.

Lockshin, L. & McDougall, G., 1998. Service problems and recovery strategies: an examination of the critical incident technique in a business-to-business market. *International Journal of Retail & Distribution Management*, 26(11) 429-38.

Longo, B., Connor, G. & Barnhart, T., 1993. Using the critical incident survey to assess hospital service quality, *Journal of Hospital Marketing,* 7 91-100.

Mangione, T.W., 1995. *Mail surveys: improving the quality*. Thousand Oaks California: Sage.

Marchionini,G.,1989. Information – seeking strategies of novices using a full-text electronic encyclopedia. *Journal of the American Soc. For Information Science*, 40, 54-66.

Marrelli, A.F., 2005. The performance technologist's toolbox: critical incidents, *Performance Improvement* [online], 44(10), 40-44.www.ispi.org/pdf/suggestedReading/ArticleSix_CriticalIncidents.pdf [accessed 07.01.12].

Martinez-Silveira, M.S. & Oddone, N. 2008. Information-seeking behaviour of medical residents in clinical practice in bahia, brazil, *Journal of the Medical Library Association*, [online]' 96(4) 381-384.http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2568854/pdf/mlab-96-04-381.pdf, [accessed 14.05.12].

Medicines Act, 1968. [online], http://www.legislation.gov.uk/ukpga/1968/67/contents/enacted, [accessed 28.1.11].

Miller, N.E., 1947. *Psychological research on pilot training*, Washington: U.S. Government Printing Office.

Miller,S,M.,Mangan,C.E. 1983. Interesting effects of information and coping style in adapting to gynaecological stress: should a doctor tell all? *Journal of Personality and Social Psychology*. 45.223-236.

Minghella, E. & Benson, A., 1995. Developing reflective practice in mental health nursing through critical incident analysis. *Journal of Advanced Nursing*, 21, 205-213.

Mintel.,2004 Spend on health. [online], http://reports.mintel.com/display/4325/ [accessed 20.10.16].

Moore,N., Van Ganse,E. & Le Parc,J.M.,1999. The PAIN study: paracetamol, aspirin and ibuprofen new tolerability study. *Clinical Drug Investment*, 18(2),89-98.

MORI, 2007. *Just who does the internet reach*? [online] http://www.ipsos-mori.com/publications/rmw/just-who-does-the-internet-reach.shtml, [Accessed 5 January 2011].

National Pharmaceutical Association.,n.d. [online] http://npa.journalistpresslounge.com [accessed 18.4.07].

NESTA, 2014. 'Benefit of the doubt' is the basis for prescribing antibiotics, finds Longitude survey. [online] http://www.nesta.org.uk [accessed 23.10.14].

NHS Choices. 2014. What age can children buy over the counter (OTC) medicine? [online] http://www.nhs.uk/chq/Pages/1009.aspx?CategoryID=73 [accessed 2.2.16].

NICE, 2014. Public health guideline Draft scope, [online] https://www.nice.org.uk/guidance/gid-phg89/documents/antimicrobial-resistance-changing-riskrelated-behaviours-in-the-general-population-draft-scope2 [accessed 3.12.15].

Norman, I.J., redfern, S.J., Tomalin, D.A. & Oliver.S., 1992. Developing Flanagan's critical incident technique to elicit indicators of high and low quality nursing care from patients and their nurses. *Journal of Advanced Nursing*, 17, 590-600.

Norton,S., 2006. The Pharmacology of Mithridatum: A 2000 – Year- Old Remedy. *Molecular Interventions.* 6(2),60-66.

Nuffieldbioethics.org.,2014. Online purchasing of pharmaceuticals, [online], http://nuffieldbioethics.org/wp-content/uploads/2014/07/Personalised-healthcare-Chapter-7-Online-purchasing-of-pharmaceuticals.pdf [accessed 23.10.16].

Oates, B.J., 2007. *Researching information systems and computing.* London: Sage Publications.

Oppenheim, A.N., 1992. *Questionnaire design, interviewing and attitude measurement.* London. New York: Continuum.

O'Driscoll,M.P. & Cooper,C.L.,1994.Coping with work related stress: A critique of existing measures and proposal for an alternative methodology.*Journal of Occupational and Organizational Psychology*, [online], 67(4),343-54. Oxford Dictionaries., 2016. [online] http://www.oxforddictionaries.com, [accessed 27.3.2016].

Oxford Dictionaries., 2016. [online] http://www.oxforddictionaries.com, [accessed 27.3.2016].

PAGB,2015a *Pharmacy in Practice*. [online], http://pharmacyinpractice.org/category/pagb/[accessed 14.1.16].

PAGB, 2015b. PAGB Annual Review Opportunities and Challenges: What does the future hold? [online] http://www.pagb.co.uk/publications/pdfs/annualreview2015.pdf, [accessed 12.2.16].

PAGB, 2014 Treat Yourself Better with Pharmacist Advice. [online], http://www.pagb.co.uk/media/releases.html, [accessed 15.11.15].

PAGB, 2011. Increase in visits to NHS Choices shows public confidence in self care [online] http://www.pagb.co.uk/pressarea/releases/NHSChoices10.1.11.pdf, [accessed 11.3.11].

PAGB, 2010a. Delivering a strategy for real self care. [online], http://www.pagb.co.uk/pressarea/releases/AnnualConference17.6.10.pdf, [accessed 11.4.11].

PAGB, 2010b. OTC Directory 2010/2011 Treatments for common ailments. London. Communications International Group.

PAGB, 2010c. SymphonyIRI Group 2009 UK OTC Market Summary. [online], http://www.pagb.co.uk/information/PDFs/2010marketfigures, [accessed 25.3.11].

PAGB, 2009a. No need for further restrictions on cold remedies containing pseudoephedrine.
[online],http://www.pagb.co.uk/pressarea/releases/Pseudoephedrine29.07.09, [accessed 25.3.11].

PAGB, 2009b. Making the case for the self care of minor ailments, [online], http://www.selfcareforum.org/wp-content/uploads/2011/07/Minorailmentsresearch09.pdf [accessed 10.4.2015].

PAGB, 2008a. *Q&A on Branded and Generic/Own Label OTC Medicines*.[online], http://www.pagb.co.uk/pressarea/releases/brandsandgenerics, [Accessed 3.2. 2011].

PAGB, 2008b. *Driving the self care agenda.* [online], http://www.pagb.co.uk/information/PDFs/AndyTismanarticle. [accessed 3.2.11].

PAGB, 2005. *A summary profile of the OTC consumer.* [online],http://www.pagb.co.uk/information/PDFs/Summaryprofile.pdf, [accessed 3.2.11].

PAGB, 1997. *A Picture of Health.[*online], http://www.pagb.co.uk/information/PDF/Pictureofhealth.pdf, [accessed 3.2.11].

PAGB, BMRB., 1997. Every day healthcare 2. [online], http://www.selfcareforu.org/wp-content/uploads/2011/07/BMRBstudy1997.pdf [accessed 20.10.2016].

Pagliari,C. & Gregor,P., 2004.*Literature review of traditional research databases.* [online],http://www.sdo.1shtm.ac.uk/ehealth.html, [accessed 11.1.11].

Parsons,T., 1951. Illness and the Role of the Physician: A Sociological Perspective, *American Journal of Orthopsychiatry.* 21(3),452-460.

Paxton,R, & Chapple,P., 1996. Misuse of over-the-counter medicines: A survey in one English county*. Pharmaceutical Journal.* 256,313-5.

Pew Internet Research, 2002.Vital decisions: how internet users decide what information to trust when they or their loved ones are sick.[online], http://www.pewinternet.org/~/media//Files/Reports/2002/PIP_Vital_Decisions_May2002*,* [accessed 11.1.11].

Pew Research Center, 2003. Health searches and email have become more common place, but there is room for improvement in searches and overall internet access. [online], http://www.pewinternet.org/Reports/2003/Internet-Health-Resources/1-Summary-of-Findings*,* [accessed 6.6.11].

Pickard, A.J., 2007. Research methods in information. London: Facet publishing.

Powell,J., Inglis,N., Ronnie,J., Large,S., 2011. The Characteristics and Motivations of Online Health Information Seekers: Cross-Sectional Survey and Qualitative Interview Study, *Journal Medicine Internet Research*, 13 (1) e20 [online], http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3221342/, [accessed 20.1.2016].

Prescott,K., Stratton,R., Freyer,A., Hall,I. & Le Jeune,I.,2009. Detailed analyses of self-poisoning episodes presenting to a large regional teaching hospital in the UK, *The British Journal of Clinical Pharmacology,* 68:2, 260-8.

Prism4 and Readers Digest Association.,1997, Ailments most and least likely to be treated, [online], http://www.selfcareforum.org [accessed 20.10.2016].

Pryce-Jones, M., 1992. Assessing the quality of discharge procedures for elderly people. *Health Services Management*, 88, 23-26.

Public Health England, 2014, English surveillance programme for antimicrobial utilisation and resistance (ESPAUR) Report 2014.

Radford, M.L., 2006. The critical incident technique and the qualitative evaluation of the connecting libraries and schools project [online], *Library Trends*, 55(1) 46-64.http://muse.jhu.edu/login?auth=0&type=summary&url=/journals/library_trends/v055/55.1radford.pdf, [accessed 07.11.11].

Radford, M.L.,1999. *The reference encounter: interpersonal communication in the academic library*. Chicago: ACRL, a Division of the American Library Association.

Raine,C., Webb,D.J. & Maxwell,S.R.J.,2008. The availability of prescription only analgesics purchased from the internet in the UK. *British Journal of Clinical Pharmacology*, 67:2,250-254.

Raju,N., Sobieraj-Teague,M., Hirsh,J., O'Donnell,M. & Eikelboom,J., 2011. Effect of aspirin on mortality in the prevention of cardiovascular disease, *American Journal of Medicine* [online], 124(7),621-629. http://www.amjmed.com/article/S0002-9343(11)00263-4/absract*, [accessed 4.6.11].

Raynor,E., Joyce,A., Twyman,M., Clulow,C., 2005. *Human development: An introduction to the psychodynamics of growth*. Hoboken, NJ: Routledge

Redford, S. & Norman, I., 1999. Quality of nursing care perceived by patients and their nurses: an application of the critical incident technique. Part 1. *Journal of Clinical Nursing*, 8(4) 407-413.

Redman, D.H., Lambrecht, J.J. & stitt-Gohdes,W.L., 2000. The critical incident technique: a tool for qualitative research. *Delta Pi Epsilon Journal*, 42(3) 132-53.

Robinson,L., 2010. Understanding healthcare information, London: Facet Publishing.

Robinson,G.M., Robinson,S., McCarthy,P. & Cameron,C., 2010. Misuse of over-the-counter codeine-containing analgesics: dependence and other adverse effects. *The New Zealand Medical Journal* [online], 123(1317),59-64. http://journal.nzma.org.nz/journal/123-1317/4185/ [accessed 5.3.11].

Rogoff, B. 2003. The cultural nature of human development. New York: Oxford University Press.

Rothwell,P.M, .Fawkes, F.G.R., Belch,J.F.F., Ogawa,H., Warlow,C.P. & Meade,T.W.,2010. Effect of daily aspirin on long-term risk of death due to cancer: analysis of individual patient data from randomised trials, *The Lancet* [online], 377(9759),31-41. http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)62110-1/fulltext, [accessed 6.6.11].

Rothwell,P.M., Wilson,M., Elwin,C., Norrving,B. ,Algra,A., Warlow,C.P. & Meade,T.W.,2010. Long-term effect of aspirin on colorectal cancer incidence and mortality: 20 – year follow-up of five randomised trials, *The Lancet* [online], 376(9754),1741-1750. http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)61543-7/fulltext, [accessed 6.6.11].

Royal Pharmaceutical Society, 2010. *History of Pharmacy.*[online] ,http://www.rpharms.com/about-pharmacy/history-of-pharmacy.asp [accessed 26.1.11].

Ruben, B.R., 1993. What patients remember: a content analysis of critical incidents in health care. *Health Communication*. 5, 99-112.

Rupavate,S., 2016, World pneumonia day – 8 common signs and symptoms of pneumonia. *The Health Site,* [online], http://www.thehealthsite.com/diseases-conditions/9-symptoms-of-pneumonia-you-should-know-about [accessed 23.1.17].

Self Care Campaign., 2010. Self care: an ethical imperative, [online], http://www.selfcareforum.org/wp-content/uploads/2011/07/Self-Care-An-Ethical-Imperative.pdf [accessed 18.09.16].

Serrat, O., 2010. *The critical incident technique* [online], Asian Development bank,http://www.adb.org/sites/default/files/pub/2010/the-critical-incident-technique.pdf, [accessed 31.01.12].

Schluter, J., Seaton, P. & Chaboyer, W., 2008. Critical incident technique: a user's guide for nurse researchers, *JAN Research Methodology*, [online], 61(1) 107-114.http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2648.2007.04490.x/pdf   [accessed 31.01.12].

Shapira-Lishchinsky.O.,2010. Teachers' critical incidents: Ethical dilemmas in teaching practice, Teaching and Teacher Education, 1-9 [online] http://education.biu.ac.il/files/education/shared/TAT_16_DEC_2010.pdf [accessed 6.8.2012].

Sillence,E., Briggs,P., Harris,P. & Fishwick,L., 2007. Going online for health advice: Changes in usage and trust practices over the last five years, *Interacting with Computers* , 19(3),397-406.

Sillence,E., Briggs,P., Harris,P.H. & Fishwick,L.,2007. How do patients evaluate and make use of online health information? *Social Science & Medicine* [online], 64(9),1853 – 1862 http://www.sciencedirect.com/science/article/pii/S0277953607000160, [accessed 14.7.11].

Sinclair,H.K., Bond,C.M. & Hannaford,P.C.,2000. Over the counter ibuprofen: how and why is it used? *Int Journal Pharmacy Practice,* 8(2), 121 -127.

Sinclair,H.K., Bond,C.M. & Hannaford,P.C.,2001. Long term follow up studies of users of non-prescription medicines purchased from community pharmacies: some methodological issues. *Drug Safety*, 24(12),929-938.

Society for Applied Microbiology, 2014. Only 6% of patients admit pushing GPs for antibiotics but they still over prescribe. [online] http://www.sfam.org.uk [accessed 23.10.14].

Spink,A., 2010. Information Behaviour An Evolutionary Instinct, Berlin Heidelberg: Springer

Stauss, B., 1993. Using the critical incident technique in measuring and managing service quality, Scheuing, E. & William, F.C., (eds). *The service quality handbook.* New York: American Management Association.

Strandvik, T. & Liljander, V., 1994. Relationship strength in bank services. *Proceedings from the 1994 research Conference on Relationship Marketing: Theory, Methods and Applications June 11- 13, 1994, Atlanta, Georgia.*

Stevenson,F.A., Leontowitsch,M. & Duggan,C.,2008. Over-the-counter medicines: professional expertise and consumer discourses, *Sociology of Health & Illness* [online],30(6), 913-928. http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9566.2008.01108.x/abstract*,* [accessed 15.6.11].

Suddaby,R.,(2006). From the editors: What grounded theory is not*. Academy of Management Journal ARCHIVE*, 49,4, 633-642.

Survey gizmo, 2010. [online], http://www.surveygizmo.com/survey-blog/survey-response-rates/, [accessed 23.08.12].

Taylor,H. & Leitman,R.,2002. The future use of the internet in four countries in relation to prescriptions, physician communication and health information*. Health Care News*, 2(13)..

The Independent.,2014, Cough Medicines a waste of money, admits NHS. [online] http://www.independent.co.uk [accessed 11.11.14].

Todd, R., 1999. Back to our beginnings: Information utilization, Bertram Brookes and the fundamental equation of information science. *Information Processing and Management*, 35, 851-870.

Trotter,M.I. & Morgan,D.W.,2008. Patients' use of the internet for health related matters: a study of internet usage in 2000 and 2006, *Health Informatics Journal* [online], 14(3), 175-181. http://www.sagepublications.com/content/14/3/175, [accessed 2.8.11].

University of Maryland Medical Center., 2005, Conditions with similar symptoms as: Common cold, [online], http://umm.edu/health/medical/altmed/condition-symptom-links/conditions-with-similar-symptoms-as-common-cold [accessed 23.1.17].

Urquhart, C., Light, A., Thomas, R., Barker, A., Yeoman, A., Cooper, J., Armstrong, C., Fenton, R., Lonsdale, R. & Spink, S., 2003. Critical incident technique and explicitation interviewing in studies of information behaviour. *Library and Information Science Research* [online], 25(1), 63-88.http://hdl.handle.net/2160/170, [accessed 10.12.2011].

Vamvakopoulos,J.K., Kountouri,M., Marshall,T. & Greenfield,S.M.,2008. Lifestyle or life-saving medicines? A primary healthcare professional and consumer opinion survey on over-the-counter statins, *The Annals of Pharmacotherapy*,42(3),413-420.

Vanderschantz,N.,Hinze,A.,Cunningham,S,J.,2014. Sometimes the Internet reads the question wrong: children's search strategies & difficulties. *77th ASIS&T Annual Meeting.*

Van Zuuren,F.J., Wolfs,H,M., 1991. Styles of information seeking under threat: personal and situational aspects of monitoring and blunting. *Personality and Individual Differences*. 12, 141-149.

Villanueva,L.,Thames,L.,McCabe,T.,2012. The Dangers of Codein and CYP2D6 Polymorphisms in Pediatric Patients, [online], http://www.ppag.org/en/articles/printview.asp?1268 [accessed 3.3.13].

Warner-Schmidt,J.I., Vanover,K.E., Chen,E.Y., Marshall,J.J. & Greengard,P.,2011. Antidepressant effects of selective serotonin reuptake inhibitors (SSRIs) are attenuated by anti-inflammatory drugs in mice and humans, *Proceedings of the National Academy of Sciences* [online], 108(22),9262-9267. http://www.pnas.org/content/108/22/9262.abstract, [accessed 4.6.11].

Wazaify,M., Kennedy,S., Hughes,C.M & McElnay,J.C.,2005a. Prevalence of over-the-counter drug-related overdoses at Accident and Emergency departments in Northern Ireland – a retrospective evaluation, *Journal of Clinical Pharmacy and Therapeutics* [online], 30(1),39-44. http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2710.2004.00607.x/absract*, [accessed 27.1.11].

Wazaify,M., Shields,E. ,Hughes,C.M. & McElnay,J.C.,2005b. Societal perspectives on over-the-counter (OTC) medicines, *Journal of Family Practice* [online], 22(2), 170-176. http://fampra.oxfordjournals.org/content/22/2/170.long*, [accessed 22.3.11].

Wazaify,M., Hughes,C.M. & McElnay,J.C.,2006.The implementation of a harm minimisation model for the identification and treatment of over-the-counter drug misuse and abuse in community pharmacies in Northern Ireland, *Patient Education and Counselling* [online], 64(1),136-141. http://www.pec-journal.com/article/S0738-3991(05)00378-2/abstract [accessed 11.3. 2011].

Weights,W., Widdershoven.G., Kok.G.,Tomlow,P. 1993. Patients' information seeking actions and physicians' responses in gynaecological consultations. Qualitative Health Research, 3,398-429.

Weitz,J., Koch,M., Debus,J., Hohler,T., Galle,P.R. & Buchler,M.W.,2005,Colorectal Cancer, *The Lancet*, 365(9454) :153 – 65.

Which?.,2013, Can you trust your local pharmacy's advice?, [online] http://www.which.co.uk/news/2013/05/can-you-trust-your-local-pharmacys-advice-319886/[accessed 11.11.14].

Which?.,2012, Health products you don't need., [online] http://www.which.co.uk/reviews/health-accessories/article/10-health-products-you-don-t-need [accessed 11.11.14].

Williams,P., Nicholas,D. & Huntington,P.,2003. Non use of health information kiosks examined in an information needs context, *Health Information and Libraries Journal* [online], 20(2), 95-103.http://onlinelibrary.wiley.com/doi/10.1046/j.1471-1842.2003.00428.x/abstract*, [accessed 20.6.11].

Winkler,F.,1987. Consumerism in health care: beyond the supermarket model, *Policy and Politics*, 15(1),1-8.

Wilson,T,D,. 2000. Human Information Behaviour. *Informing Science*, 3 (2).

Wilson,T,D.,1999. Models in Information Behaviour Research. *The Journal of Documentation*, 55 (3), 249-270.

Wilson,T,D,. 1997. Trends In... A Critical Review Information Behaviour: An Interdisciplinary Perspective. *Information Processing & Management.* 33 (4) 551 -572.

Wilson,T,D,. 1981. On user studies and information needs. *Journal of Documentation*, 37 3-15.

Wohl,A.S.,1983. *Endangered Lives: Public Health in Victorian Britain.* Cambridge: Harvard UP.

Woolsey,L.K.,1986. The critical incident technique: An innovative qualitative method of research, *Canadian Journal of Counselling*, 20(4),242-254.

WorldWideWebSize.com.,2016., The size of the World Wide Web (The Internet) [online], http://www.worldwidewebsize.com ,[accessed 29.3.16].

Wynn,T., Coolidge,F.L., 2005. The Effect of enhanced working memory on language. *Journal of Human Evolution*, 50,230-231.

 Zach, L., 2005. When is enough enough? Modeling the information – seeking and stopping behaviour of senior arts administrators [online], *Journal of the American Society for Information Science and Technology*, 56(1) 23-35.<http://www.asis.org/awards/When_is_Enough_Enough.pdf>, [accessed 15.05.12].

Zaidman-Zait, A., 2007. Parenting a child with a chochlear implant: a critical incident study, *Journal of Deaf Studies and Deaf Education* [online], 12(2), 221-241.<http://jdsde.oxfordjournals.org/content/12/2/221.long> ,[accessed 9.8.11].

Zandi,P.P.,Anthony,J.C.,Hayden,K.M.,Mehta,K.,Mayer,L. & Breitner,J.C.,2002.Reduced incidence of AD with NSAID but not H2 receptor antagonists: the Cache County Study, *Neurology*, 59(6),880-6.

Zelazo,P.D., Moscovitch,M,. Thompson, E., 2007 (eds) The Cambridge handbook of consciousness. Cambridge. Cambridge University Press.

Zipf,G.K.,1949. Human Behaviour and the Principle of Least Effort: An Introduction to Human Ec1.11]. *Ecology* [online], http://www.nslij-genetics.org/wli/zipf/zipf49-toc.pdf [accessed 11].

Appendix A Questionnaire

Department of Information Science

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Over the Counter Medicine and Health Information Searching in England Survey

Dear Participant,

You have been invited to take part in a survey on behalf of and funded by the Department of Information Science, Loughborough University. The survey is conducted by Erica Prinsloo as part of her PhD studies and supervised by Dr. Janet Harrison and Dr. Ann O'Brien. The subject of the survey is OVER THE COUNTER MEDICINE – these are medicines and products that can be purchased without a prescription and how people find information relating to health. Participants should be 18 or over and have had experience of buying/using over the counter medicine in England.

The survey should take approximately ten minutes to complete and consists of questions about buying over the counter medicine and your opinion about these products, as well as how health information is searched. Participants can withdraw from the survey at any point, should they wish. Please be assured that all information you provide will be kept strictly confidential. It will not be necessary to provide your name or other identifying information. If you wish to be contacted for a short interview you will have the opportunity to leave your email address at the end of the survey. This will be stored separately from the surveys.

Thank you for taking time to participate in this survey. Should you have any questions about the survey please contact Erica Prinsloo.

e.prinsloo@lboro.ac.uk

General Questions about Over the Counter Medicine.

1. How would you describe your general health?
○ Extremely good ○ Very good ○ Good ○ Average ○ Poor
○ Very poor ○ Extremely poor ○ Don't know

2. Do you have any ongoing health issues? ○ Yes ○ No
If yes, it would be appreciated if you could list any ongoing health issues. (Optional)
_____

3. Have you used any over the counter pain killers, cold/flu remedies, cough medicine or allergy medicine, including complementary/alternative medicine, in the last year? (This may be over the counter analgesics – pain killers, anti-histamines for allergies, cough medicines or cold remedies that take the form of tablets, soluble solutions, liquid medicines, creams/ointments or patches).
○ Yes ○ No

4. How frequently do you buy over the counter painkillers, cold/flu remedies, cough medicine or allergy medicine? (tick one)
○ Weekly ○ Monthly ○ Every 3 months ○ Every 6 months ○ Once a year
○ Don't know ○ Other (please specify) _____

5. Is buying a drug brand name of medicine important to you?
○ Yes ○ No ○ Don't know

6. Where do you mainly buy over the counter medicine from? (tick one)
○ Pharmacy ○ Supermarket ○ Local shop/petrol station ○ Internet site
○ Other (please specify) _____

7. What influences your over the counter medicine purchases? (select all that apply)
☐ Price ☐ Special offer ☐ Advert ☐ Recommendation ☐ Prior use ☐ Brand name
☐ Store Name ☐ Other (please specify) _____

8. Have you ever had any side effects that you think were caused by over the counter medicine? ○ Yes ○ No ○ Don't know
If yes, could you please specify your side effects and the medication taken. (Optional)

_____

Opinions about Over the Counter Medicine

Please indicate how much you agree or disagree with the following statements:

9. Over the counter medicines are effective.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

10. Over the counter medicines are reasonably priced.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree
○ Disagree ○ Strongly disagree ○ Don't know

11. I am confident that I can purchase suitable over the counter medicines for myself.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

12. I am confident that I can purchase suitable over the counter medicines for others.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

13. I always read the instructions when using over the counter medicines.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

14. I always follow the instructions when taking over the counter medicine.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

15. There are not enough over the counter medicines available.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

16. Over the counter medicines are not as powerful as the same type of medicine available with a prescription.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

17. Over the counter medicines do not react with other medicines.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

18. Over the counter medicines are not always safe to use.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

19. Over the counter medicines cannot be addictive.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree
○ Strongly disagree ○ Don't know

Consumer Experiences of Using Over the Counter Medicine

20. Please identify a time when you successfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event? What did you do?
What was the outcome or result in regard to what you did?
What made this action effective?
Would you do anything differently?

21. Please identify a time when you unsuccessfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event?
What did you do?
What was the outcome or result in regard to what you did? What made this action ineffective?
Would you do anything differently?

Sources of Healthcare Information

22. What is your main source of health information? (tick one)
◉ General Practitioner ◉ Pharmacist ◉ Newspaper/magazine ◉ TV/radio ◉ Friends and family ◉ Nurse ◉ Internet ◉ Social media ◉ Other (please specify):_____

23. Have you used the internet in the last year to search for health related information?
◉ Yes ◉ No

24. What type of health information have you searched for on the internet?
  (select all that apply)
☐ Diagnosis/symptoms ☐ Self-treatment ☐ Over the counter medicines
☐ Prescription medicines ☐ Healthcare services ☐ General health/wellbeing
☐ Preventative healthcare ☐ Alternative/complementary medicine
☐ Information about an ongoing health issue ☐ Other (please specify) _____

25. What type of internet sites do you get information from? (select all that apply)
☐ Healthcare Organisations (i.e. NHS, NHS Direct, Bupa) ☐ Healthcare Charities
☐ Drug companies ☐ Personal blogs/forums ☐ Help groups ☐ Wikis ☐ Retail
☐ Other (please specify) _____

26. What do you think makes a good health website? (select all that apply)
☐ Easy to navigate ☐ Frequently asked questions section ☐ Links to other sites
☐ Credentials of the site ☐ Site forum ☐ Regularly updated
☐ Other (please specify)_____

27. Have you ever posted a request for health advice on the internet?
◉ Yes ◉ No

28. Have you ever responded to another person's request for health advice on the internet?
◉ Yes ◉ No

Opinions about Internet Based Information

Please indicate the level that you agree or disagree with the following statements

29. I feel confident the information I receive on the internet is correct.
◉ Strongly agree ◉ Agree ◉ Slightly agree ◉ Neutral ◉ Slightly disagree ◉ Disagree
◉ Strongly disagree ◉ Don't know

30. I tend to use the same web sites to gain information.
◉ Strongly agree ◉ Agree ◉ Slightly agree ◉ Neutral ◉ Slightly disagree ◉ Disagree
◉ Strongly disagree ◉ Don't know

31. I would consider buying over the counter medicines online.
◉ Strongly agree ◉ Agree ◉ Slightly agree ◉ Neutral ◉ Slightly disagree
◉ Disagree ◉ Strongly disagree ◉ Don't know

32. I would consider buying over the counter medicines online that are not available in England.
◉ Strongly agree ◉ Agree ◉ Slightly agree ◉ Neutral ◉ Slightly disagree ◉ Disagree
◉ Strongly disagree ◉ Don't know

33. Online information does not influence my over the counter medicine purchases.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree ○ Strongly disagree ○ Don't know

34. The information I get online does not replace the information from a health professional.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree ○ Strongly disagree ○ Don't know

35. I do not always check the sites' privacy policy.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree ○ Strongly disagree ○ Don't know

36. I do not always check the sites' credentials.
○ Strongly agree ○ Agree ○ Slightly agree ○ Neutral ○ Slightly disagree ○ Disagree ○ Strongly disagree ○ Don't know

Consumer Experiences of Finding Healthcare Information

37. Please identify a time when you successfully gained information about a health condition. What were the circumstances leading to the event?
Where did you search?
How did you search?
What was the outcome or result in regard to what you did?
What made this action effective?
Would you do anything differently?

38. Please identify a time when you were unsuccessful in gaining information about a health condition.
What were the circumstances leading to the event? Where did you search?
How did you search?
What was the outcome or result in regard to what you did? What made this action ineffective?
Would you do anything differently?

Some Questions about You

Your answers will be kept completely confidential.
39. Are you male or female?
○ Male ○ Female

40. How old are you?
○ 18 - 24 ○ 25 - 34 ○ 35 - 44 ○ 45 - 54 ○ 55 - 64 ○ 65+

41. In your main job, how many hours a week (including paid and unpaid overtime) do you usually work?
○ 0 - 15 ○ 16 - 30 ○ 31 - 48 ○ 49 or more

42. What is your highest level of education?
○ GCSE ○ A level ○ Vocational Qualification ○ Diploma ○ Professional qualification
○ Degree ○ Higher degree ○ Other (please specify):_____

43. What is your household income?
○ 0 - £9000 ○ £10,000 - £19,000 ○ £20,000 - £29,000 ○ £30,000 - £39,000
○ £40,000 - £49,000 ○ £50,000 - £59,000 ○ £60,000 - £69,000 ○£70,000+
○ Other (please specify):_____

44. What is your ethnic group? (Optional)

A. White

⦿ English/ Welsh/ Scottish/ Northern Irish/ British ◯Irish ◯Gypsy or Irish Traveller
◯Any other White background (please specify) _____

B. Mixed/ multiple ethnic groups

◯ White and Black Caribbean ◯ White and Black African ◯ White and Asian
◯Any other Mixed/ multiple ethnic background (please specify)
_____

C. Asian/ Asian British

◯ Indian ◯ Pakistani ◯ Bangladeshi ◯Chinese ◯Any other Asian background
(please specify) _____

D. Black/ African/ Caribbean/ Black British

◯ African ◯ Caribbean ◯ Any other Black/ African/ Caribbean background (please
specify) _____

E. Other ethnic group

◯ Arab ◯Any other ethnic group (please specify)_____

45. Which, if any, of the following best describes your religion? (Optional)
◯ No religion ◯ Buddhist ◯ Christian (including Church of England, Catholic,
Protestant and other Christian denominations) ◯ Hindu ◯Jewish ◯ Muslim ◯ Sikh
◯ I would prefer not to say ◯ Other (please specify) _____

46. What is your main language?

◯ English
◯ Other (please specify): _____

47. If you would like to be contacted for an interview discussing over the counter
medicine and searching for health information, please leave your email address below.
(Optional) _____

Thank you for completing this survey.

Appendix B Pilot Study

The pilot survey, undertaken in January 2012, took the form of an online questionnaire using convenience sampling and was issued in two stages. The first stage was concerned with the wording of the qualitative, (CIT) areas of the survey. Two examples of CIT questioning were identified, the first example was a short informal question, the second example was more structured detailing specifically what answers were needed. The difference in phrasing what essentially was the same question necessitated an investigation into which style of questioning potential respondents would be more comfortable answering.

Ten individuals were emailed asking them for their preference between two examples of CIT questioning and given the opportunity to provide feedback on their choice.

The examples were 1 and 2. Number one being semi-structured and more open ended than the second example.

Example 1

Recall times when you used over the counter medicine. Remember a time when treatment with over the counter medicine was successful.

Please write down what happened.

What were the factors that made the treatment successful?

Now recall a time when you had an unsuccessful experience when using over the counter medicine.

Please write down what happened.

What were the factors that made the treatment unsuccessful?

Example 2

Please identify a time when you successfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event?

Exactly what did you do?

Would you do anything differently?

Please identify a time when you unsuccessfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event?

Exactly what did you do?

What was the outcome or result in regard to what you did?

What made this action ineffective?

Would you do anything differently?

Of the ten individuals asked to participate eight responded. Five of the respondents indicated that they preferred the more structured questioning approach of the second example. The second example was used in the pilot study, enquiring about the positive and negative experiences of OTC medicine use and the positive and negative experiences of searching for health information.

The second phase of the pilot study comprised of the complete survey. The survey was split into three sections; the first enquiring about over the counter drugs, the second enquired about health information searching and the third section was concerned with demographics. The first two sections included both quantitative and qualitative methods of questioning, the third only employed quantitative questioning.

The second phase of the pilot study was distributed online (see Appendix I for pilot survey), providing each of the 10 potential respondents with a link via email. Eight of the 10 potential participants responded within the deadline of the 31st January 2012.

In response to the feedback received some changes were made to the survey.

> *Question 2. Do you have any ongoing health issues? If yes, please state your ongoing health issues.*

This was changed to: Do you have any ongoing health issues? If yes, it would be appreciated if you could list any ongoing health issues.

> *Question 3. Have you used any over the counter pain killers, cold/flu remedies, cough medicine or allergy medicine, including complementary/alternative medicine, in the last year? If no please go to question 8.*

This was changed to: Have you used any over the counter pain killers, cold/flu remedies, cough medicine or allergy medicine, including complementary/alternative medicine, in the last year? (This may be over the counter analgesics – pain killers, anti-histamines for allergies, cough medicines or cold remedies that take the form of tablets, soluble solutions, liquid medicines, creams/ointments or patches). The filter directing the respondent to question 8 was also deemed unnecessary.

> *Question 8. Have you ever had any side effects that you think were caused by over the counter medicine?*
>
> *8a. If you answered yes to the above question please state what your side effects were and the medicine taken.*

This was changed to: Have you ever had any side effects that you think were caused by over the counter medicine? If yes, could you please specify your side effects and the medication taken.

> *Question 23. Have you used the internet in the last year to search for health related information? (If no please go to question 37).*

This was changed to: Have you used the internet in the last year to search for health related information? Filter was removed so the question was not limited to those who had not used the internet to search for health information in the last year.

This was changed to: What type of internet sites do you get information from? (select all that apply)

Healthcare Organisations (i.e NHS, NHS Direct, Bupa)

Healthcare Charities

Drug Companies

Personal blogs/forums

Help groups

Wikis

Retail

Other (please specify).

Questions 37 and 38

Please identify a time when you (un)successfully gained information about a health condition.

What were the circumstances leading to the event?

What did you do?

What was the outcome or result in regard to what you did?

What made this action (in)effective?

Would you do anything differently?

This was changed to:

Please identify a time when you (un)successfully gained information about a health condition.

What were the circumstances leading to the event?

Where did you search?

What was the outcome of result in regard to what you did?

What made this action (in)effective?

Would you do anything differently?

Questions 4,6,7,22,24,26,43 and 45 had an 'other' option added as a choice of response

Appendix C CIT Responses

CIT question 1

Q20 Please identify a time when you successfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event? What did you do? What was the outcome or result in regard to what you did? What made this action effective? Would you do anything differently?

Abraham Moss

1. Don't have any particular circumstances only common colds and temperature.
2. Hayfever meds help me. No.
3. Headache, running nose, sore throat. Bought some medicine with pharmacist instructions. Result successfully. Getting the medication at appropriate time without stress of waiting to get a prescription from GP. Perhaps keep some flu remedies at home.
4. Suffering from a migraine. Sleep and painkillers (specifically for migraine). I would not do anything differently.
5. I had a cold and bought a cold remedy containing paracetamol and caffeine. It helped relieve my symptoms.
6. Hayfever. Took recommended allergy relief tablets which were effective
7. That happened when I had a cold, I went to the supermarket. I bought some tablets and a syrup. I followed the instructions, I managed to get rid of the symptoms.
8. Allergies. Relief of symptoms. Good knowledge of condition. No.
9. Recently had a cough (chesty/mucus). I purchased a syrup and using less frequently than instructed my cough cleared up rather quickly. This was alongside increased doses of chilli. I would not do anything different
10. Sore throat/flu like symptoms. I had flu-like symptoms and I got paracetamol over the counter. Following the instructions I took the tablets as prescribed and it worked quickly. It was effective because I took it before the symptoms became worse. I wouldn't do anything differently.
11. Headache, paracetamol/ibuprofen – relieved pain pain relief – no.
12. Hayfever. Purchased hayfever tablet, which were effective in treating the symptoms. Would not do anything differently.
13. Used simple linctus for sore throats, rennies to settle indigestion and aspirin/ paracetamol for headaches.
14. Niece needed travel sickness pills. Enquired the difference between brand and pharmacy own. Purchased 'own' as cost less but was effective for her.
15. Treating cold and fever. Taking over the counter paracetamol and drink plenty. Symptoms were controlled. Paracetamol were taken 4x daily. After ¾ days getting better. Do differently by taking vitamin c alongside.

16. Knee pain – football. Treated with ibuprofen. Got better. Anti-inflammatory. I would buy stronger painkillers if available.
17. Hayfever symptoms by taking anti-histamine bought in a supermarket helped to alleviate symptoms.
18. Allergy. Spoke to pharmacist who prescribed medication. Effective because they asked me to come back if not working. Wouldn't do anything differently.
19. Sinus infection causing blocked sinuses/nose, sore throat – bad headache- over 2 weeks. Joint pain.
20. Just for cold and flu I used counter medicines or cough
21. I had the start of flu, got some beechams all in one plus and within 12 hours I felt absolutely fine.
22. I use anti-allergy meds daily.
23. I have bought nurofen capsules and tablets for pain relief when I've been on my periods and for period pain. This in an anti-flammatory and I feel comfortable when taking. I told the pharmacist I have pain and he recommended these to me too.
24. Iron deficiency. Prescription cost more so bought over the counter. Got constipation. It cost me less for the same medicine. Asked the doctor for some other iron tablets which had less side effects (positive or negative?). About 3 years ago had cough. It stayed more than 2 weeks. Got the syrup from pharmacist, cough got better soon. Yes next time I will try the home remedy first then will consult the doctor.
25. When I had bad cold and flu symptoms, I took paracetamol and codeine. I do not usually do this, but did so as I had to make it to work the next day. The medicines did the trick and worked. What made it effective was the fact that I stuck to the recommended dose (two tablets every four hours).
26. Had a headache bought paracetamol for chemist. Headache went after taking tablets. It was the right medicine for my problem. Nothing different.
27. Hayfever, I suffer mild hayfever occasionally and can treat with the over the counter treatment.
28. Headache, treated with paracetamol. Outcome was headache gone. Would do nothing differently.
29. Fever. Fever reduced.
30. Headaches, flu, cold etc.
31. Headache due to blocked nose/cold. Paracetamol did not take headaches away. Inhaled vicks (on other occasions olbas oil) stick. Shortly afterwards headache relieved.
32. Red sore eye. Took advice from the pharmacist and he gave me the right medicine which worked.
33. Using medicine. Good.
34. Frontal headache, had scan, morphine, codeine, eye test – no relief. Had prescription antibiotics. Discussed with colleague – advised Sudafed max strength. Eased the pressure. Relieved the cause.
35. Hayfever. Purchased tesco own brand anti-histamine tablets they worked fine and cheaper than named brands.
36. Hayfever. Rather than go to the doctors I bought hayfever remedy over the counter. This worked fine. I would do again.
37. Thrush – used canestan, had it on prescription before
38. Generally I use over the counter medicine to treat mild flu.

39. Back pain. Strong anti-inflammatory tablets. Painkillers – paracetamol and ibuprofen combined, some exercise to reduce/relieve pain, some relief from the symptoms. It prevented symptoms from getting worse, gave me time to see a GP.
40. An allergic reaction when cleaning up. Used piriton (anti-histamine) and was much better (no sneezing, watering eyes) within an hour.

Altrincham

41. Muscle pain due to fibromyalgia. Purchased anti-inflammatory gel for topical use. It was a topical gel so could target one area of pain. No.
42. I suffer from migraines intermittently and purchased the relevant medicines from over the counter. I found the tablets very effective and would be confident in buying them again.
43. Pulled muscle in neck. Got better. Using ibuprofen as per packet recommendations. No.
44. Hayfever. Browsed supermarket. Bought anti-histamine.
45. Headache. Took ibuprofen, helpful.
46. Hayfever. Runny nose, itchy eyes, sneezing. Went to supermarket – bought tablets. Sneezing stopped etc. No.
47. Hayfever. Piriton. Regular use. No.
48. Suffered a chronic infection of the gums. Used ibuprofen to relieve pain prior to prescribed anti-microbials from dentist. Pain reduced.
49. Pholcodeine cough medicine. I find works 10x better than all the commercial cough remedies and is better priced.
50. Migraine, positive outcome.
51. Psoriasis treatments for scalp and ear area. Shampoo and creams recommended and were effective.
52. Insect bites, near lake, rash could not ease irritation took anti-histamines which helped eventually and Benadryl ointment. Seemed to stem itchiness immediately but only for a couple of hours. GP no help really but gave a different variation of anti-histamines. Small improvement. Now take constantly.
53. Cold/flu. Took cold flu remedy. Enabled me to work. Relieved symptoms.
54. When I had a cold. What was in the medication helped my cold. No.
55. Period pains. Took analgesics – paracetamol and ibuprofen, very effective.
56. Hayfever – bought store branded anti-histamine. They were effective so now buy regularly.
57. Headaches. Took paracetamol.

Broughton

58. Mostly use them for colds and pain relief. Pain is relieved and resting helps as well. I wouldn't do anything differently.
59. Recent flu. Took shops own paracetamol. I had no problems with the medication. I've also bought tesco's own cough medicine. We always have tesco's own hayfever tablets in the house.

60. Minor pains – controlled by over the counter meds. Would do same again.
61. Flu like symptoms. Took OTC medications. Treated the symptoms effectively. Nothing differently.
62. Paracetamol for headaches – very effective. Hayfever medicine very good for my 9 year old son. Don't always think cough medicines work that well. Calpol very good for childrens temperature/unwell.
63. Headache – paracetamol.
64. Infected skin on toe. Asked to speak to pharmacist got advice bought product.
65. Childs broken wrist needed paracetamol and ibuprofen eased the pain. I would do the same again.
66. Migraine
67. Usually only buy painkillers, cough medicines etc. However for a condition such as a rash, I would seek the advice of the pharmacist and if they were able to identify the problem and could recommend an OTC I would follow their advice.
68. I found those pills for constipation they were effective and I will try to change my diet.
69. Cough/cold – bought basic linctus cough mixture and paracetamol tablets. The treatment was effective in that it suppressed the symptoms.
70. Chesty cough, bought cough medicine, it helped a little, no.
71. My son had hives, I went to the nearest pharmacy for calamine lotion and they advised me to get anti-histamine. All symptoms were gone the next day.
72. Hangover. Alka seltzer. It worked. Same again next time.
73. Headache, went to shop, got painkillers, the headache went.
74. Just general headaches I buy paracetamol. For anything more serious would consult GP.
75. Cold and flu. Unwell. Felt better. Painkiller and paracetamol. No.

Chorlton

76. Calpol. Needed to relieve childs pain due to sore throat, yes was effective, wouldn't do anything differently.
77. Treated a headache with ibuprofen, the medicine was effective and I would use it again.
78. Difficult to give specific examples. Usually buy painkillers/calpol for kids/ cold/ sore throat remedies but not that often. They are usually effective and helpful.
79. Headache/neck pain. Took ibuprofen/paracetamol. Pain subsided. Combination of pain killer and placebo I presume. No.
80. Rennies were useful for long time for my heartburn. Now I am on proton pump inhibitors.
81. Caught a cold, bought paracetamol, eased symptoms/made me feel better, effective because (a) it worked! (b) I believed it worked. I do this whenever I get a cold, so I guess I wouldn't differ from this.
82. Few times, headache, sickness and the effective one was the backache, they gave a good painkiller to stop the pain while my GP refused to give me anything.
83. Treating hayfever/ cat allergy. Bought over the counter non-drowsy anti-histamines. I knew what the symptoms were. No.

84. Over the weekend I had an upset stomach. I have used kaolin and morphine before so I bought that from the pharmacy and it worked. I take painkillers for headaches (paracetamol or ibuprofen) which are effective.
85. Chicken pox. Bought anti-histamine – worked really well. Medicine worked. Have recommended to others.
86. Cough. Cough syrup, catarrh pastilles, cough cleared up.
87. For simple headaches and allergic conditions like sneezing in spring (hayfever) so any antihistinic is effective. GPs appointment is hard to get so better to go for these drugs especially when you are yourself a doctor.
88. Period pain. Took codeine and paracetamol. I felt better. No.
89. Child had verruca – bought over the counter treatment from Boots followed instructions. Verruca was effectively treated, would do nothing different.
90. Dry cough for over a week due to cold. Took over the counter syrup. Helped me especially at night. Quality of syrup. No.
91. I mostly buy paracetamol for my children against fever and pain and ibuprofen against migraine type headaches for my son (now 13) and my husband. Paracetamol helps except with tonsillitis. Ibuprofen is less effective according to my son.
92. Cough and sore throat, accompanying cold. Bought throat sweets. Nice, soothing. No.

Levenshulme

93. Pain in my left leg from running. Bought some anti-inflammatory gel to put on the side of pain- this improved the pain, especially with continued use.
94. Sinus. Tesco own brand. Solved prob.
95. A cold – flu. Went to local chemist and took advice about what to take.
96. Conjunctivitis – sore, irritable gooey eye, went to chemist for treatment. The outcome was effective as the condition cleared up.
97. Eye infection. Discussed with pharmacist, who recommended appropriate medicines. Medicine was effective. I would not do anything different.
98. Mainly using painkillers.
99. Cough/cold. Pharmacy. Reduced fever/pain.
100. Headache. Got nurofen. Took tablet as instructed – headache cleared. Not sure. No.
101. Headache – paracetamol. Colds/flu – lemsip.
102. Felt head cold coming on. Beechams flu plus – still able to go to work and mind kids!
103. Cold and flu.
104. Buy tablets, paracetamol to treat headache.
105. I had a verruca I was not sure whether to leave it or treat it as it was painful. I found a suggestion of tea tree oil on to the affected area. I did as was suggested and after a few weeks the verruca went. This action was effective and I would do it again.
106. Headache/ back pain from fall at roller skating. Used paracetamol and hot bath. Would maybe consider something with anti-inflammatory.
107. Bought arnica cream for a soft tissue injury – lessened bruising. Put it on soon after bump on childs leg. Always keep it in cupboard.

108.   I had a cold, took some lemsip, cold disappeared. Yes, take a couple of paracetamol and some natural honey with a mixture of herbal plants.

109.   Molluscum contagiosum successfully treated with essential oil (lemon balm) when GP prescription/advice failed.

110.   Feeling tired and run down. Get advice from complimentary practitioner. Bought tonic over counter in ASDA chemist. Was lacking iron, felt better more energy. No.

111.   Headache – paracetamol, allergic reaction – antihistamines purchased from supermarket or pharmacy. Improved condition. Knowing what needed. No.

112.   Headache, buy paracetamol. Fine. No.

113.   Successfully treated verrucas with over the counter meds. Would use same treatment again.

114.   I had a really bad cough, could not sleep at night. So I got some night nurse and it really helped me sleep during the night.

115.   heartburn.

116.   Had a headache, went to boots pharmacy, bought some nurofen liquid tablets 400g and it was gone within an hour.

117.   Cold, blocked nose, temperature. Used a vicks nose spray and lemsip liquid tabs, they relieved the blocked nose etc.

118.   Headache – analgesics purchased at supermarket. Headache resolved. Analgesics managed pain. No different actions.

119.   Had sore throat. Got aspirin and paracetamol. Yes helped, better in a few days.

120.   I had a headache, took paracetamol, headache went.

121.   For my daughters cold. I knew the doctor wouldn't give me anything so went to the pharmacy. The cold cleared up well. I was in control. No.

122.   Bad headache yesterday. Bought some ibuprofen own brand 200mg. Helped my headache. Wouldn't do anything differently.

Moss Side

123.   Don't buy over the counter medicine.

124.   Sinusitis – bought Sudafed, symptoms alleviated after course of tablets.

125.   Headache. Buy ibuprofen and it works, headache was gone in few hours. No I won't do anything differently.

126.   My daughters high temp! I bought calpol and nurofen gave them to her staggered every 3 hours. They brought down her temp.

127.   My daughter had thrush, I asked our local chemist for advice, they recommended anti fungal cream. Also they didn't push towards a brand named one. The cream worked within 24 hours.

128.   Hayfever, migraine, toothache. Purchased painkillers, hayfever tabz. Hayfever tabs worked after a lot of consumption. Headache went relatively quick, toothache mixed meds paracetamol and ibuprofen. Maybe try alternative with headache and hayfever herbal, natural products.

129.   Have never had one.

130.   Skin allergy due to handling certain plants. Consulted pharmacist who suggested I use an over the counter medicine and proved to be successful. No.

253

131.   Dust in the air, sore throat, medicine, no.

132.   My daughters allergy, bought piriton (anti-allergy) syrup. Got better quickly. No.

133.   General pain killers used for headache – outcome generally successful. If headache particularly bad then use medicine in combination with another. It was effective. Wouldn't do anything different.

134.   Cold/flu – lemsip, regular medication, would use again.

135.   Hard to know for sure.

136.   Heavy cold, bought cold and flu remedy from pharmacist. Alleviated symptoms. No.

137.   Thrush clomazol cream/pessary, cleared infection, prior knowledge, good pharmacist.

138.   I occasionally have low back pain. I buy over the counter ibuprofen as and when I need it. Anti-inflammatories allow me to then carry out appropriate exercise/activities to further reduce the pain, reduce stiffness and increase range of movement.

139.   When I have over trained and the next day I ache, I might take a couple of ibuprofen, it seems to help take away the pain a little.

140.   Cold/headaches, eased symptoms. No.

141.   Management of allergies – purchase of antihistamine tabs in bulk. Son's allergic reaction, taking over the counter anti histamine allowed me to treat him immediately and not wait for prescription.

142.   Itchy skin following being in sun, bought piriton, stopped the itching. Cover up and not go out in the sun for so long.

143.   Had a very bad cold, bought cold relief capsules and sinus relief tablets.

144.   Itchy eye, gunk and swollen, spoke to doc. Regarding conjunctivitis as last time I had it unable to get strong enough drops to clear. Doc told me now available without prescription and I bought from local pharmacy, next time I will not see doc.

145.   I had a cold and used nurofen (I always use nurofen when I have a cold or flu).

146.   Chicken pox in children, bought camomile (calomine?) lotion, stopped the itching. Also bought hedrin for head lice, got rid of them.

147.   Ear infection, asked pharmacist at boots, gave me ear drops, it worked/ cleared up. Not unless it had have been worse.

148.   Had a tickly cough, bought honey/lemon linctus this soothed the irritation, did not need to go to GP. Effective was because was able to buy medicine straight away, did not need to make GP appointment. No.

149.   Insect bite always have over counter cream in house and treat immediately.

150.   Severe headache. Good. Taking ibuprofen. No.

151.   Hayfever. Used anti-histamines.

152.   Eye infection treated, following instructions, infection cleared up. No.

153.   General cough and cold symptoms. Symptoms pretty much cleared up. Probably nothing different next time.

154.   Anti-histamines, hayfever, well controlled, I took as prescribed. Not really.

155. Headache paracetamol. Took two tablets – treated effectively.
156. Hayfever – bought anti-histamine over counter – cleared symptoms. Coughs and colds – bought cough syrup over counter – was successful.
157. Allergy. Daughter had egg allergy when younger and required anti-histamine. Treatment with anti-histamines made symptoms better. No.
158. Max lemsip for bad cold/aches. Relieved symptoms.
159. Bad period cramps. Went to buy feminax brand supermarket no longer stocked. They informed me that co-codamol was the same thing, very pleased as was cheaper and had more tablets. In future I would check ingredients of brand names against store options.
160. Painkillers effective and I would use them in the same way.
161. Cold and flu symptoms, bought a brand used before, symptoms eased off.
162. Feeling unwell, bought some lemsip to treat, felt better as a result
163. Bought flu remedies to treat symptoms of colds and flu. Helped with fever and congestion. Symptoms passed in due course.
164. High temp, good, yes, no.
165. Fingernail infection, back pain.
166. Migraine, went to boots to buy migraleve, took tablets immediately.
167. hayfever – bought anti-histamine, reduced symptoms, take before symptoms come.
168. Headaches (rarely) took paracetamol, made headache better. Wouldn't do anything differently.
169. Headache, effective cure, no.
170. My daughter had a verruca. Someone recommended bazooka which I bought from a sainsburys pharmacy. This cleared up within a short time of treatment.
171. Cold and flu. Took lemsip every day for a week, felt better and could work.
172. Gaviscon used to treat recurrent indigestion issue. No.
173. Diagnosed with chronic urticaria. Bought cetirizine (for urticaria) – seems to work!
174. Muscular pain, took NSAID, effective met expectations, no.
175. Had cold, got medicine, got better.
176. Itching, bought cetirizine, stopped itching, appropriate medicine for condition, no.
177. A cold. High temp, sore throat, runny nose, slight cough. Use all in one cold remedy (which contained paracetamol, pseudoephedrine I think).
178. Childs temp, purchased calpol, successful outcome.
179. season hayfever, used to use a brand that was withdrawn. Now just use different brands, current brands not as effective.
180. Verruca on daughters foot, purchased bazooka from supermarket pharmacy, applied as directed. Verruca disappeared.
181. Pain for headache, went away.
182. Hot paracetamol drinks work really well for me, every four hours.
183. Warts (on the foot of my child) buying homeopathic remedy, the warts disappeared after two weeks. I wouldn't do anything differently.
184. Cystitis and thrush, cured it.
185. Cold, flu, cough all worked with over counter medicine.
186. Headache, pain, went away pain reduced, ibuprofen works, no,no.
187. Headache, headache, positive, the drugs, no.

188. I had suspected swine flu. I went to boots chemist bought metatone. It helped build me up and get back to my normal strength, so it was very effective.

189. I began a new job working with children, picked up a bad case of the flu. This turned into synositis (sinusitis?). I went to the doctors but was recommended otc medicine. This cleared symptoms. Go over the counter first before doctor.

190. Eczema in child. Developed in 1yr old daughter. Pharmacist more helpful than doctor after GP visit and spoke from experience with own children. It probably didn't change how I would do things in future except that it often helps to consult both GP and pharmacist.

191. Hayfever

192. Headache, ibuprofen was taken, pain was relieved, painkillers relieves pain, no.

193. Flu, purchased flu powders, v.effective, no.

194. Had flu – went to the chemist took strong painkillers and felt better.

195. A family member became ill with cold/flu type symptoms and a high temperature. Bought lemsip in tablet form to alleviate the symptoms. I wouldn't do anything different.

196. Aches and pains and cold symptoms, purchased lemsip and flu capsules, it helped but it took time to go completely, no.

197. I normally always buy from prescriptions only which is prescribed by doctors.

198. Heavy menstrual bleeding, ibuprofen reduced pain and blood loss. My mum read about this in a health study, wouldn't do anything differently.

199. My son had a temperature, I treated him with calpol. This was effective and I wouldn't do anything differently next time.

Online

200. Cold/flu . Went to supermarket bought lemsip. Came home used lemsip alleviated symptoms (don't expect to be a cure!). Used according to instructions (not boiled water etc). Maybe look at treating in the early stages if I thought there was an effective medicine.

201. Daughter had chicken pox, very itchy rash. Asked pharmacist for advice, treated the itching with Eurax lotion. Itching eased, child could sleep. Good advice from pharmacy assistant regarding product, saved trip to GP with infectious child. Would not do anything differently.

202. I was on other prescribed medication and had constipation/impactation. I purchased pessaries. They made me able to go to the toilet. What I was able to buy was suitable for my condition. I would have bought it just in case I suffered.

203. I most commonly use over the counter medicines for headaches, which is not very frequently. Circumstances: persistent headache. What I did: take pain killers (usually paracetamol) Outcome/result: headache goes away/ less severe. What made action effective: no/less pain. Do anything differently: no, not in these circumstances.

204. Feminine odour problem, looked up symptoms on the internet, self diagnosed, went to chemist bought recommended treatment, solved the problem! No, would not of done anything different, although if this did not work would have seen my GP.

205.   I diagnosed myself with vaginal thrush as I knew the symptoms from reading information prior to the symptoms. I went to my local pharmacy and asked for a canestan pessary, but the cheap version! The pharmacist asked if it was for me and if I was pregnant. I used the medicine given as per the instructions. The medicine was effective and my condition cleared up within a couple of days. I don't think I would have done anything differently.

206.   Constipation, bad cold, pain relief. I find otc medicine is quite effective for headaches and have always managed to effectively treat a headache with otc medicine.

207.   GP kept on diagnosing a chest infection with treatment of antibiotics, actual diagnosis reflux problems due to stress. After research on the internet, self diagnosed, bought necessary over the counter meds and have successfully been able to monitor and maintain acceptable balance for daily living.

208.   Flu like symptoms. Purchased lemsip extra strength capsules. Felt better after a few days. Symptoms subsided. No.

209.   Had heartburn during pregnancy, took gaviscon liquid and felt relief almost instantly. I now carry gaviscon sachets with me for future use.

210.   Intermittent eczema flare up. Asked chemist for a non-steroid product for it. Bought recommended products. Chemists knowledge. No.

211.   Temperature and headache. Paracetamol from supermarket. Took them, went to bed and slept. If sleeping can't be suffering. Have to wait for the cold symptoms to go, usually after a few days. Effective as headache settled. Would not change treatment.

212.   Heavy head cold December last, took Beechams Cold Capsules, cured the cold but took about four days to do so, would not do anything differently, as colds seem to run their course and anything taken only seems to stem the symptoms a bit.

213.   Common cold. Night nurse capsules, very effective, would use again.

214.   Had a cold. Bought paracetamol and lemsip decongestant. Rested and used them over a period of a week.

215.   Headache, cold, antibiotics. Always had a slow but mild affect. Would carry on doing the same.

216.   Luckily I have very few health conditions and the only medicines used over the counter that I have found successful is paracetamol which I find fairly effective for aches and pains.

217.   Cold/flu. Bought Night Nurse as soon as felt achy. Felt much better with good nights sleep. Was able to go to work. No.

218.   Foot condition which was itchy and scaly. Asked the pharmacist who prescribed lamisil and useage was effective.

219.   Headache, took 2 tablets, helped relieve it.

220.   Caught nasty cold from husband. Took paracetamol and cough medicine and also some decongestants. Felt poorly for several days, but took medication immediately and started to get better straight away –kept on top of symptoms. Keep meds in the house for such circumstances. Skin allergy – took piriton and other anti-histamines (overdosed as directed by GP's). Need to keep meds on me at all times. Symptoms subside sooner the quicker I take them.

221.   Headache, ibuprofen.

222.   Had cold, went to pharm, pills yum better.

223.	Had symptoms of thrush, asked for treatment was recommended product to treat and was effective.
224.	A cold, used non-branded cold and flu tablets, tablets eased symptoms.
225.	I had a throat infection, it was painful when I ate. I was recommended some throat lozenges from behind the counter and after two my pain had gone, I got them from Boots.
226.	Was summertime and I began to suffer from hayfever quite badly. Went to our local pharmacy and they gave me some tablets to treat the condition. They worked within hours to curb the sneezing and itchy eyes. This action was effective as I could get the treatment quickly and without going to my doctor who is always busy. I would probably not do anything differently as it worked for me.
227.	Suffering from symptoms of hayfever. Went to pharmacy. Received advice from a pharmacist around medication. Took medication. Relieved symptoms.
228.	I had uncomfortable upset stomach which instigated the purchase of Gaviscon. The medicine was effective immediately and in similar circumstances I would follow the same procedure.
229.	I had a heavy cold with congestion, so I purchased a package of lemsip. This had the desired effect of easing the sore throat and headache (though I accept they would have cleared up anyway even without treatment). I would do the same again in similar circumstances.
230.	Menstrual cramps, bought ibuprofen from tesco and took 2 x 200mg tablets, pain resolved, effective painkiller. Would do same again.
231.	Muscular strain, spoke to pharmacist who recommended pain killers and pain relieving spray. Treatment was effective in relieving pain. I would not do anything differently.
232.	Headache, ibuprofen.
233.	My son had conjunctivitis, sticky eyes, not responding to regular cleaning over a few days, went and bought chloramphenicol eye drops after 2 days of use – all better!
234.	Occasional upset stomach caused by IBS. Bought loperamide, sometimes Imodium sometimes boots brand. Can treat symptoms without having to trouble GP. Have self-medicated occasionally for years.
235.	Son had braces removed and 2 days later his gums were very sore and swollen. Asked pharmacist advice and was given suitable medicine that worked great. Would not do anything different.
236.	I currently suffer from acid reflux in my pregnancy – I have suffered for quite a few weeks now – instead of going doctors I went to our local shop, spoke to the cashier and he recommended gaviscon, of which I now take when I get acid and its helping greatly ☺

CIT Question 2

Q21 Please identify a time when you unsuccessfully treated a health condition using over the counter medicine.

What were the circumstances leading to the event? What did you do? What was the outcome or results in regard to what you did? What made this action ineffective? Would you do anything differently?

Abraham Moss

1 Suffering from a migraine, sleep and painkillers (normal painkillers) did not cure migraine, had to wait days for migraine to clear, buy migraine specific painkillers.

2 With IBS it made it worse. I tried all the over the counter drugs to reduce the pain and bloating I had, but it just didn't work. It would sometimes make it worse.

3 Cold and flu symptoms, fluids and paracetamol, symptoms increased/ eventual hospital admission, yes- visit GP earlier.

4 Very rarely take tablets and medication.

5 Yeast infection, bought canestan combi, mild relief but needed stronger antibiotics, go to Dr first.

6 Backache – used ibuprofen but ended up going to doctors to get stronger pain relief. I would still try and self-medicate without immediately going to the doctor if my backache returned- would only visit GP if it persisted and painkillers were not having desired effect.

7 When infection occurs and cause ? ? due to my pre-existing asthma. Taking prescribed inhalers. If when the symptoms continued, went to see the GP where he then prescribed ?.

8 When I get sinus infections, over the counter meds are not effective. Then I need to have prescribed antibiotics.

9 I had ear ache and presumed it was wax. The pain was severe. I didn't diagnose my illness with the pharmacist therefore lead to mistake. Speak to pharmacist.

10. None. If its clear to me I need to see GP.

11 I once had the green nurofen or the orange ones! And there was a manufacturing problem they had no letter N printed and I felt they were too strong for me too! I felt dizzy and fainty. I've stopped taking them now!

12 About 3 years ago had cough. It stayed more than 2 weeks??

13 None applicable as over the counter medicine always did the trick.

14 Chesty cough which had lasted seven days. Bought over the counter cough medicine. Cough medicine is a waste of time and money (as told to me by the pharmacist), would not purchase again. Had lemon and honey in hot water instead.

15 I have had a ongoing cough which was not responding to over the counter syrup and am now asthmatic.

16 Knee pain ligament injury. Paracetamol not effective, added ibuprofen, still painful but slightly better. GP then prescribed ibuprofen gel and co-codamol. Bought gel OTC as much cheaper than prescription. Gel effective. Used co-codamol only short term, when pain v bad. Otherwise use just ibuprofen gel plus paracetamol tablets. Also advised to use tubigrip (again, cheap to buy OTC) and this helps.

17 Infection, no over the counter meds available.

18 Similar occurrence to above (back pain, NSAIDs, paracetamol, exercise), but it was a recommendation to a friend. Her symptoms were the same but underlying cause was different.

19 Over the counter medicine didn't treat my swelling feet, I had to go to the GP, who gave a special medicine for that which make my feet much better.

20 Water infection- I was pregnant, took paracetamol for pain and drank water, was eventually hospitalised.

Altrincham

21 Shoulder problems, anti-inflammatories, did not diagnose correctly, consult GP.

22 Verruca remover. It made foot worse so had to see chiropodist which then cost £50 to treat and remove successfully.

23 Constipation, took too many, got cramps diarrhoea.

24 Period pains, used aspirin. Seemed to help, but not completely. Have tried period pain specific drugs, but these are no more effective. Will probably use again......as there is no cure!

25 I had varicose eczema, bought branded cream. It was not effective resulting in further infection requiring treatment from GP. I would go straight to GP in future.

26 Neuralgia, took co-codamol, not effective, had to take prescription drugs (pregabalin).

Broughton

27 Always worked

28 UTI – tried sachets for cystitis but didn't work. Had to see my GP for antibiotics.

29 Bought cough mixture for son – cough got worse. Visited GP who prescribed anti-biotics. Would do the same as I wouldn't take my son to GP with every cough!

30 Rash during pregnancy, hospital, the cream didn't work but didn't harm me, no.

31 Cough medicines not great. Used calpol sometimes instead.

32 I went to my GP. I am going to my GP or I trid another one.

33 Kidney stones – misdiagnosed by GP and advised to take over the counter medication. Went to A&E after 1 week and given effective treatment. As over the counter did not work. Wouldn't go to a walk in centre again!

34 I had sinus, the over the counter medicines did not help. Went to the doctor who prescribed the same medicine until I pointed out I had already tried that. Was given a stronger medication with an improvement but without total success. Wouldn't do anything differently.

35 IBS. Bought over the counter treatments, didn't stop symptoms, go straight to doctor.

Chorlton

36 Pain of muscle between ribs, strain during exercise, took painkiller, pain not gone needed stronger or different drugs, no.

37 Child had wart on toe, wart treatment bought from boot, instructions followed, wart still there, don't know why it didn't work.

38 Sinusitis, decongestants and anti-inflammatory painkillers didn't clear infection, needed antibiotics. No - experience tells me that the doctor will recommend decongestants and anti-inflammatories first before prescribing.

39 Headache, bought medication and nothing happened. No other consequences as too much bother getting GP appt/ headache subsided.

40 I suffer from eczema sometimes so tried various E45 creams etc. However they did not treat the condition as it needed a steroid-based treatment.

41 I had an itchy vagina, thought it was thrush – bought over counter treatment. It didn't help – I was sensitive to a soap and needed to stop using it. Would bear it in mind but not necessarily do anything different.

42 Difficulty sleeping for several weeks. Tried over the counter tablets to help me sleep, they didn't work. Was prescribed sleeping tablets for a week – helped me to start sleeping again as obviously much stronger. Similar example re. Migraines – tried over the counter products but not effective so no have stronger prescription drugs.

43 Had hayfever, used be?nose, blistered nose, would seek pharmacist advice next time.

44 Herpes cold sore, bought zovirax cream applied it. Cold sore continued, use it earlier.

Levenshulme

45 Bought treatment for thrush at supermarket chemist. The treatment was ineffective as I had made the wrong diagnosis, so I ended up going to the GP. I would go to the GP if I had the same situation again.

46 Visited the chemist, purchased cough medicine. Medicine was not effective. Visited the doctor for anti-biotics. I would go straight to the doctor.

47 Had a bad cold, headache, sore throat, bought day nurse. Took medicine, had dizzy spell and chest pains. Yes ask for advice before buying.

48 Daughter had cystitis type symptoms – pharmacist recommended meds (OTC). When I got home and read the leaflet one was totally inappropriate and the other was for use advised by GP only. Read internet and decided not to use.

49 Hayfever eye drops for a stye. I don't know how its spelt.

50 To treat insomnia. Bought nytol, they weren't effective, in future I'll see my doctor.

51 I had tonsillitis, I took over the counter pain relievers, cough sweets. It was too infected though and needed antibiotic treatment. I would seek medical attention sooner.

52 Had blisters on foot, ask pharmacist for advice and said it was verruca, gave me/suggested use particular very expensive and difficult to use remedy. Outcome seemed to get worse, unexpected result as was not explained. Was not effective as stopped treatment due to lack of info given on use and how it gets worse before getting better so didn't finish treatment. Yes just go to my GP – even though would take longer to get seen.

53 Verucca. OTC med not strong enough, verucca too big to treat this way. OTC med didn't work needed to be frozen off at Drs. No because Dr would have prescribed similar as 1st course of action.

54 Urinary infection, bought over the counter treatment for cystitis. Not effective, also using paracetamol for the pain. Ended up in hospital with a serious kidney infection. Will go to GP more promptly if ever same symptoms occur.

55 I had a really bad pain in my back. I went to supermarket pharmacy and they recommended cuprofen its codeine and ibuprofen. The next morning when I woke up my eyes were swollen. I ended up going to the doctors, he said I had had a reaction to them. I will not buy these again.

56 When I bought cheap paracetamol they did not work.

57 Headache paracetamol did nothing to help.

58 If I knew counter medicine will not be effective ie chest infection – I go to GP.

59 Chesty cough, took benylin, did not seem to make any difference.

60 Vaginal itching and soreness, canesten, didn't help although it did clear up a week or so later. Prob not.

Moss Side

61 Stomach ache, used gaviscon, felt worse was sick felt ill. Yes never take that again get professional help.

62 I was on holiday in Wales over a bank holiday, my son of 18 month developed conjunctivitis. The boots pharmacy refused to give eye drops as he was too young and it was 28 miles to the nearest A&E that was open. As he had the problem before, I ended up getting my husband to lie and ask for eye drops for himself as I couldn't let my son be in discomfort until we saw a doctor.

Stretford

63 Verruca, obtained over the counter solution, ended up going to see chiropodist as over the counter products had no effects. Frozen to remove.

64 I have not been unsuccessful.

65 Cold and cough, lemsip etc, no different, prob just had named paracetamol.

66 Very bad cold with ear infection, temperature. Cold remedies, plus hopi candle treatments to try to unblock my ears. Nothing helped and lost my sense of smell. I would insist that my doctor take me more seriously as I felt I needed antibiotics.

67 Cymalon for cystitis, didn't work, needed antibiotics.

68 Urine infection – powder didn't work.

69 In the past I have bought over the counter medicines for coughs. These have been for my children and have rarely had any impact.

70 Tickly cough, cough mixture, no benefit, would not buy again.

71 Had cold, got medicine, still ill.

72 Nasal spray for daughter post tonsillitis/adenoid problem.

73 Skin conditions, bought the wrong medication, went to the doctor/GP who prescribed the effective ointment.

74 Haemorrhoids, bought cream, negative – condition required surgery. No.

75 Fell, badly bruised knee, bought a cream recommended by a friend. Still healed as usual, no effect, research more before buying.

76 Fungal toenail infection – used over the counter treatment to avoid antibiotics. Problem became much worse and harder to treat. I think so much comes down to how your body responds to different medicines depending on your condition so it hasn't changed how I approach things.

77 Back pain, used herbal balm, not much effect.

78 Child got a verruca, used freezing spray, verruca was not killed, bought alternative – bazooka gel.

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79 Migraine – bought migraleve. Minimal relief so went to GP for sumatriptan, used this since.

80 Very high temp, cold and flu. The weather. Went to the doctor after taking over the counter medicine. Time. If I had carried on using over the counter medicine this would have helped me, time was something I should have considered. I went to the doctor thinking I may have more than a common cold.

81 Ear/throat infection, medicine, didn't work – needed antibiotics. Go to doctor sooner.

82 Persistent cough whilst pregnant. Cough medicine unsuccessful, limited medicines available.

83 I rarely buy over the counter meds, so cannot recall an event.

84 Can't remember a time, I don't use medicine often.

85 Tickly cough, bought medicine, didn't make obvious difference.

86 Had a fall which resulted in a bad rib injury. GP and A&E visit, x-ray, no breaks! Off work 4 weeks, couldn't find pain killers effective enough, even ones prescribed by GP. In the end occupational health referred me to physio – my diaphragm was solid – hence the pain! Sorted in the end with physios help.

87 As above (itchy eye, gunk and swollen) but went to pharmacist first (before went to doc) and bought brolene which was not effective so next time did as above (bought newly available to OTC market strong eyedrops).

88 Sore throat, as above (asked pharmacist at boots) but ended up needing antibiotics as was a viral infection.

89 A cold: cold and flu tablets not sure if they helped or it was just time.

90 Muscular inflammation recommended try over the counter ointment by Dr. Didn't work – GP then referred me to hospital for further investigation.

91 Cream for wasp bite – did not respond to recommended cream prescribed by pharmacist. As a result had to go to GP for antibiotics.

92 Chest infection. Visit GP for antibiotics after cough/cold wouldn't clear. Infection cleared. Probably nothing different.

93 Warts – wartner. Didn't eradicate hand warts, messy and painful to use.

94 Tried to treat cough with over the counter medicine- did not clear. Ended up with antibiotics from GP. Would not do anything differently.

95 Persistent fever not resolved with analgesia. Needed to seek medical advice and antibiotics.

Online

96 I have suffered from facial spots. I bought face wash and cream from the chemist to combat sports but they made my skin dry out and peel and had no effect on the skin problem. I finally went to my Drs who referred me to a dermatologist.

97 Constipation and cold relief, outcome ok, no I wouldn't have gone to the doctor.

98 I have always struggled to effectively treat a cold or flu with otc medicine, I normally have to use two or more products for more than 7 days and most of the time I have to go to the Dr to get a course of antibiotics.

99 Cough and cold. Bought cough medicine. Took medication for over a week. Didn't feel any better and in fact I had a chest infection and required antibiotics from the GP. Probably not.

100 I was suffering with hayfever and did not have my regular hayfever medication with me (Benadryl Acrivastine). A work colleague offered me his hayfever medication but it was ineffective as it did not contain acrivastine. He informed me that Benadryl did not work for him which is why he used a different type of medication for his hayfever. I now carry Benadryl with me during spring and summer.

101 Haven't bought anything that was ineffective.

102 Evening primrose when long time ago feeling down (divorce, house move, death of grandfather, job change all in 8 months). Didn't think it solved anything. Time and own resilience cured it.

103 UTI infection, took Cystopurin did not help at all had to get antibiotics from doctor.

104 Verruca, treatment purchased didn't work, if there were a next time, would go to chiropodist.

105 Bladder infection, had to go and get antibiotics from doctors.

106 I've never had any serious condition which over the counter medicine significantly contributed to clearing. Changes to lifestyle, diet and exercise seemed the most effective cures.

107 Have used various tablets over the counter for insomnia and none of them have worked. The outcome was that I went to my GP and she gave me some that were extremely successful, so if I have a really bad patch of not sleeping I just go the the doctors for the pills that were successful.

108 Thrush type infection. Went to dr who recommended canasten. Bought it and it didn't work. Tried to buy another cream he had recommended, went to buy over the counter and needed a prescription. Gave up. Will need to go back to dr. No.

109 Asked the pharmacist about a chesty cough she prescribed a medicine but was completely ineffective. Think some things just have to work through the system without medication and be fought by the immune system...coughs in particular.

110 Back pain, was getting worse and worse and normal day to day painkillers didn't help and neither did the ones the dr prescribed. I now have injections for pain relief in my spine.

111 I was stressed out and run down and began to suffer from cystitis, went to local pharmacy to get sachets I get to treat it, these didn't seem to work as fast as the last time I used them and I was still suffering from it after the course of treatment was taken. I don't think the treatment was strong enough even though I started taking it from when the early symptoms began to show. I'd definitely go to the doctor if it happens again.

112 On several occasions when I have had a particularly bad cough I have purchased various cough remedies. None have been successful therefore I would not, in future, be likely to waste money on similar products.

113 All I can think of are times when I have suffered from indigestion and tried using remegel or gaviscon without success. I assume they didn't work as the level of acidity (or whatever was causing the indigestion) was too high. I cannot think of anything I would do differently.

114 Scratched my eye. I purchased eye treatment which didn't work. Went back at pharmacist and they recommended specialist treatment by doctor. Went to accident and emergency. They provided treatment which worked. I would get specialist attention with eye treatments.

115 Tried to buy calpol for children, and 2 small boxes of paracetamol for adults when we all had colds and supermarket wouldn't sell that number of paracetamol containing products – disappointing as I have a large family and we needed that amount.

116 Sore skin on leg. Tried savlon spray, condition worsened, would not heal. Had to make several visits to GP and nurses. Was prescribed 2 courses of antibiotics (not successful) followed by steroid cream (v.effective). Savlon was irritant but skin was also already infected so it was not suitable. Next time I would visit GP sooner for similar condition.

117 I suffer quite badly with migraines of which I used to buy paracetamol/ibuprofen for over the counter, however these are now ineffective therefore now use stronger ibuprofen of a stronger kind prescribed by my gp (of course I can't use it currently as I'm pregnant).

118 Beginnings of a cold. Bought a remedy that purported to prevent a cold (nasal spray – first alert?). Used it as directed. I didn't get a cold but felt ill for the next two weeks. I felt the medicine masked the symptoms rather than cured them. Not bother using it next time or look for a different and more proven brand.

119 Circumstances: severe back pain. What I did: took over the counter cocodamol. Outcome: no effect! Ineffective: just not strong enough. Do anything differently: get a prescription for something stronger sooner!

120 I had problems breathing, was very tired, thought that I had a heavy cough. Used cough medicine, temperature control, vics vapour rub. Small amount of relief. Undiagnosed pneumonia. Go to the doctor sooner.

121 Tried cough medicine. No effect on condition, attended GP. Viral bronchitis diagnosed, OTC drugs not available to treat infection. Should have attended GP earlier rather than trying to self treat.

CIT 3

Q37 Please identify a time when you successfully gained information about a health condition. What were the circumstances leading to the event? Where did you search? How did you search? What was the outcome or result in regard to what you did? What made this action effective? Would you do anything differently?

Abraham Moss

1 Pain in my knee. Doctor suggest its sport injury. Wanted more information about it. On Google, NHS website helped and some others. Better understanding about my problem. No.

2 Child tonsillitis. NHS website, ask doctors question. WHO websites via google search engine. Compared different information, later discussed with GP. The GP referred the child to a consultant my ?? on time to save myself the stress and avoid GP visits.

3 Daughters skin condition, NHS direct, looked at images, successfully diagnosed: ringworm. Avoided GP appointment, treated using antifungal cream from pharmacy. No.

4 I recently looked up cradle cap on NHS direct website, the website is a result of a google search. It helped me understand and deal with the problem. I would not do anything different.

5 My daughter had a red rash on body, temperature and sore throat. NHS direct, search section of NHS direct. Use calpol and E45 see GP. Calpol. No.

6 To learn more about an eye problem (macular degeneration) which my mother had been diagnosed with. Probably did a google search, then picked website that looked most 'official'. I didn't take any actions later but felt better informed. Would always be very careful about source of information I used and make sure that it was a reputable source. (But then I am a librarian!).

7 Googled prescription medication for properties and interactions.

8 Cancer – Dad had it in stomach and spread to liver. Got amount of into to help us understand more. Used a few sites – can't remember – NHS/Christies and others.

9 Finding information about my sister's diagnosis as having Burkitt's Lymphoma. General google website and friends who are doctors. Typing the name of the cancer and exploring the stages of cancer and different types of treatment. Understanding where it affect most in the body and how it is spread. Understanding of the symptoms so to be aware about the effects of the treatment. Do differently maybe by reading/accessing medical journal site.

10 Healthcare services. No.

11 Thrombosis – blood clot, after a swelling on my arm I searched possible causes. Was eventually seen by GP and then a consultant – inconclusive diagnosis, possibly arthritis.

12 I get some information on (Patient.co.uk). It helped me to get information about thyroid gland symptoms which push me to visit my GP and have a blood test and that showed that I have problem with my gland.

13 Went to pharmacy, good, I will find the easy way to get the effective medication.

14 White plaques in oral cavity – Lichen planes!

15 Personal information.

.Confirmed my suspicions that it was probably arthritis. Tips to help confirmed what GP had said to me (lose weight) but it also had lots of leaflets to print off – these give info on which types of exercise would help which joint problem – including specific exercises. I have asked for ortho referral for diagnosis/advice.

17 General health from NHS, good to see what rashes to look for. Went to GP. Internet is good to look and receive some information, but I would still go to a GP or pharmacist.

18 Searching about Erb's palsy as my daughter was born with the condition. Google. Found a facebook group related to it. Found a lot of information and people who have the condition.

19 I have a diabetic daughter who was on five insulin injections a day. Through research on the internet we have now put her on a pump therapy machine, which delivers insulin into the body with out the need to inject. Outcome was as expected, her life quality has become better. I would not do anything differently.

20 When trying to diagnose a re-occurring, month after month, mouth ulcer. On this occasion found Dr a little unhelpful. Search internet – various forums to get other people experiences/advice. Used an over the counter medicine. Treated problem effectively.

21 I have never sought medical advice online as I don't know whether it is reliable information and I would personally trust seeing and speaking to a health professional more.

22 Via internet, boots site.

23 When I had a water infection it advised me I needed to see a doctor to gain antibiotics.

Altrincham

24 Searched NHS site for infor on eczema. Followed links, which led to advice but in retrospect a trip to the GP would have been more beneficial.

25 MS – searched, found MS charity, got advice I required.

26 All I can say is that sometimes you arm yourself with vital knowledge, in my case net result was that I was given a tablet described as the best for hypertrabeculation (thinning of the heart wall). I do observe you can reach a wrong conclusion just by wrong wording or no's or words in wrong order which could be dangerous and lead to anxiety and misdiagnosis.

27 I found library books just as effective.

28 Searched for infor re: chronic fatigue syndrome, fibromyalgia and spondylolysis after being diagnosed. Internet and books. Gained a better understanding of conditions. Enabled me to discuss issues I was concerned about with GP. Limit time searching for info as it can be quite confusing or sometimes conflicting information.

29 Lymphedema/cellulitis – not sure of spelling. Internet, google, found information needed – no treatment available to help. No.

30 Online, google, contacted GP, correct diagnosis.

Broughton

31 Suffering with chronic pain in shoulder. Diagnosed as bursitis, found information about condition on internet. It made me more aware of the condition in my shoulder. I followed correct procedures and would not do anything differently.

32 Used the internet for trouble shooting questions I wanted to ask my doctor. Still went to the doctor and asked the same questions. I felt I knew what I was talking about even when jargon was being used by the doctor to answer my questions. I also knew what options to treatment I had. I wouldn't change anything.

33 Kidney stones, internet also spoke with nurses and people with personal experience of illness. I followed advice given, learnt more about condition, look for info earlier.

34 I looked for information regarding hepatitis and pancreatitis to inform my practice at work. I looked on NHS information sites and British Liver Trust site, sites which I felt were credible. I confirmed information I knew already and found also further information which informed my practice about. Nothing differently.

35 Went to walk in centre, then GP. Condition was resolved.

36 NHS website

37 My daughter found it useful when had a habit of hair pulling but didn't realise she was doing it. Looked up information and found out she wasn't the only one and found at what its related to.

38 As part of my job I regularly search health information usually via web mentor or patient UK. I have never really had cause to search health information for me or my family personally.

39 Eye infection, NHS direct, search engine, went to GP, wouldn't have gone otherwise, no.

40 I searched for psoriasis treatments. My psoriasis had got worse, I used psoriasis association sites here and in USA. The information confirmed the treatment options – prepared me for a hospital appointment.

41 12mth, internet, not much.

42 My daughter had red cheeks so looked up to see photos of other children with slapped cheek disease to confirm what I thought she had as I know there is no treatment for this condition.

Chorlton

43 Asthma – my son has asthma. I looked at asthma UK website, regarding safety of using steroid inhalers for a long period and felt reassured by the information I found.

44 All the information I get is from my GP. And thats how I intend to continue receiving information re my health.

45 I can't recall a specific event. Search occasionally but prefer to ask GP/Pharmacist.

46 I recently diagnosed myself correctly with superficial thrombophlebitis. I just googled vein thrombosis. I then checked with GP who prescribed anti-inflammatories and antibiotics.

47 I regularly learn health information, both general and specific to myself from my incredibly knowledgeable partner. She's great. If she doesn't have the answer I'd go to a pharmacist or my GP. The internet is not really a place I instinctively go to.

48 Toothache, asked at pharmacy, temporary treatment.

49 There is a patients website which I went on only because recommended by my GP. I went on it to find out about different types and treatments for eczema. I would only search AFTER diagnosis not before.

50 Withdrawal to sertraline. Googled, lots of info – mainly personal blogs/posts. Gave reassurance that all my symptoms were normal. I may recommend to others that they stop taking medication slowly but have knowledge of what might happen to them.

51 Painful shoulder, restricted movement. Medical encyclopaedia, internet. Looked at symptoms suggested might be frozen shoulder, doctor confirmed it was. Looking for info spurred me to see doctor which resulted in surgery eventually.

52 As a health student we have been doing assignment – like swine flu on HPA.

53 Shortness of breath, NHS direct, telephone, call back – directed to walk-in, helpful and quick, no.

54 A dermatitis condition, no available appointments at my GP. NHS website, search engine of website. Found an over the counter drug to treat my health issue till I get to see the doctor. It did work and I did not eventually go to see the GP. No.

55 I am a medical translator and have extensive experience in searching the internet for information on health matters. I also hope that I can differentiate between reliable and unreliable sites – tending to use official sources of information including in other languages.

56 Google, key words, list of sites, read some, got info, no.

Moss Side.

57 My sons got eczema, search for info on google, end up buying cream from supermarket, got to read more about the product before buying, no.

58 Hair loss, healthcare website. Found out there was other reason to why this problem could be occurring as opposed to thinking it was a side effect to medication I was taking. I was able to eliminate possible reason to why I was experiencing this problem. No, I like to have a breadth of knowledge so I like to research.

Levenshulme

59 Ulcerative colitis (for work usage), intranet/NHS choices etc, intranet, furthered knowledge of condition, see above, no.

60 Searched NHS direct and diagnosed my problem successfully.

61 My daughters cheeks were red and a parent at school mentioned her daughter had had slap cheek syndrome so I went on the internet and read about it on the NHS direct. Then I contacted doctor and there he told me everything that I had found out on the internet.

62 I have not used the internet to look up any health issues for myself with one exception and that was when I was last pregnant – 7 years ago.

63 Internet, google, more info, able to gain more info than GP able to give in time available, no.

64 My Mother had a stroke after a diabetic coma, was told by medical staff would have to go into a F/T care home. Search online through a variety of sites on google search engine – long term care, disabled stroke victims, cures for stroke victims, long term home care stroke victims. Found variety of useful sites, advices, blogs and miracle claim cures. Self belief, determination and lying to my mother that it could be done. Would have moved Mum back home earlier, as changes happened 3wks after returned home and self discharged her from hospital. Is now walking and using her right side which was paralysed whilst in hospital.

65 Went to the GP.

66 Candida fungus, google, some s(c)ent(?) of tea, if GP in England would be more open to alternative medicine internet wouldn't be needed.

67 Information re: molloscum obtained from a response by another user to a question posted. No other website had ever mentioned this treatment, so it was a lucky find. I also ordered the essential oil from the alternative health store recommended and the transaction was very smooth.

68 Cold/flu (severe), checked on internet and found herbal mixtures to try. Used honey, lemon and paracetamol. It worked.

69 Pain in calf when running, looked on internet. Decided didn't need to seek additional help, rested for 2 weeks, would look again.

70 My daughter had excruciating ear ache on Xmas Day. I rang NHS direct, they sent me to walk in doctor at MRI. Daughter got eardrops and painkillers. Issue resolved by afternoon, no would do the same again.

71 Child had chicken pox and developed a cough. Found that this was/could have been chicken pox in the lungs (found through NHS direct). Spoke to a Dr and was reassured that the child was ok as long as it didn't affect their breathing. This was effective and I would do the same again.

72 I only get personal healthcare info from a GP.

73 High blood pressure, British Heart Foundation.

74 Childs verrucas – diagnosis, treatment (latest advice) NHS site.

75 Wanted to know about verrucas, got info and bought what I wanted.

76 When diagnosed with B12 deficiency, I checked up on the web about condition and do's and don'ts. I found the information very helpful.

77 Researched Hep C for a client at work. Used internet found Hep C trust. Found very useful info around holistic care, no.

78 my son had a lot of small red sports under his armpit. I searched on google for red sports in armpit. I checked a handful of sites before reaching the conclusion that it was molluscum contagiosum. The outcome was that I stopped worrying (its not serious) but visited the GP anyway to get some treatment to alleviate my sons discomfort. I don't think I'd do anything different.

79 Searched NHS direct website to see what ringworm looks like.

80 Problems with my periods – heavy long prolonged pain. Discussion with GP re: possible endometriosis. Accessed NHS direct online for info and was also given info on other websites/sources of help. Went back to GP with further info and have now been referred to gynaecology at hospital for further tests. Would have looked at internet sooner in hindsight.

81 My son had lump on throat/neck, doctor said inflamed gland. Looked up info and found out it was thyroglossal cyst. Went to a different doctor. I used google at and looked at lots of results.

Stretford

82 Iron deficiency – results of blood test, ferrous sulphate recommended, read about what iron deficiency means on NHS site, went back to doctor to discuss seeing nutritionist.

83 Sickness and diarrohea child, nhs direct online, recommended medication worked (dioralyte), no.

84 National health website, son was poorly, searched online at home, no help, rang helpline, very helpful on phone.

85 Used NHS direct after child hit head falling from height less than her own. Cycling accident. Information was clear and symptoms did not cause alarm or prompt recommendation to go to casualty. It was effective due to clear questions asked online by the website. Would do same again if in doubt.

86 Sprained ankle, identified symptoms by google search and tried to use the info to speed up healing. Healed but was still painful and took a long time. I would go to doctors if this happened again.

87 Chest pains, NHS direct, went to hospital, good info, no.

88 NHS websites, any.

89 General health information, benefits of supplements, didn't do anything though.

90 Daughter had shingles (aged 5), looked at NHS direct/choices and health (?) agency. Reassured about condition and treatment needed (none). Prepared for impact on family – two other siblings.

91 Tonsillitis, some site, just for info.

92 My son had giardia, typed into google symptoms (diarrohea), chose NHS site. I then made doctors appointment, doctor took stool sample. Diagnosed giardra and prescribe treatment.

93 Hernia! Checked symptom on google, went to GP for referral!

94 Child had fever and bright red cheeks, had heard of slapped cheek virus so checked NHS website to see symptoms and treatment. Was able to treat child with ibuprofen/paracetamol and did not need to take him to GP.

95 NICE guidelines for patient. Searched for particular condition, diagnosis, treatment etc. Reputable, safe website, no.

96 Son sent home with suspected slap cheek syndrome by childminder. I checked photos of this on the NHS website and was satisfied that he didn't have the condition so I sent him to school confidently the next day.

97 I was concerned my daughters head was inproportionately large for her age and she had a prominent forehead. I received a website from alder hay hospital to investigate these issues and it helped but I was far happier once I got a verdict by seeing the healthcare professionals in the childrens hospital.

98 Son bitten by horse, NHS direct online, phoned up eventually, went to out of hours doc, no.

99 Nits and lice in my child. Searched NHS sites and mumsnet. I stopped buying over the counter lice treatments and bought a nitty-gritty comb online. I use it regularly on my daughter and it works as it removes the nits and the lice. Next time I wouldn't listen to the advice of the local health shop and waste money on shampoos or bother with hedrin.

100 Mole on back, NHS cancer research, internet – google, advice, still visited GP.

101 Daughter had a rash appear checked NHS direct for symptoms, then rang NHS out of hours service who confirmed findings of chicken pox, used the site as it was over a weekend.

102 Wanted to find out about potential side effects of medication I was taking. Searched internet, found useful information, felt safer using medication.

103 Long-term health condition suffered by a family relative, searched for information from a charity leaflet received, gained more understanding of the issue.

104 Son diagnosed with genetic disorder, specific sites rec. By nurses, provided detailed info.

105 Placenta previa. I conducted very comprehensive searches and accessed medical publications (articles) online which I used to INFORM the doctors at the hospital (not many of whom knew much or enough about the risks and about the procedures needed – some were newly qualified). The outcome was that I persuaded doctor to accept the recommendations in the studies and as a consequence my remaining pregnancy was well supported. (My daughter has cerebral palsy because of the problems caused by placenta previa, so it was justifiable to be so concerned).

106 Children had worms, complaints of itchy bottom, online bbc, nhs, google, got treatment from pharmacy, treatment, no.

107 Went to the Dr regarding a health issue, she gave me the name of possible condition for me to research whilst waiting results of blood test. As I wasn't self diagnosing I felt confidents searching internet for info.

108 Ringworm on arm, used canesten which I already had, NHS direct, improved, go to doc if didn't work.

109 Son and daughter – both suffered with feet and hands turning purple. Searched online, symptoms lead to raynauds disease, confirmed by specialise following referral from GP.

110 Online – Wikipedia, other online medical sites. Took information on possible conditions to the GP to aid a diagnosis for one of my children. No. I wouldn't do anything differently.

111 Sinus operation, can't remember, used google, went to GP, no.

112 Healthcare website, google, provided valuable information re potential symptoms and prognosis, no.

113 My son had a wart on hand, I asked pharmacist, recommended a spray that freezes the wart.

114 Phoned NHS direct as husband had a stroke, was told to stop taking some medication, it was helpful but did need to go to hospital eventually.

115 Symptoms of lump, outcome lump ok, search put mind at rest an no what I was experiencing was normal.

116 Google, pregnancy website, gave me more confidence, no.

117 Never found online help always by Dr or professional.

118 Child had rash/spots, searched for pics to see what it was, googled. Child had scarlet fever, it gave other symptoms to look for. Not unless had've seemed poorlier at the time, I would have taken him straight to docs instead of waiting.

119 Husband was diagnosed with shingles, we looked up on NHS direct about contact with pregnant people and risks of chicken pox. Found out it was ok.

120 Girlfriend was complaining about migraines so was trying to find out more about migraines, causes etc.

121 Just searched for advice regarding hypothyroidism and read forum comments.

122 NHS re chickenpox.

123 My childs skin infection, NHS direct and phoned GP, GP advice was that it would get better, maybe gone to GP sooner.

124 I have performed NHS direct protocols to see whether I should seek medical help for a child. I followed the advice and sought out of hours help, result was appropriate treatment.

125 I'm a physio so if I need info about a patients comorbidity i'm not familiar with I'll look on the internet.

126 I had trouble with my knee, I went to my GP. I got referral to hospital for physio, after six months of ley exercises that didn't seem to be working, I went back to hospital for a scan, this showed the problem. I wanted to know more about the working of the knee and if anyone had the same problem. I searched the internet heard people had used these special straps, I bought them online, they did help until I got key hole surgery to repair the knee.

127 4-5 yrs ago – treatment for molluscum for two of my children. I searched NHS websites and general websites (can't remember now). I discussed what I found with a friend. She advised a homeopathic remedy that worked for her children. I had already seen it mentioned on the internet and went with that treatment which was successful.

128 Daughters dairy allergy, advice given from a forum about suitable formula to feed my daughter.

129 Following the late stillbirth of my 2nd daughter, I was more conscious about all ailments when pregnant again. I suffered a great deal of itchiness which was brought to my attention could be a symptom of obstetric cholestasis. Following internet research, I understood the potential seriousness of the condition and went to my GP who arranged regular blood tests for the duration of my pregnancy.

130 Earache/ringing in ears, loss of balance/dizzy/earache. Google, contacted doctor for appointment.

131 Injured ligament in knee, general google and several hits were used including links to forums/blogs. Google. Purchased knee support and used ibuprofen gel and tablets, already had these in house (not used at same time), persisted with it. No.

132 Rash all over my body, google searched, red sports all over my body except face, feet and hands. Got the name of the condition I was suffering from. Was much easier to talk to Dr and search the net with the name.

133 Just needed advice, google, search engine, none, n/a, no.

134 Beyond painkillers all medical advice is via a professional.

Online

135 A few years ago my mother had the symptoms of Alzheimers and I found the internet very helpful using the NHS website. Consequently I took her to the GP who arranged for her to have a brain scan. The brain scan identified that she did have it and tablets were prescribed. Very difficult to know if they have worked, but I think maybe they have slowed down the effects of the condition.

136 Acute pain in my shoulder came on suddenly for no reason. Searched wicki and questions and answers. Then went to my gp. Internet search made me aware that I should seek help from my gp. I would do the same again.

137 Do not search on computer

138 Doctors

139 Fit in school, local hospital diagnosed it, medication for rest of life.

140 For the treatment of piles. Severe pain and discomfort. Boots online website. Searched for information on treatment and diagnosis. Confirmed I had them, went to see doctor after initial self treatment didn't work. Visit doctor first if I could get appointment.

141 Google bowel pain, nutritional changes, symptoms subsided.

142 Had a rash on skin. Had a diagnosis from doctor, typed name of rash into google and various sites confirmed doctors diagnosis.

143 I felt a weird sensation in my bladder, tried to describe it in google search, read a couple of forums where people had experienced the same sensation, realised it might be the start of a bladder infection, contacted my GP for an emergency appointment as I was pregnant at the time. GP prescribed antibiotics and it cleared within 5 days. In future I will drink more water and cranberry juice to avoid further infection.

144 I have only sought healthcare information from a qualified doctor, nurse or pharmacist. I would be very unlikely to seek or rely on any healthcare advice from any web-site.

145 I have only searched to understand more about a friends mental illness so that I can better understand how to deal with it.

146 I know the information I get is from trusted sites, so I am fairly confident it is correct.

147 I posted on a group forum on facebook called Emma's diary requesting information about my sons health and was provided information of possibilities it could be, and was advised to ring his hv (health visitor) or gp of which I did and got the info I needed.

148 I was diagnosed with a urinary tract infection by my GP. I researched the cause, symptoms and side effects using the NHS website, it was very informative.

149 Info re lichen sclerosus following diagnosis by dermatologist. Google search for reputable sites. Found helpful information confirming what I'd been told. Helped me understand condition more fully. I like being able to learn more following diagnosis by Dr but would not self diagnose.

150 Information for pre diabetes for family member. Looked on NHS websites and diabetes UK. Information received around what it means and healthy lifestyle info. Gave info to family member.

151 Looked up irritable bowel syndrome for dietary requirements and symptoms. Learned a bit of information. Went to doctors for more advice and medication.

152 My brother had a serious illness and seemed unable to find out much information even from his own doctor. I therefore googled the particular illness and was able to download information which I was able to pass to him. I would do exactly the same under similar circumstances.

153 My father was diagnosed with cancer of the oesophagus some years ago. Google search on the subject and prognosis. Good background info. Made us aware of the severity of the disease. No.

154 My son was critically ill with E.coli poisoning and I used the internet to verify what I had been told by the consultant and to investigate various methods of treatment as well as talking to friends who were surgeons specialising in the area.

155 Researched for pink spot on skin, researched NHS website for symptoms, explained may be a basal cell carcinoma, went to dermatologist and it was removed and confirmed as basal cell carcinoma.

156 Sore shoulder, NHS direct over the phone consultation with physio, accurate diagnosis.

157 Started sneezing and had itchy eyes, needed to know if it was the start of a cold or hayfever. I used Boots MD, typed in the body area and went from there. Realised I had all the symptoms of hayfever so went to Boots and got the treatment I needed over the counter. It was quick and easy compared with having to wait nearly a week for a doctors appointment.

158 Daughter had chickenpox. Searched NHS direct, identified rash as likely chickenpox. Confirmed with GP. No.

159 Googled symptoms ie typed in symptoms and terms. Found alternative medicine mentioned on websites. Searched again for reviews and discussion on official health sites (eg NHS). Effective because found suitable treatment. Spent more time searching maybe treat more holistically rather than a quick cure.

160 I can't remember a specific incidence recently. I'm sorry. I do remember doing this quite a while ago, but can't even remember the name of the condition, circumstances: recurring health problem, no real solutions from GP. Where/how did you search: google, then followed links outcome: found more information, some helpful advice; not really any practical changes effective because it just allowed me to find more information on the condition. Do differently: not really.

161 I felt itchy, had a rash and unwell. The NHS website. Typed in rashes on the torso. I thought that I might have shingles. I went to my GP. The pictures and description matched my symptoms. No.

162 See above information (?).

CIT4 Answer

Q38 Please identify a time when you were unsuccessful in gaining information about a health condition.

What were the circumstances leading to the event? Where did you search? How did you search? What was the outcome or result in regard to what you did? What made this action ineffective? Would you do anything differently?

 Abraham Moss

1 My mother in law had cancer, at the time I could not find the information I needed on the internet, however this was a long time ago.

2 Had no problem.

3 Little one had sports. Doctors didn't know what it was. NHS and other websites but couldn't find the answer. My mother knew about the disease better and she treated it as well.

4 I do not think any search were unsuccessful as even a little information on any illness will help in understanding (managing the illness).

Altrincham

5 Neck pain, googled neck pain, recommended chiropractor but I don't want to go to one, don't know.

6 When visiting NHS for results of heart scan. Result was interview with top consultant, no.

7 Tried to research daughters symptoms, too many varying diagnosis for the symptoms so unsuccessful and confusing and worrying. Go to GP rather than try to research.

Broughton

8 Kid flu. Search engine, daughter ill didn't give right advice, went to GP, go straight to GP.

Chorlton

9 I had pains in my legs when pregnant but could not self diagnose either via NHS websites or by general googling. A physio told me what was wrong – I would still look online first in the future.

Levenshulme

10 Dad's prostate cancer and nieces condition 'stickler' syndrome – info too wide and non-specific. Decided to leave it because was making me worry needlessly about possible eventualities!

11 Google/internet, symptoms too general – too much info to limit down to anything useful.

12 Infertility, was told conflicting things by GP and consultant on change etc, too old to have children. Married younger partner trying for child. Searched online, private BUPA, NHS. Paid for tests ovulation and hormones. Not on change, but not ovulating. No.

13 I was looking for information on chronic white matter, following a family member receiving this diagnosis from an MRI scan. This was on the internet. I did not successfully find all info required as ischaemic changes of dementia is a very wide ranging subject. Info therefore obtained from a colleague (consultant psychiatrist).

Stretford

14 I was pregnant when child had scarlet fever and couldn't find if I was likely to get it too. Online.

15 9 year old daughter complaining of chest pains. By symptoms. I was not able to identify what might be wrong. Nothing, as the research was only undertaken in conjunction with a hospital referral.

16 Do not search often therefore cannot remember an unsuccessful event.

17 I checked the symptoms for ovarian cancer as my period was late, I suspected I was pregnant but didn't think this was possible so I wanted to check all options. A lot of symptoms were similar but I was pregnant!

18 I always take advice from my GP.

19 Family members.

20 Infrequent menstrual periods. Searched google, chose NHS site. Area was too vast to pinpoint problem. This condition was symptom of many health problems.

Online

21 Sometimes it is hard to find information online as you end up on question pages and you don't know if the information is reliable or not.

22 I had alopecia and investigated this extensively online, with the GP and a specialist. I never had a proper diagnosis but after a few years it cleared up on its own. There hasn't been a time.

23 Always been able to use the internet or books to help with medical issues.

24 In connection with my brothers illness I attempted to find out about a drug called Zemeter (zometa) (probably misspelt) but could find very little information (and, yes, then it was spelt correctly). I assumed that it was a fairly new drug and that was why there was little information. Again, under the same circumstances I would follow the same procedure. I cannot think of any occasion where I have not been able to find the information I require from healthcare professionals, as described in answer to Q37.

25 I have not been unsuccessful in gaining information on internet. There is to much!

26 Tried to learn more about childhood eczema because my grandson is badly affected. Google search for reputable sites. Information and advice too muddling. Too many opinions about what may cause it and what may help. Felt bewildered and unable to help. Worry that he is not getting sufficient treatment and advice.

27 I've previously searched for information regarding my own health using online symptom checkers and they have been so wrong its unbelievable.

28 Circumstances: symptoms for a few days, not sure what. Where/how: googled, followed links, also searched for research papers. Outcome/result: not really helpful. Ineffective because: symptoms too vague/ too many possible causes. Do anything differently: Not really in this case as the symptoms disappeared fairly quickly, otherwise see GP sooner.

29 I have never relied on the internet.

30 Medical condition husband suffers from (restless leg syndrome) – told no effective treatment. Typed in terms UK sites are said same as GP ie not treatment. US sites recommended various drugs. Unable to find useful information. Maybe look for alternative treatment instead.