A CROSS-SECTIONAL SURVEY OF HEALTH INFORMATION-SEEKING PRACTICES AMONG YOUNG ADULTS ON A SOUTH AFRICAN UNIVERSITY CAMPUS

Estelle van Niekerk

Thesis presented in partial fulfilment of the requirements for the degree of

Master of Journalism

at

Stellenbosch University

Department of Journalism

Faculty of Arts and Sciences

Supervisor: Prof G. Claassen

March 2012

Stellenbosch University http://scholar.sun.ac.za

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Signature: Date:

Copyright © 2012 Stellenbosch University

All rights reserved

Stellenbosch University http://scholar.sun.ac.za

ABSTRACT

Health information-seeking is a complex and dynamic construct. This study attempted to quantify and explain the use of interpersonal communication, media and related technologies as health information sources among first year university students on the campus of Stellenbosch University (SU), using a cross-sectional survey design. The questionnaire and web-based survey intended to measure and document important research constructs at a single point in time. Data from this survey provide exploratory information on patterns of health information-seeking practices and preferences encountered among the research target group. Measures of the reasons for health information-seeking on specific topics; health information sources/channels and frequency of source/channel use; information source credibility and quality as well as the outcomes of the health information-seeking process were used as secondary research aims in this study. Health communication and health management needs of the research population were also important research variables to establish.

Results from this research indicate that the health status of the study cohort was good. The mean of the BMI kg/m² for the current study cohort lies at the higher end of the BMI kg/m² continuum for this age group, which indicates that the lifestyle of the study cohort is at risk. The use of health information sources among the research cohort was diverse. This research confirms that interpersonal communication is an important information medium through which young adults receive health information. The concept of an ecological context to health communication and its effects are therefore supported by these results. Use of media sources and related technology was common and diverse among the study cohort, mirroring patterns of media use for other young adult groups. Results further support the theory of effect-studies in communication (the media), where the provision of certain types of information through the media, indicate to have an impact on people's thinking and behaviour. A behaviour change as result of the health information-seeking process was reported among the research cohort.

Health communication literature refers to small numbers of studies conducted on health information-seeking among young adults (student populations). The current research has attempted to add to the body of knowledge on health information-seeking and its outcomes among a student population group in a South African university setting.

Stellenbosch University http://scholar.sun.ac.za

OPSOMMING

Die soektog na gesondheidsinligting is 'n dinamiese en komplekse proses. Hierdie navorsing het gepoog om die gebruik van interpersoonlike kommunikasie, media en verwante tegnologieë as inligtingsbronne oor gesondheid onder eerstejaar-studente op die kampus van die Universiteit van Stellenbosch (US) te kwantifiseer en te verklaar. 'n Dwarsdeursnitopname is as studieontwerp gebruik. Die web-gebaseerde vraelys het gepoog om belangrike navorsingskonstrukte tydens 'n enkele tydgleuf te probeer meet. Data van hierdie opname verskaf verkennende inligting oor die patrone van die soeke na gesondheidsinligting en gesondheidsinligtingvoorkeure van studente. Redes vir die soek na gesondheidsinligting; mediums/metodes waardeur inligting verkry word; frekwensie van soektogte; geloofwaardigheid van mediums en die kwaliteit daarvan; onderwerpe waarna gesoek word en die uitkomste van hierdie gesondheids-inligtingsoektog, is as sekondêre navorsingsuitkomste van belang geag. Gesondheids-kommunikasiebehoeftes onder die navorsingsteikengroep was belangrik om vas te stel.

Resultate van die navorsing dui aan dat die gesondheidstatus van die navorsingsgroep goed was. Die gemiddelde BMI kg/m² vir die groep was egter aan die bokant van die BMI kg/m² kontinuum vir die ouderdomsgroep en dui op moontlike leefstylrisiko's vir die groep. Die gebruik van gesondheidsinligtingsbronne was baie divers. Hierdie navorsing ondersteun die feit dat interpersoonlike kommunikasie, as gesondheids-inligtingsbron, nog 'n belangrike rol speel onder jong volwassenes. Die konsep van 'n ekologiese konteks vir gesondheidskommunikasie en die uitwerking daarvan, word ondersteun deur die huidige navorsingsresultate. Die gebruik van media en verwante tegnologieë, as inligtingsbronne vir gesondheid, is as baie divers gerapporteer. Dit bevestig patrone van mediagebruik wat onder ander jong volwassenes gevind is. Resultate van hierdie navorsing ondersteun ook die teorie van effek-studies in kommunikasie (die media), waar die verskaffing van inligting deur die media 'n impak op mense se denke en gedrag aandui. 'n Gedragsverandering is wel deur die navorsingsgroep aangedui as resultaat van die soeke na gesondheidsinligting.

Gesondheidskommunikasieliteratuur verwys na enkele studies wat oor gesondheids-inligtingsoektogte onder jong volwassenes (studente-populasies) gedoen is. Die huidige navorsing het gepoog om 'n bydrae te maak tot hierdie kennis en die uitkomste daarvan onder studente op 'n Suid-Afrikaanse universiteitskampus.

Stellenbosch University http://scholar.sun.ac.za

ACKNOWLEDGEMENTS

With the successful completion of this study the researcher wishes to acknowledge and thank the following people for advice, assistance and support:

- Our heavenly Father who granted me the talent, will, strength and guidance to persevere with this endeavour.
- Professor Lizette Rabe who initially excited me about the possibilities of undertaking such a research project and who, throughout this endeavour, always encouraged and supported me.
- Professor George Claassen who supervised this study, inspired, guided and encouraged me to conduct this research.
- The Department of Journalism at Stellenbosch University, for support during the research process.
- Professor Martin Kidd from the Centre of Statistical Consultation of the Stellenbosch University, for his advice on statistical procedures.
- Ms. Magriet Treurnicht from the Information Technology section of the Stellenbosch University, who introduced me to the electronic survey system used for research at the SU. I am truly grateful to her for her assistance.
- My husband, Bern, for his continued support and encouragement and for always believing in me.
- Opinions expressed and conclusions arrived at, are those of the researcher and not necessarily influenced by any organisation involved in the research.

Stellenbosch University http://scholar.sun.ac.za

TABLE OF CONTENTS

Declaration i

Abstract ii

Opsomming iii

Acknowledgements iv

CHAPTER ONE 1

PROBLEM STATEMENT AND RESEARCH AIM

1.1 INTRODUCTION 1
1.2 BACKGROUND TO THE RESEARCH 4
1.3 AIM OF THE STUDY 5
1.4 LIMITATIONS 7
1.5 TERMINOLOGY 7
1.6 EXPLANATION OF CHAPTERS 10

CHAPTER TWO 11

LITERATURE OVERVIEW

2.1 INTRODUCTION 11
2.2 THE RESEARCH PARADIGM 13
2.3 CONCEPTS 26
2.3.1 Young adults, their health and the media 26
2.3.2 Health orientation 30
2.3.3 Health communication and health information sources 31
2.3.4 Health information-seeking and its variables 35
2.3.5 The media and mass communication 38

Stellenbosch University http://scholar.sun.ac.za

2.3.6 Media literacy and health literacy 39

2.3.7 Media types and sources 42

2.3.7.1 Print media 43

2.3.7.2 Visual media 45

2.3.7.3 Audio/broadcasting media 46

2.3.7.4 New media 48

2.3.8 Media effects 54

2.3.9 The role and responsibility of the media 55

2.3.10 Challenges in health reporting 58

2.3.11 Health campaigns 63

2.3.12 Applications of health communication 64

2.4 CONCLUSION 66

CHAPTER THREE 68

RESEARCH METHODS AND PROCEDURES

3.1 INTRODUCTION 68

3.2 STUDY DESIGN 70

3.2.1 Research objective 71

3.2.2 Research and testing environment 71

3.2.3 Research population 72

3.2.4 Measurement procedure 72

3.2.5 Research instrument: Survey questionnaire 74

3.2.5.1 Introductory message, informed consent and e-mail particulars 75

3.2.5.2 Section A: Demographic information 76

3.2.5.3 Section B: Health status 78

3.2.5.4 Section C: Lifestyle factors 80

3.2.5.5 Section C (continued): Health-risk factors 81

Stellenbosch University http://scholar.sun.ac.za

3.2.5.6 Section D: Sources of health information-provision (non-media) 82

3.2.5.7 Section E: Sources of health information-provision (media) 85

3.2.5.8 Section F: Health information needs 89

3.2.5.9 Section G: Closing statement 90

3.3 DATA CAPTURING AND ANALYSIS 91

CHAPTER FOUR **93**

RESULTS AND DISCUSSION

4.1 INTRODUCTION 93

4.2 METHOD 94

4.3 RESULTS 94

4.3.1 Demographic information 95

4.3.2 Residence 96

4.3.3 Morphology 97

4.3.4 Health status 98

4.3.5 Lifestyle 101

4.3.6 Health risk-behaviours 103

4.3.7 Health information source: Non-media 104

4.3.7.1 Health information-seeking: General 105

4.3.7.2 Health information source: Home/family 107

4.3.7.3 Health information source: School 108

4.3.7.4 Health information source: Friends/peers 108

4.3.7.5 Health information source: Healthcare professionals 108

4.3.7.6 Health information source: Stellenbosch University 109

4.3.8 Health information source: Media 109

4.3.8.1 Health information source: Media preference 110

4.3.8.2 Health information source: Printed media – Magazine(s) 111

Stellenbosch University http://scholar.sun.ac.za

4.3.8.3 Health information source: Printed media – Newspaper(s) 114

4.3.8.4 Health information source: Broadcasting media – Radio 115

4.3.8.5 Health information source: Visual media – Television 116

4.3.8.6 Health information source: New media – Internet 117

4.3.8.7 Health information source: New media – Cell phones 118

4.3.8.6 Health information source: Other media sources 118

4.3.9 Health information needs 119

4.3.10 Assistance with health management and health improvement 120

4.3.11 Health information and health communication needs 121

4.4 CONCLUSION 123

CHAPTER FIVE **126**

SUMMARY AND RECOMMENDATIONS

5.1 INTRODUCTION 126

5.2 RESULTS AND RECOMMENDATIONS 127

5.3 LIMITATIONS 132

5.4 RESEARCH CONTRIBUTION 133

5.5 CONCLUSION AND REMAINING CHALLENGES 133

LIST OF REFERENCES **136**

APPENDIXES **149**

LIST OF FIGURES **162**

Figure 2.1: A people and places framework for public health influence. 15

Figure 3.1: The Stellenbosch University campus. 72

Stellenbosch University http://scholar.sun.ac.za

Figure 3.2: Introductory message to research questionnaire. 76

Figure 3.3: Agreement and informed consent. 76

Figure 3.4: Research questionnaire: Demographic information. 77

Figure 3.5: Research questionnaire: Demographic information (continued). 78

Figure 3.6: Research questionnaire: Health status. 79

Figure 3.7: Research questionnaire: Health status (continued). 80

Figure 3.8: Research questionnaire: Lifestyle indicators. 81

Figure 3.9: Research questionnaire: Health-risk factors. 81

Figure 3.10: Research questionnaire: Health-risk factors (continued). 82

Figure 3.11: Research questionnaire: Health information sources (non-media) (continued). 83

Figure: 3.12: Research questionnaire: Health information sources (non-media) (continued). 84

Figure 3.13: Research questionnaire: Health information sources (non-media) (continued). 85

Figure 3.14: Research questionnaire: Health information sources (media). 86

Figure 3.15: Research questionnaire: Health information sources (media) (continued). 87

Figure 3.16: Research questionnaire: Health information sources (media) (continued). 88

Figure 3.17: Research questionnaire: Health information needs. 89

Figure 3.18: Research questionnaire: Health information needs (continued). 90

Figure 3.19: Research questionnaire: Closing statement. 90

Figure 4.1: The BMI kg/m² of the total (N=281) study cohort. 98

Figure 4.2: Comparison of health status and the need to look for information among the study cohort. 99

Stellenbosch University http://scholar.sun.ac.za

Figure 4.3: The relationship between gender and the need/reason for health information-seeking among the study cohort. 105

Figure 4.4: The relationship between gender and the types of health topics accessed by the study cohort. 107

Figure 4.5: Media preference for health information-seeking indicated by the study cohort. 110

Figure 4.6: Indication of ethnicity and preferred magazine use as health information source among the study cohort. 113

Figure 4.7: Indication of gender and preferred magazine use as health information source among the study cohort. 113

LIST OF TABLES

Table 2.1: Models of media effects. 19

Table 2.2: Australia's strategy for quality use of medicines. 60

Table 4.1: Research cohort sample demographics. 96

Table 4.2: Morphological characteristics of the research cohort. 97

Table 4.3: Health information needs expressed by the study cohort. 121

Stellenbosch University http://scholar.sun.ac.za

CHAPTER 1

PROBLEM STATEMENT AND RESEARCH AIM

1.1 INTRODUCTION

The widespread use of media and information technology (IT) is making a deep impact on many societies across the world. As a result of these new technologies and the opportunities they provide, it is widely believed that modern societies are becoming increasingly more dynamic, complex, less isolated and more interconnected (Gustafson, Dellve, Edlund & Hagberg, 2003:565). According to researchers, young adults' access and exposure to these different kinds of media and ITs (associated with the IT revolution) available to them in the modern world, have enabled them to obtain information as well as share this information more than ever before (Gustafson *et al*., 2003:565). Young adults experience, and are disproportionally burdened by many health issues that are specifically related to this age group. This population group, often for the first time, have to take responsibility for their own health and lifestyle decisions. These decisions include drug and alcohol use, coping with injury and violence, preventing and managing sexually transmitted infections, preventing pregnancy, balancing nutrition and recreational needs as well as negative lifestyle choices. Media technologies offer new avenues for communicating with, informing and reaching these young adults on a wide range of sensitive health topics (Rushing & Stephens, 2011:135).

Currently "health" is one of the main topics covered by the mass media and the public finds itself immersed in a veritable sea of health related news from many different sources, often without the means to discern what is really useful or important, or understand the true significance of the intended health messages, or even appraise their accuracy (Carducci, Alfani, Sassi, Cinini & Calamusa, 2011:475). In this sense the mass media serve as the technological and informational instruments (newsprint, television, radio, Internet, digital worlds, etc.) through which interactivity and communication processes in the modern world takes place and the commercialisation of the media have created the outlets that send out the messages via various mass

Stellenbosch University http://scholar.sun.ac.za

media sources to which this younger generation increasingly have access (Turow, 2009:17). Carducci *et al*. (2011:477) are of opinion that the impact of the mass media on citizens' knowledge and perception of health issues is rarely studied as a specific means to promote public wellbeing.

The mass media perform several important functions in society. These include the provision of information, entertainment, articulating and creating meaning of information, setting agendas for individual and social discourse and influencing behaviour (Grilli, Ramsay & Minozzi, 2009:1). The mass media also play a substantial role in defining health and illness, detailing products and services that are designed to assist and inform individuals in negotiating their health and well-being (Cotten & Gupta, 2004:1796). In this context, many population surveys have recognised the mass media as the main source of public health information-provision (Carducci, 2007:83 & Calamusa, 2007:63 as cited in Carducci *et al*., 2011:475; Dutta-Bergman, 2004a:273).

The mass media are in the business of selling the public health information, products and behaviours that are not necessarily good for them (Brown & Knight, 2006:459). When applied to health, the development of a media literacy competency has become an important skill in order to help young adults to take note of the disparity in the information provided by the media. The skill of developing media literacy refers to the process or competency of critically analysing and learning to evaluate information presented in the media, as well as the ability to create one's own messages in print, audio, video and multimedia (Hobbs, 1998:16). Brown and Witherspoon (2002:165) suggest that by gaining critical analysis and viewing skills, media literacy is believed to lead not only to greater understanding of content and stories the media tell, but may also result in personal changes. These changes manifest when people who more frequently engage the services of mass media for health information-provision, are better able to discriminate between useful and non-useful information, have more acceptance and retention of information and possess better communicating skills (Cotten, & Gupta, 2004:1798). By increasing awareness of how the popular media are packaged, (in which most young adults are immersed), young adults could become more media literate and critical of what they hear and see. Research has shown that the media do affect certain adolescent behaviour that could continue into the young adult stage of the life cycle (Brown & Knight, 2006:459).

Stellenbosch University http://scholar.sun.ac.za

Health information-seeking is viewed as a purposeful and goal-oriented activity, an active effort made by the individual to obtain specific health information, rather than the result of passive exposure to information presented in an environment (Niederdeppe, Hornik, Kelly, Frosch, Romantan & Stevens, 2007:154). The Pew Internet and American Life Project, as reported by Anker, Reinhart and Feeley (2011:346), indicate that 113 million Americans have searched the Internet for health information in the past year.

The process of active and passive gathering of health information through a complex network of sources, have become a vital process initiated by people, to achieve good health, elude health threats, avoid illness, and when necessary, navigate diagnosis, prognosis and treatment on the way to recovery (Beaudoin & Hong, 2011:587). These researchers are also of opinion that information-seeking occurs within *information fields,* where individuals are embedded in at the beginning of the information-seeking process. This can facilitate or constrain their access and exposure to various information sources and their subsequent motivation to seek out additional information. According to them *information pathways* on the other hand are dynamic and active, and in this regard individuals can pursue their information needs through a matrix of channels, sources and messages. Individuals construct fields to meet their information needs, they move through pathways to discover information that can be either consistent or inconsistent with their needs, views, and beliefs (Beaudoin & Hong, 2011:587).

The dynamics of health information-seeking among younger adults may be different than among the rest of a population as this population sub-group often have more experience with and access to new types of media and information technologies. Various media technologies are being used (Anker *et al*., 2011:346) to address an array of public health issues and more recent research studies have begun to evaluate these technologies' ability to produce meaningful changes in knowledge, attitudes, intentions and behaviour, among population sub-groups (Rushing & Stephens, 2011:137). Few studies have focussed on where young adults at university/college look for health information (Percheski & Hargittai, 2011:379) and little is known about the extent to which the media and other technologies are used by young adults and whether these information-seeking actions resulted in health behaviour change

Stellenbosch University http://scholar.sun.ac.za

(Reinfeld-Kirkman, Kalucy & Roeger, 2010:422; Anker *et al*., 2011:349; Rushing & Stephens, 2011:135).

A review of literature suggests that predisposing circumstantial factors and characteristics of an individual may lead to engagement in health information-seeking behaviour (Anker *et al*., 2011:346). These factors could be predictive of associated health information-seeking outcomes and provides a specific context in which to examine media use and resultant health behaviour change.

1.2 BACKGROUND TO THE RESEARCH

Although students are seen as a comparatively healthy population group due to their young age and educational level, there are some conditions, circumstances and health impairments that affect this group. Understanding of the diversity of this group, their perceptions of health and lifestyle, beliefs and behaviours, could shed light on the media's effects on their health and lifestyle issues. Students are often inaccurate judges of their own competencies on health information-seeking and dissemination, and this can become an important barrier when developing and building health information competencies. Young adults and students may need assistance in understanding the various health information sources, building awareness of their own skill sets and media literacy competencies, in order to improve their ability to make evidence-based decisions that could impact their health and lifestyle.

The theoretical approach for this research is placed within several research paradigms, firstly including the positivist research tradition (empirical and quantitative) in communication, where knowledge is obtained through objective observation, utilising the survey method of field research. Acquiring evidence-based information on the demographics of young adults, their health concept and behaviour, lifestyle influences, use of media for health purposes as well as their health needs, can not only improve knowledge on this population sub-group, but also provide direction toward action and social change about health issues within this group. Secondly, the research also explores and draws from the information obtained through effect studies, and from a functional analysis viewpoint, investigating social phenomena in terms of their consequences for broader society. Thirdly, the uses and gratification theories focuses

Stellenbosch University http://scholar.sun.ac.za

on how people use media products to meet their needs and interests; it asks and answers why people use mass media, and in this research, how it is applicable to the effects of health communication in a population sub-group. The research is also further placed within the context of an ecological model of health where people and places are the focus for influencing health behaviour in society. It pertains broadly to the interrelations between organisms and their environments.

The numbers of perturbations in personal, social and environmental conditions that are likely to occur during the transition period from adolescence to young adulthood also warrant an examination of correlates that pertain to health behaviour changes in young adulthood. Well-designed and comprehensive health communication research, based on appropriate theories and health models, could be effective in changing knowledge, attitudes, social norms and behaviours among target populations. Fourthly, this research places the Health Belief Model, the Theory of Planned Behaviour and the Transtheoretical Model as theoretical frameworks within which health behaviour is explained. Understanding health behaviour models could guide decision makers in the quest for designing effective strategies to improve the health of students on campus through the use of various health information sources, including the media.

Young adults can affect their own health and well-being by avoiding behaviours that can endanger their health. Cognitive and behavioural interventions may improve self-efficacy levels and help young adults to more active stages and decisions regarding their health.

1.3 AIM OF THE STUDY

The primary purpose of this research was to investigate the various information sources (non-media and media) that young adults use for health information-provision and whether these information-seeking actions resulted in a health behaviour change. First-year students on the campus of Stellenbosch University were chosen for this study as they are a homogenous population group, with little variation in terms of education, socio-economic status and age. The health and health behaviours of individuals are highly dependent on demographic factors (Garcia-Cosavalente, Wood & Obregon, 2010:38). The secondary research aims for the study that were included

Stellenbosch University http://scholar.sun.ac.za

were: establishing a profile of the health status of the target group; whether the action of health information-seeking was performed during the past year; reasons for health information-seeking; health topics most often asked about or accessed; health information sources/channels and frequency of source/channel use, as well as an indication of the information source credibility and quality. The health communication needs and preferences, and health assistance and management needs on the university campus were also important research variables to establish.

Various phenomena and predictors exist that can be associated with health-information seeking behaviour. Analysing the use of various information sources, especially media sources used for health information provision in a population sub-group such as students, could provide valuable information for any planned actions to encourage health behaviour change among young adults on a university campus.

Despite interest in health information provision and dissemination, there has been little empirical research that addresses where students receive their health information. More research is needed in order to develop effective health education and health promoting policies, programmes and practices targeting the student population. Information provision to the public at large is a responsible act. In this context the media do matter. By creating an awareness of sound, intelligent health information-seeking options, the health of young adults in a media-saturated environment could be positively impacted and improved. The study of the different role players within the health communication chain, as well as establishing the needs of the health information-seeker in specific population groups, could be useful to draw up guidelines for information provision in the quest to improve personal health management.

Improving an awareness of media content, by introducing health literacy and media literacy campaigns within this group, could be a fruitful strategy toward effective health behaviour change. Health-promoting interventions using media technologies, familiar to the young adult, and based on the behaviour change theory could be more effective when tailored to the needs of this specific group of users.

Stellenbosch University http://scholar.sun.ac.za

1.4 LIMITATIONS

This study used the web-based survey method, developed for research purposes and introduced by Stellenbosch University (SU) three years ago. This type of electronic surveys is not popular among the student population on campus, as was indicated by the students that participated in the pilot study. This could have contributed to the low response rate observed for this research.

Self-reported information on survey questionnaires are commonly used in research. This might however have influenced results on body mass index (BMI) scores for the group. The self-reported information on the physical characteristics of body weight and body height could be subjective and not as accurate as it could be.

Due to the broad range of questions included in the newly designed research questionnaire, validations for some of the research constructs were not available.

1.5 TERMINOLOGY

The following definitions and context descriptions are applicable to the terminology used in this study.

- ***Health communication*:** The World Health Organisation (WHO) defines health communication as "a key strategy to inform the public about health concerns and to maintain important health issues on the public agenda". It is also the art and technique of informing, influencing and motivating individual, institutional and public audiences about important health issues that can contribute to all aspects of disease prevention and health promotion (Thomas, 2006:173).

- ***Audience*:** The people to whom a media product is directed to (Turow, 2009:41). The group, people, persons, regular public at a public event; reached by book, radio, television, etc.; listeners, viewers, participants; devotees or followers, etc. (WED: World English Dictionary, 2011).

- ***Media*:** The media are technologically developed and economically profitable forms of human communication, held either in public or private ownership, which can

Stellenbosch University http://scholar.sun.ac.za

transmit information, education and entertainment across time and space to large groups of people (O'Shaughnessy & Stadler, 2002:4).

Media refer collectively to the means of communication that reach or influence large numbers of people such as radio, television, newspapers, magazines, films and new media (Internet; ICTs, etc). (WED: World English Dictionary, 2011).

The main means of mass communication, *esp.* newspapers, radio and television, regarded collectively; the reporters, journalists, etc., working for organisations engaged in such communication (OED: Oxford English Dictionary, 2011).

- ***Media literacy*:** Media literacy is known as a set of perspectives that are actively used by people to expose themselves to the mass media and to interpret the meaning of the messages they encounter. People's perspectives are built from knowledge structures and for this, tools, raw material and personal willingness is needed. Tools are people's skills, the raw material is information from the media and the real world and the willingness is from the personal locus within each individual (Potter, 2011:19).

  Media literacy is a repertoire of competencies that enable people to analyse, evaluate and create messages in a wide variety of media modes, genres and forms (Wikipedia).

  It is also about the ability to sift through and analyse messages provided by the media that inform, entertain and sell us information. It is the ability to bring critical thinking skills to bear on all media modes. It is about asking pertinent questions about what information is available and noticing what is not there, the instinct to question what lies behind media production and information – the motives, the money, the values and the ownership; to be aware of how these factors influence the content of information and messages provided by the media (Tallim, 2011:1).

- ***Health literacy*:** The World Health Organisation (WHO) defines health literacy as "the cognitive and social skills and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" (WHO, 1998:10).

- ***Media source*:** The format, type or source through, or by which information is communicated to the public. Messages and information are provided through the mass media in many forms such as books, newspapers, magazines, radio stations, television, films, advertisements, interactive multimedia, computers, cell phones and

Stellenbosch University http://scholar.sun.ac.za

the Internet. Communication channels/types/sources may be categorised into different groups based on their information, education and entertainment orientations (Dutta-Bergman, 2004a:275).

- ***Health*:** Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO: World Health Organisation, 2011). It is the condition of an organism or one of its parts in which it performs its vital functions normally or properly, free from physical disease and pain (MD: Merriam-Webster's Medical Dictionary, 2011).
  The soundness of body; that condition in which its functions are duly and efficiently discharged (OED: Oxford English Dictionary, 2011).
  Also to be seen as a state of being bodily and mentally vigorous and free from disease (WED: World English Dictionary, 2011).

- ***Lifestyle*:** A style or way of living (associated with an individual person, a society, etc.); *esp.,* the characteristic manner in which a person lives (or chooses to live) his or her life (OED: Oxford English Dictionary, 2011).
  The habits, attitudes, tastes, moral standards, economic level etc., that together constitute the mode of living of an individual or a group (WED: World English Dictionary, 2011).
  The way of life or style of living that reflects the attitudes and values of a person or group (MD: Merriam-Webster's Medical Dictionary, 2011).
  An individual's actions and manner of existence (Concise Oxford Dictionary of Current English, 1972:701).

- ***Young adult*:** A person in the early years of adulthood (Dictionary.com, 2011). Young adulthood is defined as the years (a period) between 18 and 25 (Young Adult Development Project, 2011).
  According to the Educational Resources Information Centre, the age level descriptors for young adults are 18-30 years, (ERIC Thesaurus, 2001:1).

- ***University environment*:** Historically, universities have been defined as a community for advanced knowledge creation and for instruction of an elite group of youth (Husén & Postlethwaite, 1994:6547).
  A university environment is a very specific environment in which young adults live for a period of time during the transition from adolescence to young adulthood.

Stellenbosch University http://scholar.sun.ac.za

Attending university is a life transition for most young people (Leslie, Sparling & Owen, 2001:119).

- ***Health-risk behaviour*:** A term expressing behaviour that exposes the individual to hazardous circumstances, consequences or mischance (Concise Oxford Dictionary of Current English, 1972:1078).

Risk factors are lifestyle and genetic variables that may lead to disease (Hoeger & Hoeger, 2009:514).

1.6 EXPLANATION OF CHAPTERS

A brief description of the thesis chapters is now provided. Chapter two provides a review of literature on the research topic and concepts related to young adults, their health and the media; health orientation; health communication and health information-sources; health information-seeking and its variables; the media and mass communication; media- and health literacy; media sources; media effects; the role and responsibility of the media in health information provision; challenges in health reporting; health campaigns and the applications of health communication. The research method and research instrument that was used for the study is described in chapter three. The data presentation, analysis, and discussion of the research results, with descriptive tables and figures, are provided in chapter four. The conclusions from the research, discussions, research contribution, research limitations and recommendations are made in chapter five. The list of references, Appendices, Tables and Figures follow.

Stellenbosch University http://scholar.sun.ac.za

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Health information-seeking is a complex and dynamic construct. This has come about because of the surge in the use of all formats of media in the process of health information-gathering. Information about health can be diffused through various communication channels, such as healthcare professionals, interpersonal communication channels and a range of media sources (Garcia-Cosavalente, Wood & Obregon, 2010:37). These mass media sources are the vehicles that convey and provide information to societies within a continuous changing media landscape in countries throughout the world. New ways of communicating and obtaining information and knowledge affects all of society and an increasing necessity has developed to adapt to this expanding and evolving media landscape. In this changing media landscape, society will need to acknowledge and conceptualise multiple literacies (print, visual, media, computer, digital and informational) in order to effectively use the health information offered by the media.

Health information-seeking has recently been sparked by two different processes, namely that of the explosion of a health care consumerism across the globe as well as the limitless access to health information available to all consumers, especially through the Internet (Brashers, Goldsmith & Hsieh, 2002:273). Audiences are diverse and today they have increasing opportunities to choose which media and aspects of media they will attend to and which they choose to learn from (Brown & Witherspoon, 2002:153). The various media sources available today provide different opportunities for learning about health.

Health information can be transmitted through different means and instigated by various intentions of the health information-seeker. According to health communication scholars such as Brashers *et al.* (2002:258), Dutta-Bergman (2004a:273) and Garcia-Cosavalente *et al.* (2010:38), active communication channels such as interpersonal communication, print readership and Internet, usually serve as

Stellenbosch University http://scholar.sun.ac.za

primary sources of health information for those individuals who *are* health-conscious. *Active* health information-seeking involves a conscious effort by consumers to reduce a gap in knowledge. In contrast, the more *passive* media communication formats such as television and radio, serve as a primary health information source for those individuals who are *not* health-oriented. This type of health information-gathering might be acquired in an unintentional way by these consumers.

Evidence in literature provides insight into the health information-seeking behaviours of consumers within developed and developing countries and indicates that this aspect has been less explored by researchers (Garcia-Cosavalente *et al*., 2010:37). Other aspects of research on health information-seeking that is also still inadequate are information on what types of media serve as sources for health information and which segment of a population they target, as well as what mechanisms influence the health seeking behaviour of these population sub-groups (Dutta-Bergman, 2004a:274).

The study of health is to a large extent linked to the study of a healthy way of life (Ivakhnenko, 2007:19). This concept implies maintaining an optimal regimen of work and rest; good nutrition; adequate physical activity; personal, mental and public hygiene; protection of the environment and beneficial forms of leisure activity. The violation of just one of these aspects could have a negative impact and can nullify any efforts to safeguard and strengthen an individual's health (Ivakhnenko, 2007:20).

According to researchers from Canada (Fletcher, Bryden, Schneider, Dawson & Vandermeer, 2007:482), health research has relatively neglected the young adult population (18-25 years of age) and this is most likely attributable to the fact that young adults typically perceive themselves to be insusceptible to infirmity and usually experience optimal levels of health during this phase of life (see also Hovell, Mewborn, Randle & Fowler-Johnson, 1985; Lipnickey, 1986; Boehm, Selves, Raleigh, Ronis, Butler & Jacobs, 1993). However, since 2000, the American College Health Association (ACHA) has been actively involved to expand data and provide information on the understanding of the health needs and capacities of young adults in the United States of America (USA) (ACHA-NCHA, 2009:447). This organisation has been collecting data through the National College Health Assessment (NCHA) and during the period from 2000 to 2008, data has been collected from 554,192 college students at 435 institutions of higher education in the USA (ACHA-NCHA, 2009:447).

Stellenbosch University http://scholar.sun.ac.za

This NCHA survey instrument was designed to collect information on a broad range of student health behaviours, indicators and perceptions and also to create evidence-based approaches aimed at improving the health of young adults at universities and colleges.

University students are an important target population for health promotion efforts and researchers suggest that their health is an important and neglected public health problem (Fletcher *et al*., 2007; Kwan, Arbour-Nicitopoulos, Lowe, Taman & Faulkner, 2010a:555). Other areas of research on student health also indicate that health problems may influence student attrition, particularly of first year students (Fletcher *et al*., 2007:482; ACHA-NCHA, 2009:478). All these researchers confirm that information concerning the health needs and health problems of young adults are still inadequate. The ACHA-NCHA documents on health-promotion suggest that professionals in higher education should conduct population-based assessments of students' health status, influences and needs, as a critical indicator of evidence-based practice (ACHA-NCHA, 2009:477). According to one of the largest biomedical research funding agencies in the USA, the National Cancer Institute (NCI), all formats of health communication is seen as vital to the future in the management of health in a society (Maibach, Abroms & Marosits, 2007:88).

The success of the ACHA-NCHA campaign in the USA have highlighted and challenged further research in the field of student health. Other countries such as South Africa could benefit greatly by becoming more involved in evidence-based research for better understanding of the influences that impact the health behaviours of their students and in improving and planning student health initiatives through the use of various media.

2.2 THE RESEARCH PARADIGM

As introduction to the research paradigm, the context for this research is firstly placed within an ecological model of health suggested by Maibach *et al*. (2007), where *people* and *places* are the focus for influencing health behaviour in society. The research approach is further placed within the positivist research tradition (empirical and quantitative) in communication, where knowledge is obtained through objective observation, utilising the survey method of field research. Here the influence that

Stellenbosch University http://scholar.sun.ac.za

various communication sources, including the media, have on knowledge acquisition about health issues among students entering the university environment, is investigated. The theoretical framework for this research further acknowledges the positivist/critical (qualitative) theory and process as an important departure point, placing the facts obtained from the survey in a social context. Acquiring evidence-based information on the demographics of young adults, their health concept and behaviour, lifestyle influences, use of media for health purposes as well as their health needs, can not only improve knowledge on this population sub-group, but also provide direction toward action and social change about health issues within this group. The research also explores and draws from information of effect studies from a functional analysis viewpoint, investigating social phenomena in terms of their consequences for broader society. The uses and gratification research focuses on how people use media products to meet their needs and interests; it asks and answers why people use mass media, and in this research, how it is applicable to the effects of health communication in a population sub-group.

The concept of an ecological context to health communication and its effects pertains broadly to the interrelations between organisms and their environments (Stokols, 1992 in Maibach *et al*., 2007:89). This is interpreted as that the health of populations can be influenced by: (a) the attributes of the people in the population; (b) the attributes of the environments, or places in which members of the population live, work, go to school, are educated, shop, etc.; and (c) important interactions between attributes of people and places. These attributes and their interactions typically influence health through their impact on health behaviour and through direct effects on physical functioning and well-being (Maibach *et al*., 2007:89). According to Maibach *et al*. (2007:89) in this, the suggested *People and Places Framework*, attention is focused on the attributes of people and the attributes of places and that these two are known to influence the health behaviour and health of populations. This framework describes the relevant attributes of "people" as operating in individual, social network and community/population levels of analysis and the relevant attributes of "place" as operating in local and distal levels of analysis (Maibach *et al*., 2007:89). The levels of analysis for this framework are illustrated in Figure 2.1 on the following page.

Theories of social science (observation and interpretation) make it clear that people exist within various levels of aggregation (Emmons, 2000 in Maibach *et al*., 2007:99).

The ecological framework and model of the people-based influence that Maibach *et al*. (2007:90) suggests are at three levels of aggregation: (a) the *individual level* that influences health and health behaviour and is according to literature, cognitions, affect, skills, motivation, intentions, biological predispositions and demographic factors; (b) the *social network-level* of attributes, the size and connectedness of a person's social network, diversity of ties in the social network, the degree to which the various relations in a social network provide social support and positive modelling, as well as the presence of positive health opinion leaders in the social network, are of importance and (c) which according to Maibach *et al*. (2007:90) is the relevant attributes of *groups, communities and populations,* with regard to their health behaviour and health in general, is the least well understood.

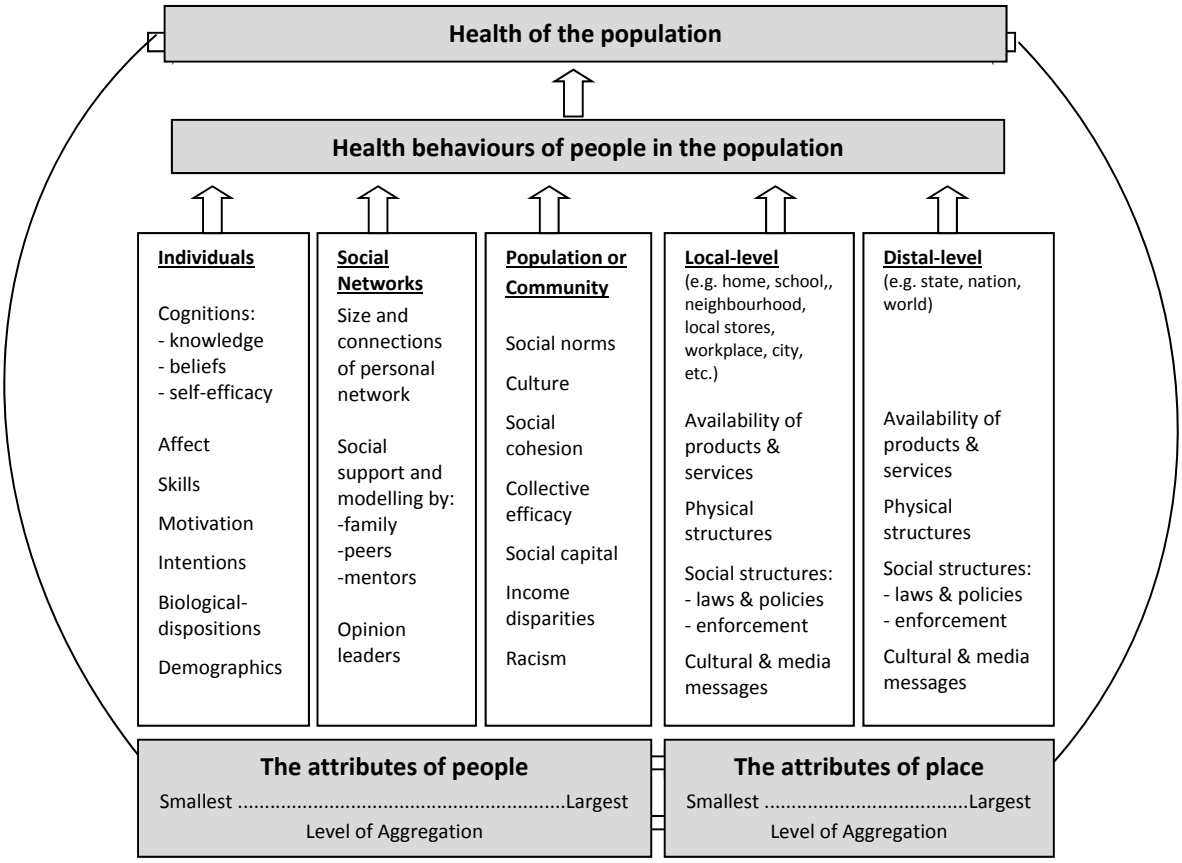

Figure 2.1: A people and places framework for public health influence.

(Source: Maibach *et al*., 2007:90).

Stellenbosch University http://scholar.sun.ac.za

Research in this area reveals that cultural and social norms are important in the context of social capital, social cohesion and collective efficacy. Here socio-economic disparities and racism can also exert an important negative influence on health behaviour and health.

In this social-scientific approach as method of inquiry, aspects of social reality is observed in a holistic way as context and the conclusions about the meaning thereof is formulated in the pursuit of truthful knowledge (Babbie & Mouton, 2009:xxii). Also according to the social constructivist approach, investigation has to be located in a societal context and it assumes that eventual constructions of knowledge are the outcome of numerous behaviours and cognitions by many participants in complex social events (McQuail, 2009:462).

Lives of individuals are spent in a social and physical reality where people live in multiple contexts (Babbie & Mouton, 2009:7). Places are inextricably linked to people and provide a unique field of influence on them. The influence of "place" includes homes, schools, worksites, churches, roads, food markets and restaurants, neighbourhood, cities, etc. and manifests itself in our health behaviour and health in general (Maibach *et al*., 2007:90). Earlier, researchers Cohen, Scribner and Farley (2000:147) also described these *people and place-based* influences and added the following categories supporting the importance of the notion of *people* and *place* in health. The categories are:

- *The availability of products and services*: Increased availability of health-enhancing products and services tends to promote health, while increased availability of health-detracting products and services has a tendency to undermine population health.

- *The physical structures in the environment*: Structures that as a natural by-product of their design encourage healthful actions (e.g. sidewalks, walking paths, stairwells) or discourage unhealthful actions (e.g., reduced serving sizes) or outcomes (e.g., automobile airbags), tend to promote population health. Conversely, structures that as a natural by-product of their design promote unhealthful actions (e.g., super-sized meals, televisions) or enable actions that lead to morbidity or mortality (e.g., poor roadway design) tend to undermine population health.

Stellenbosch University http://scholar.sun.ac.za

- *The social structures in communities and the extent to which they are enforced:* Laws and policies that require (e.g., seatbelt and child restraint laws) or encourage healthful action (e.g., access to fruit and vegetables in schools) and those that discourage unhealthful actions (e.g., high tobacco taxes) tend to promote population health. Conversely, laws and policies that intentionally or inadvertently enable unhealthful behaviour (e.g., permissive alcohol sales regulations) tend to undermine population health.

- *The media and cultural messages in our environment:* Media and cultural messages which model and recommend healthful practices (e.g., advertising which promotes fruit and vegetable intake) tend to promote population health. Media and cultural messages which model or promote behaviours ill-conducive to health (e.g., advertising which promotes the intake of foods high in fats and sugars), tend to undermine population health.

These *people and places-based* factors operate both locally and exert influence in a variety of ways over the behaviour and health of people in that one location (home, school, college, city, etc.) and also more distally (e.g., Houses of Parliament, places where media are situated, etc.), where these places have the potential to influence people's behaviour and health over large geographical regions. These two areas of places have each a distinct influence on health behaviour and the health of populations (Maibach *et al*., 2007:91).

This ecological context of public health action (Maibach *et al*., 2007:89), calls attention to the attributes of people and the attributes of places that are known to influence the health behaviour and health of populations as explained above. The application thereof in the context of this research, applies to the population sub-group of young adults in a university environment. The use of various sources of health communication through the media has been part of communities for decades and these communication "vehicles" are well suited to provide health information to such a population sub-group. The purpose of placing this research in the ecological framework, is to elucidate the influence of individual-level attributes of people (life-stage) and places (the university setting) *en mass* (Maibach *et al*., 2007:92).

Stellenbosch University http://scholar.sun.ac.za

According to health communication researchers, case study evidence (Hornik, 2002), meta-analysis (Snyder & Hamilton, 2002) and systematic literature reviews (Rimer & Glassman, 1999; Noar, 2006; Suggs, 2006), have concluded that public health communication is effective in changing people's behaviour modestly. Public health communication campaigns and efforts to influence a single field (e.g. students) will on average have limited success because of other influences shaping relevant behaviours of people (Maibach *et al*., 2006:93). If, however, health communication to individuals is sufficient and sustained, behaviour change on larger scales are possible (Mitchell, 1997; Sly, Hopkins & Trapido, 2001).

In a critical reflection on the nature of scientific enquiry, meta-theoretical reflection typically addresses the meaning of truth, explanation of phenomena and objectivity (Babbie & Mouton, 2009:20). In this instance, positivism refers to scientific claims that can be postulated on the basis of empirical evidence (survey results) as opposed to claims that are based on religious or metaphysical beliefs (Babbie & Mouton, 2009:22). In social inquiry, the tradition of positivism acknowledges the assumptions of scientific maturity of methodology (quantitative) as found in the natural sciences, it presupposes that natural and social phenomena (qualitative) are sufficiently alike and that there is a degree of similarity in the respective research domains. In this research, both these methodologies will be used to provide answers and evidence on the research questions.

People in society are not merely passive recipients of media information and messages. They will respond to content provided by the media based on their personal backgrounds, interests, level of education and interpersonal relationships (Turow, 2009:160). Effect-studies in communication (the media) seek to discover, describe and explain the media's specific effects on people's behaviour. It makes use of specific, quantitative research techniques such as survey research, content analysis and experimental research. Information-seeking through this method is usually about the impact of a certain type of information, presented through the media, on people's thinking and behaviour (Fourie, 2007:228). According to McQuail (2009:456) a paradox exists in effect-studies in so far that there is a widespread belief, nearing on certainty, that mass media are a powerful instrument of influence on opinion and of effects on behaviour. But at the same time there also exists a great difficulty in predicting effects or in proving that they have happened after an event. Fourie

(2007:229) notes that researchers have for many years made use of various techniques, investigating media effects. These investigations in effect-studies have to be located in a societal context (people and places) and it assumes that eventual constructions are the outcome of numerous behaviours and cognitions by participants within such a context. In these effect studies, meanings (effects), are constructed by receivers themselves and influenced by the immediate social context of the receiver (McQuail, 2009:461). McQuail adds that this approach can be applied to many situations of presumed media influence especially in relation to public opinion and in many types of cognitions (2009:462). Perse (2000, in McQuail, 2009:462) however warns of an oversimplification on the assumption of effects that could be misleading. According to Perse, differences in research areas have different histories and contexts and propose or suggest that these differences are to be addressed in terms of alternative models of effects. Table 2.1 below, summarises the main features of these models of media effects.

Table 2.1: Models of media effects.

Models of media effects			
Models	**Nature of effects**	**Media content variables**	**Audience variables**
Direct	Immediate, uniform, observable Short term Emphasis on change	Salience, arousal, realism	Not relevant
Conditional	Individualised Reinforcement as well as change Cognitive, affective and behavioural Long or short term	Not relevant	Social categories Social relationships Individual differences
Cumulative	Based on cumulative exposure Cognitive or affect Rarely behavioural Enduring effects	Consonant across channels Repetition	Not relevant
Cognitive transactional	Immediate and short term Based on one-shot exposure Cognitive and affective; behavioural effects possible	Salience of visual cues	Schema makeup Mood Goals

(Source: Perse, 2001:51 in McQuail, 2009:463).

Stellenbosch University http://scholar.sun.ac.za

The multiplicity and complexity of phenomena involved in the research on effects of the media on society, individuals and sub-groups of a population, could cause confusion. According to McQuail (2009:465) broad distinctions are made between these effects which are *cognitive* (knowledge and opinion), effects which are *affectual* (attitude and feelings) and effects on *behaviour*. In the past this threefold distinction was treated as following a logic order from first to last. This however has changed as the one aspect is not necessarily more significant than the other.

McQuail (2009:466) suggests the following main kind of media-induced effects: intended change (health choices); unintended change (powerful lifestyle messages); minor facilitated changes (suggestions of the effect of changes in attitude toward health); reinforcing what already exists (the importance of positive health and lifestyle choices) and preventing change (inhibiting health information). These media-induced effects are however not the only possibilities. All media effects begin with attention or exposure to some media message. The results of this/these events extend over time and take on different, often collective forms (McQuail, 2009:470). Because of growing experience among communication scholars and continued research, some inadequacies in several media effect theories and their measurement have been pointed out.

For present and future communication researchers and media workers, knowledge of past and continued effect research is of *strategic*, *scientific* and *ethical* importance (Fourie, 2007:229). An awareness of the different kinds of possible media effects can be contextualised within the health information-seeking paradigm as follow:

- *Strategic importance*: A specific prediction cannot be made of the effect of media content but knowledge that some information/message, structured in a specific way, may have a specific kind of response under certain circumstances is regarded as important. It remains strategically important with regard to social awareness.

- *Scientific importance*: The quest for knowledge about a pervasive phenomenon such as the media makes knowledge and continued research about media effects scientifically important. It can contribute to the increased beneficial use of media for improvement of people's circumstances and society in general.

Stellenbosch University http://scholar.sun.ac.za

- *Ethical importance*: It is and always will be the ethical responsibility of communication researchers and media workers to know about the possible consequences of their work on the lives of people and society at large.

To understand the health information-seeking construct, the categorising of media effects (behavioural effects), as suggested by Grossberg, Wartella and Whitney (1998 in Fourie, 2007:229) is described below;

- *Cognitive effects*; these are media messages that can affect both knowledge and thinking about something, such as health issues and lifestyle.
- *Intended effects*; these effects may have been planned by the media to achieve a specific effect or not. An example is that of a campaign in the media, with information on the consequences for people that lead an inactive lifestyle, intended to warn people against a sedentary lifestyle.
- *Time-scale effects*; these effects may occur on different time scales such as during a short term (exposure to health information while viewing of a programme) and the media user decides to take action based on what he/she has seen, read or heard. Intermediate message exposure could be that of information provided during a series of related messages that can influence the thinking of an individual about the topic (e.g. weight management through the adjustment of lifestyle with suggestions of different actions to include over time). Long term message exposure over a period of time, for example an anti-smoking campaign, might eventually contribute to the decision to quit the habit.

For this research, the study of mass communication (health communication) is based on the assumption that people use media products to meet their needs and interests regarding health issues. Questions will be asked and an attempt will be made to provide answers as to why people use a specific type of medium and for what purpose. The theoretical background for this aspect draws from the *use and gratification* research proposed by Lazarfield and Merton (Turow, 2009:159), that involves two research methods: (a) establishing the use of specific media and what people get from those media, as well as (b) trying to predict what kinds of people use what media

Stellenbosch University http://scholar.sun.ac.za

(Turow, 2009:160). It is important to establish what people do with media as well as to find out what media do to people. People react in countless ways to information provided by the media, whether good or bad (e.g. dressing according to weather forecasts in the media, visiting locations as advertised in the media, adulteration, etc.). Little agreement however exists on the nature and extent of these assumed effects. McQuail (2009:457) reflects on these effects and points out that the media are rarely likely to be the only cause of an effect in society. The media can be a primary or sufficient cause but he states that it is impossible to take full account of all the possible psychological, social and cultural factors involved, which are part of people's daily lives. The media have effects, it however remains difficult to establish when and to what extent/degree an effect has occurred or is likely to occur (McQuail, 2009:477). In an effort to provide more specific answers in this regard, empirical research in this field is of utmost importance.

The media are mere carriers of an enormously diverse set of messages, images and ideas, which originate from society and are "sent back" via the media (McQuail, 2009:457). According to McQuail, researchers in health communication should carefully discriminate between different types of effect and different situations and should give due weight to the fact that the effects are determined at least by the receiver as well as the sender. Effects when they do occur, involve not only the actions of communicators, but the orientations and actions of the audience.

Media effects are strongly influenced by circumstances of time and place, a natural development, according to McQuail (2009:457). In the context of this research, scientist's attention has also been drawn to modelling people's behaviour not only on media effects, of the influence of people and places, but also on the development and refinement of health theories and models that direct people's health behaviour. Classic health behaviour models such as the Health Belief Model, the Transtheoretical Model and the Planned Behaviour Model, are widely used to direct health-promotion interventions, focussing on predicting and explaining individual health behaviour change with less attention to socio-cultural mediators (Neuhauser & Kreps, 2010:10).

The numbers of perturbations in personal, social and environmental conditions that are likely to occur during the transition period from adolescence to young adulthood, warrant an examination of correlates that pertain to health behaviour changes in young

Stellenbosch University http://scholar.sun.ac.za

adulthood. Well-designed and comprehensive health communication based on appropriate theories and health models will be effective in changing knowledge, attitudes, social norms and behaviours among targeted populations (Fukunda & Ebina in Thomas, 2006:173). This research places the Health Belief Model, the Theory of Planned Behaviour and the Transtheoretical Model (Bensley *et al*., 2004 in Ivanitskaya, O'Boyle & Casey, 2006:4) as theoretical frameworks within which health behaviour is explained.

- **The Health Belief Model:**

  The Health Belief Model (HBM) is one of the most commonly used theories in health promotion and education (Glanz, Rimer & Lewis, 2002). This model intends to help assess a person's likelihood of taking a preventative health action based on perceptions of personal risk, the benefits of the proposed action and the barriers to carrying it out (Neuhauser & Kreps, 2010:10). It was developed during the 1950s with the underlying concept that health behaviour is determined by personal beliefs or perceptions about disease and the strategies available to decrease its occurrence (Hochbaum, 1958). There are four perceptions that serve as the main constructs of this model and each of these can be used individually or in combination to explain health behaviour. The constructs from the original HBM are: (a) perceived seriousness (an individual's belief about the seriousness or severity of a disease); (b) perceived susceptibility (personal risk for the individual, the greater the risk of contracting a disease the greater the likelihood of engaging in behaviours to decrease the risk); (c) perceived benefits (a person's opinion of the value or usefulness of a new behaviour in decreasing the risk of developing a disease, and (d) perceived barriers (an individual's own evaluation of the obstacles in the way of adopting a new health behaviour). Other constructs such as culture, education level, past experience, skill, cues to action, self-efficacy and motivation have later been added to the original model (Graham, 2002). The HBM is a conceptual framework used to understand health behaviour and possible reactions for non-compliance with recommended health action (Becker & Rosenstock, 1984:135).

  The health of young adults at university level is important. To enhance the effectiveness of health education and a health promotion programme, applying

Stellenbosch University http://scholar.sun.ac.za

constructs of the HBM to improve health knowledge, attitudes and behaviour, can be of great value.

- **The Planned Behaviour Model:**

  The Theory of Planned Behaviour (TPB) is a continuum health behaviour model and is recognised as one of the best-validated models for understanding why people conduct their health behaviour in a certain way. The TPB is an extension of Ajzen and Fishbein's theory of reasoned action (TRA) that was formulated in 1980 (Kwan, Bray & Ginis, 2010b:45) and identifies three key constructs that influence behaviour: (a) intention; (b) attitude and (c) subjective norms. This resulted from attitude research from the Expectancy Value Models. The TRA was related to voluntary behaviour, but later this behaviour appeared not to be 100% voluntary and under control and resulted in the addition of perceived behaviour control. With this addition the theory was later named the Theory of Planned Behaviour and is a theory that predicts deliberate behaviour, because behaviour can be deliberative and planned (Ajzen, 2002a:1). The TRA suggests that a person's behaviour is determined by his/her intention to perform the behaviour. This intention is in turn a function of his/her attitude toward the behaviour and his/her subjective norm. According to this model, the best predictor of behaviour is intention. Intention is the cognitive representation of a person's readiness to perform a given behaviour and is considered to be the immediate antecedent of behaviour (Ajzen, 2002b:1). Intention is determined by three factors: (a) attitude; (b) subjective norms and (c) behavioural control. Thus attitudes toward behaviour, subjective norms and perceived behavioural control will influence intentions. The more favourable the attitude and subjective norm, the greater the perceived control and the stronger the person's intention to perform the behaviour in question will be. This theory proposes that people are more likely to intend to perform behaviour if they evaluate it positively and believe that other important people think they should perform it (Kwan *et al*., 2010b:46). Kwan *et al.* (2010b:46) remarks that the TPB addresses the volitional behavioural aspect with the inclusion of the perceived behavioural control variable. This represents the beliefs that an individual has about the presence of factors, that may enable or hinder his/her performance of behaviour and about the perceived degree of control he/she has over these factors. This exerts both direct effects on behaviour as well as on behavioural intentions.

Stellenbosch University http://scholar.sun.ac.za

Young adults entering the university environment are in a new phase of their lives. This period is filled with uncertainty and changes, but this group may have strong intentions to be in control of their lives and manage their health as best possible. When realities of the new environment and competing demands, expectations and interests present themselves, past behaviours may play a substantial role in predicting students' health behaviours and intentions of management. Attitudes, subjective norms and perceived behavioural control can be significant predictors of student's intentions to manage their health and lifestyle. These constructs are worthy of understanding when evaluating and working with student health issues.

- **The Transtheoretical Model:**

The Transtheoretical Model of Change (TTM), a social-cognition model, provides a theoretical and practical insight into psychological factors linked to health related behaviour. The TTM suggests that behaviour change is accomplished through a series of stages rather than a single or sudden event. The *stages of change* model is an attempt to describe readiness and how people move towards making decisions and behaviour changes in their lives and what happens as they change (Rollnick, Mason & Butler, 1999:18). The model allows for individualised interventions and integrates principles of several major health behaviour theories. It seeks to predict health behaviour change among individuals on the basis of several theoretical constructs (Dempsey, Johnson & Westhoff, 2011:23). The four related constructs/concepts considered central to behavioural change is: *stages of change* (a reflection of the temporal dimension in which attempts to change occur through stages before an individual sustains changed behaviour and theses manifests are in the: (i) precontemplation stage; (ii) contemplation; (iii) preparation; (iv) action, and (v) maintenance), *self-efficacy* (the confidence individuals have in their ability to perform a health behaviour and sustain lasting behaviour change), *decisional balance* (a measure of the balance between positive and negative beliefs about the consequences of health behaviour) and *processes of change* (activities initiated or experienced by an individual in modifying health behaviour and cognition) (Callaghan, Khalil & Morres, 2010:3). The model was developed inductively, through study of change strategies used by individuals who independently quit tobacco use. Further studies have shaped the model to represent how individuals

Stellenbosch University http://scholar.sun.ac.za

succeed or fail in changing various health behaviours, including addictive behaviours and initiating new health regimes (Van Leer, Hapner, Connor, 2008:688). The TTM has been applied successfully to individualise interventions designed to discourage health risk-behaviour (Dempsey *et al*., 2011:24). The appeal of this model does not lie in the precise definition of stages or the intricacies of stage-specific interventions, but in the provision of general guidance (Rollnick *et al*., 1999:19). Any behavioural approach can only be as effective as a person's readiness for and adherence to it (Van Leer *et al*., 2008:688).

Young adults can affect their own health and well-being by avoiding behaviours that can endanger their health (e.g., cigarette smoking and use of alcohol) and adopting behaviours that can enhance their health (e.g., exercising regularly and avoiding health-risks). Cognitive and behavioural interventions may improve self-efficacy levels and help young adults to more active stages and decisions regarding their health. The use of the TTM constructs could serve as a guide and predictor of future change in health behaviour among young adults.

Researchers and academic staff within a university environment can influence the process of health behaviour change among students but will not be able to control the change. Understanding health behaviour models could guide decision makers in the quest for designing effective strategies to improve the health of students on campus through the use of various sources of media. Active participation and collaboration will be required of both parties (students and staff), if successful interventions strategies and programmes for health behaviour change are to be designed and implemented.

2.3 CONCEPT DISCUSSIONS

- **Young adults, their health and the media**

Young adulthood is a time of transition from adolescence to adulthood (±18-25 years) (ERIC Thesaurus, 2001:1) and this stage encompasses many changes including the need for adaptations to lifestyle. This is a time when young adults adopt life-long behaviours that can either have a positive or negative influence on their health and well-being (Taylor, McCarthy, Herbert & Smith, 2009:255).

Stellenbosch University http://scholar.sun.ac.za

Getting comfortable in a changing body and adapting to new responsibilities is a concern for most late adolescents and young adults (Brown & Witherspoon, 2002:158). This is a population sub-group with a complex set of responsibilities and accountabilities (Fletcher *et al*., 2007:483) and also represents an age time-frame of increasing negative health behaviour choices (VanKim, Laska, Ehlinger, Lust & Story, 2010:208). A variety of socio-economic and socio-environmental influences as well as widespread social norms among this group could influence these young adults in a positive or negative way (VanKim *et al*., 2010:215). The health and health behaviours of this group are highly dependent on demographic factors (Stock, Kücük, Miseviciene, Habil, Guillén-Grima, Petkeviciene, Aguinaga-Ontoso & Krämer, 2003:536). Behaviours that are established during this age may well accompany individuals into their middle and later years (Taylor *et al*., 2009:262).

Young adults, especially students, are a comparatively healthy population group due to their young age and high educational level (Stock *et al*., 2003:536). There are however some health impairments that have been described in literature for this population group. According to a survey conducted in Moscow among students (Ivakhnenko, 2007:21), the main factors that prompt students to pay attention to their health were: a deteriorating sense of well-being (66%); the desire to be physically healthy and strong (63%); demands from relatives and friends to be healthy (26%); educational information (24%), and the influence of peers and people around them (17%). However, despite the recent attention to health promotion and illness prevention, young adults continue to engage in a variety of risk behaviours which may negatively influence their current and future health status (Taylor *et al*., 2009:255). Students do not always realise the detrimental nature of the harmful habits they engage in. The factors commonly reported that negatively impact on maintaining and improving their health were: not having enough time (39%); not enough will power (23%); lacking the necessary conditions to maintain health (16%) and not having enough money (12%) (Taylor *et al*., 2009:255). Young adults' state of health is also closely connected with how they spend their "free-time". Self-destructive behaviour such as alcoholism, recreational drugs/narcotics and substance abuse often go hand in hand with sexual promiscuity (Ivakhnenko, 2007:23). Unhealthy practices and behaviours at this stage will

Stellenbosch University http://scholar.sun.ac.za

continue into adulthood and jeopardise their future health status (Unalan, Celikten, Ozturk & Senol, 2008:722).

Health issues among young adults can also be an impediment to learning (Vader, Walters, Roudsari & Nguyen, 2011:2). These researchers report that the most frequently reported impediments to academic performance were: stress, colds/flu, sleep difficulties, concerns about others and mental health.

Young adults grow up in a world saturated with mass media. The mass media are often a window on a larger world outside family, friends and educational facilities. According to a study conducted in the United States of America (USA), statistics indicate that during the stage of late adolescence, the period leading up to young adulthood, 18-year-olds spend on average six to seven hours a day with some form of mass media (Brown & Witherspoon, 2002:154). A few years ago, young adults, when asked what the media source would be most effective to reach them, they ranked radio and magazines first, followed by television (Brown & Witherspoon, 2002:154). In this study, young women ranked magazines just after friends as the most important source of information on lifestyle choices and health issues. According to Heuberger and Ivantiskaya (2011:186) research reveals that a few years later, young adults cited the Internet as their preferred source for health and nutrition information retrieval. The need to find information on health issues has also increased. In 2011, 95% of students reported that they looked for health information during the past year (Percheski & Hargittai, 2011:379).

Little is known about how the use of different media sources affects young adults' health. A number of existing research studies focuses on television, even though television seems not to be the most important media source for most teens and young adults (Brown & Witherspoon, 2002:155). In this context, Brown and Witherspoon (2002:155) suggests a model that assumes that teens and young adults are active users of media and bring with them a set of experiences and motivations that will determine the media they will choose to learn from and how it will be incorporated in their lives. Young adults have an identity, a sense of self that affect their choices and actions in life. This may affect their motivation for using the media and which media source they will select (Brown & Witherspoon, 2002:155). This motivation may influence cognition of facts and the attention given to content,

Stellenbosch University http://scholar.sun.ac.za

as well as how they will interact with this information. Brown and Witherspoon (2002:155) also suggest that media choice and effects will thus be conditional on *who* the individual is at a certain age, the level of physical and psychological maturity, general life-stage interest and their socio-economic status.

Despite interest in health information dissemination, there has been little empirical research that addresses where students receive their health information (Vader *et al*., 2011:2). The rise of electronic texts will lead to fundamental changes in the way information is communicated, retrieved and disseminated, as well as in the way people approach the task of reading and writing and the way people become media literate, in future (Pailliolet & Mosenthal, 2001:xxi).

Media effects will not be uniform among young adults and students. However, an understanding of the diversity of this group, their perceptions of health and lifestyle, beliefs and behaviours could shed light on the media's effects on their health and lifestyle issues. Students are inaccurate judges of their own competencies on health information-seeking (Ivanitskaya *et al*., 2006:11) and this can become an important barrier when developing and building health information competencies. Young adults and students may need assistance in understanding the various health media, building awareness of their own skill sets and media literacy competencies, in order to improve their ability to make evidence-based decisions (Ivanitskaya *et al*., 2006:13). Health educators and health-related professionals who play an active part in promoting health information literacy, need to assist health information consumers in becoming aware of their competencies in finding and evaluating health information as well as their skill limitations in this regard.

The media are not the sole cause of the health status of young adults. This group comes to the media with individual characteristics, formed over time and as a result of socio-cultural exposures that may have provided them with models of healthy or unhealthy behaviour choices. These exposures and experiences will eventually influence what effect the media have on their health. It is known that the media do have an effect, sometimes subtly, other times more powerful, positive as well as negative. It however remains important to learn more about the role the media play in knowledge acquisition and the forming of perceptions about health and lifestyle issues.

Stellenbosch University http://scholar.sun.ac.za

- **Health orientation**

Evidence concerning the determinants of population health continues to grow. The World Health Organisation's (WHO) report (2011) on the "global burden of disease", shows that behavioural factors (such as problematic lifestyle choices concerning diet, exercise, alcohol use, tobacco use, sexual practices and exposure to environmental risks) are key contributors to many worldwide health problems (Neuhauser & Kreps, 2010:9).

In this context, health orientation refers to the extent to which an individual is concerned about health, is willing to look for information on health and where it has emerged as a critical concept in the explanation of the person's health behaviour. It is further more specifically defined as "a goal-directed arousal to engage in preventative health behaviours" (Dutta-Bergman, 2004a:275). According to Dutta-Bergman, literature supports the existence of motivational differences in a people's health orientation. Motivation triggers an individual's interest in health or a health topic, subsequently leading to an active engagement in cognitions and behaviours related to health in general, or a specific health topic. Research conducted by Dutta-Bergman (2004a:275) explores four indicators of health orientation, which are:

- *Health consciousness*: This is the extent to which health concerns are integrated in a person's daily activities. Health conscious individuals are "wellness-oriented" and hold positive attitudes toward preventative measures such as exercising and eating healthy.

- *Health information orientation*: This refers to the extent to which the individual is willing to look for health information. A high level of health information-orientation suggests the willingness to look for information about issues of health and to educate oneself about these issues.

- *Health-oriented beliefs*: Health beliefs refer to the specific cognitions held by an individual about health behaviours, such as eating healthy, exercising, etc. This is at a more cognitive level where health orientation manifests itself in the domain of health beliefs.

- *Healthy activities*: Health oriented individuals are more likely to engage in healthy activities than other individuals in a population.

Stellenbosch University http://scholar.sun.ac.za

Research conducted during the last ten years indicate that the key factors which are integral in population health include individual behaviour, coping skills, heredity, socio-economic status, social support networks, employment or working conditions, environmental influences, access to health care, gender and culture (Fletcher *et al*., 2007:482). Ek & Heinström (2011:201) provide an interesting contribution by adding that convictions that guide individuals' behaviour are not dependent on an acute health status, but is represented by more permanent characteristics anchored in earlier habits and experiences of the person. Health-promoting behaviour is an integral part of life and an orientation and activity which affects an individual's health throughout life (Unalan *et al*., 2008:722).

Many countries have set national population health goals that involve promoting healthier lifestyle behaviours (e.g. the US Healthy People 2010 campaign) and have provided recommend health communication interventions as primary strategies for promoting more healthy living (Neuhauser & Kreps, 2010:10). Communicating this information through various media sources could affect population health.

- **Health communication and health information sources**

If information truly has the ability to influence the health outcomes of society, investment in its production, distribution and delivery will be of utmost importance (Smith & Duman, 2009:276). The World Health Organisation (WHO) in promoting the ethical value of health communication states that "information is a basic right and health for all is a priority throughout the World" (Miranda, Vercellesi, Pozzi & Bruno, 2008:39). Provision of health information is an element to effective, empathetic and honest communication between the public, health professionals and scientists. The best health communication approaches are designed to match the unique characteristics, interests and cultural orientations of intended target audiences (Neuhauser & Kreps, 2010:11).

The public's use of various sources of health information and their perceptions of the relevance and appropriateness of the information provided, are still poorly understood, especially among subgroups of total populations (Brodie, Kjellson, Hoff & Parker, 1999:148). Research findings indicate that health information

Stellenbosch University http://scholar.sun.ac.za

sources (e.g. the written word and Internet information), complement and not replace each other in the information seeking paradigm (Percheski & Hargittai, 2011:379). Changes in new technology such as the Internet and social media have fundamentally changed the way people access information and in future will have a significant impact on how the public communicate about health and how they give feedback on their opinions about health and indicate their health needs.

Health information providers are also expanding options of communication to incorporate a wider range of non-health disciplines, such as local schools, councils and libraries (Smith & Duman, 2009:261). High quality health information provision for the public at large has a key role to play in the future of health management, at individual and commercial levels.

The role of interpersonal communication as a source of communicating about health, treatments and health prevention practices, is well established (Kreps & Thornton, 1992; Brashers *et al*., 2002:260; Dutta-Bergman, 2004a:276). Individuals often gain information about health issues from those in their interpersonal networks and research has indicated that these interpersonal approaches in health communication are more effective in changing individual behaviour (Neuhauser & Kreps, 2010:12). Family and friends often serve as the most popular resources for identifying symptoms, determining possible treatments and making lifestyle changes (Percheski & Hargittai, 2011:379). According to Vader *et al*. (2011:2), for both African American and White students, informal channels such as parents were most frequently used as health information source. This source of information was perceived more believable than those of friends who were also indicated as a frequently used source for health information. Those individuals, who learn health information from interpersonal networks, are more likely to have a strong health orientation (Dutta-Bergman, 2004a:276). According to Heuberger and Ivanitskaya (2011:186), non-professional information sources such as family and friends were usually chosen by young and older adults with less formal education. Heggen, Valerio, Thoar, Rodgers, King, Kur, Brecknell and Emerson (2009:51) also report this tendency and found that in rural West-Africa, traditional communication channels through the local leaders (inter- and intrapersonal), were found to be important information channels regarding health issues. They however state that in such settings it is important to ensure that the health messages are both appropriate

Stellenbosch University http://scholar.sun.ac.za

and understood by community members. Dutta-Bergman (2004a:276) reports that the presence of health-oriented individual(s) in a person's social network is likely to trigger participation in healthful choices. Interpersonal communication is actively oriented in the context of health information provision and gathering. The individual has to actively communicate with others in gathering and interacting with the information.

Formal and more professional health communication channels usually provide the public with information on diagnoses of disease, facts on specific diseases, methods to correct lifestyle, creating awareness on health prevention issues and providing information on new advances in medicine (Miranda *et al*., 2008:40). Kwan *et al*. (2010a:558) report from their research that the most believable sources of health-related information were indicated by the study cohort as being from medical staff at a health centre at a 92% indication; health educators at 90%; faculty/coursework at 64%; leaflets at 46% and parents at a 45% indication level. In a study conducted by the *Washington Post* in 2003, 37% of the respondents indicated that they would ask a health professional for health-related information (Simbra, 2005 in Schwitzer, Mudur, Henry, Wilson, Goozner, Simbra, Sweet & Baverstock, 2005:0579) and also indicated that they perceived the information provided through this source as reliable. Another group of professionals are the health science librarians, who within a community, could in future be the "information gatekeepers" concerned with controlling the flow of health information, in and out of a library's resources. They could also use their traditional skills (information retrieval, assessment, selection, processing and storage), to provide for services in the health communication sphere as advisors, consultants and trainers within organisations, to improve health communication (Miranda *et al*., 2008:40). According to these researchers, it is common to find librarians working as part of health care teams and serving as faculty members in evidence-based medicine courses. They could be of great value as reliable health communication advisors, helping society and health communicators understand and master health material available, as they are trained to locate the best resources available.

In the commercial field of health communication, health communication topics are addressed directly and indirectly related to the field of the activity of an organisation and this communication is extensively conveyed through different

Stellenbosch University http://scholar.sun.ac.za

media channels and targets (Miranda *et al*., 2008:40). According to Miranda *et al*. (2008:40), commercial organisations can extensively provide information and penetrate the communication chain, using these different media channels and addressing a wide range of targets.

Today the media may become the most important source of health information for the general public (Mudur, in Schwitzer *et al*., 2005:0577). The wide variety of media communication channels available may differ in the extent to which they serve as primary health information sources for different segments of a population (Dutta-Bergman, 2004a:284). The media are currently much more than the newspapers, television and radio. They also include new media such as the Internet, Facebook, YouTube, Twitter, other print media and small-scale media, represented by leaflets, posters and information brochures. This category of communication sources also includes other marketing tools such as pens, buttons, banners, etc. (Baverstock in Schwitzer *et al*., 2005: 0582).

The widespread use of information technology (IT) is making a deep impact on many societies across the world. As a result of these new technologies and the opportunities they provide, it is widely believed that society is becoming increasingly more dynamic and complex (Gustafson *et al*., 2003:565). According to these researchers, young adults' access and exposure to the different kinds of media technologies have enabled them to obtain information as well as share this information more than ever before. The increasing number of people searching for health information on the Web is a worldwide phenomenon. According to Miranda *et al*. (2008:40), this phenomenon could affect the doctor-patient relationship in future, with the Web assuming the role of a virtual councillor.

Interpersonal communication has also crossed to the next level through the increasing use of IT. Gowen (2011:2) revealed through a survey conducted in 2008, that half of the adult health information seekers have read someone else's commentary or experience about health or medical issues on an online group, website or blog, on the Internet. The increased use of particularly computers, the Internet, social media and mobile telephones will continue and Mark Zuckerberg, inventor of *Facebook*, predicts that each year, twice as much information will be

Stellenbosch University http://scholar.sun.ac.za

shared across networks, making these powerful information and communication sources (Johnson, 2010:21).

As society moves toward finding evidence-based medicine and health information, health providers, health educators and health care consumers must acquire not only basic health-information literacy skills, but also more advanced health-seeking competencies (Bradley & Herrin, 2004:1). According to Ivanitskaya *et al*. (2006:6), these competencies include the ability to evaluate the quality of health information resources, obtaining health information documents on narrow topics by conducting advanced searches, judging the trustworthiness of health information sources and understanding the advantages and disadvantages of different media sources.

Difficulties in communications about health arise not so much from research itself as from the gap existing between scientists and health communicators and also in how research tends to be interpreted by the press as well as the public (Miranda *et al*., 2008:39).

The synergistic contributions of mass media and interpersonal communications are needed to effect health behaviour change on individual, institutional and social levels (Neuhauser & Kreps, 2010:12). Acquiring health information through different media sources could provide the individual with a broader, balanced and more thorough knowledge base to build health information-seeking skills. Finding a balance in the use of these different kinds of information provision provides a challenge in order to benefit from them and to avoid risks.

- **Health information-seeking and its variables**

Health information-seeking is defined as "the search for and receipt of messages that help to reduce the uncertainty regarding health status and to construct a social and personal (cognitive) sense of health" (Cotten & Gupta, 2004:1796). Niederdeppe *et al.* (2007:153) adds to this definition by suggesting that health information-seeking is also a "purposeful and goal-oriented activity to obtain specific health information, rather than the result of some passive exposure to information in one's environment". In the context of health, this search for information takes form in the manner of how people sort through external health

Stellenbosch University http://scholar.sun.ac.za

information and, thereby, determines what is useful and what is not. This is both an active and passive gathering of health or medical information through a complex network of sources, and is a vital process that people can use to achieve good health, to elude health threats and illness and when ill, to navigate diagnosis, prognosis and treatment on the way to recovery (Beaudoin & Hong, 2011:587).

Apart from professional health care providers, traditional modes of health information-seeking include the use of local experts and the mass media. These are magazines, newspapers, other printed publications, television, radio, street signs and billboards as well as the World Wide Web (www) (Cotten & Gupta, 2004:1796).

Various phenomena and predictors exist that can be associated with health-information seeking behaviour. These include socio-economic, demographic and geographic factors, as well as issues of age, gender and levels of education of a population group (Garcia-Cosavalente *et al*., 2010:38; Percheski & Hargittai, 2011:379). Age, gender and education are among the most important predictors of looking for health information and especially looking for this information online (Percheski & Hargittai, 2011:379). These contextual and structural factors can play an important role in health information-seeking behaviours. Anker *et al.* (2011:347) identify some key associations regarding the study of health information-seeking. These are: (a) predisposing characteristics of health information-seekers; (b) characteristics of health information-seeking behaviours; (c) outcomes associated with health information-seeking and (d) methods and measures in information-seeking. Also, some researchers have argued that health information-seeking occurs within *information fields*, which is described as the starting point for information-seeking (an active or passive process), or through *information pathways* within in which individuals are embedded, and could facilitate or constrain their access and exposure to various information sources (Beaudoin & Hong, 2011:587). These *information pathways* are different in that they are dynamic and active. In this regard, Beaudoin & Hong (2011:587) report that individuals can pursue their information needs through a matrix of channels, sources and messages and thus construct fields to meet their information needs while moving through them. These *information pathways* or *information horizons* could either be consistent or inconsistent with the individuals' needs, views and beliefs. *Information horizons*

Stellenbosch University http://scholar.sun.ac.za

vary between individuals and encompass a myriad of informational sources, including media, documents, social networks, and direct observation of the world.

Other areas of research in the area of influences on health information-seeking have shown an association with people's likelihood to access health information through more traditional resources such as medical books and also using the Internet, when higher levels of education are reported (Gollop, 1997; Carlsson, 2000; Garcia-Cosavalente *et al*., 2010). According to Njoku (2004:298) and Cotten & Gupta (2004:1798), urban and rural populations differ in health seeking behaviours, with people living in rural areas more likely to depend upon friends, relatives and the radio to obtain health information due to issues of illiteracy, lack of infrastructure and poverty. In this context and considering these types of issues, researchers recommend that communication channels should be grounded in local culture, oral traditions and indigenous knowledge (Ikoja-Odongo & Ocholla, 2006:55).

Additional predictors of health information-seeking beyond the basic demographic factors also exist. Race/ethnicity, cognitive ability, Web-skill, social support and other health disparities are rarely examined in the context of health information-seeking variables (Percheski & Hargittai, 2011:379).

Few studies have focussed on where young adults at university/college look for health information (Anker *et al*., 2011:349; Percheski & Hargittai, 2011:379). The dynamics in health information-seeking among younger adults may be different than among the rest of a population as young adults often have more experience with and access to new types of media. Cotten & Gupta (2004:1798) report that the more experienced a Web and Internet user is, the more likely he/she is to search for health information online. People who more frequently engage services of mass media are better able to discriminate between useful and non-useful information, have more acceptance and retention of information and possess better communicating skills (Cotten, & Gupta, 2004:1798).

Determining the characteristics of online and offline health information-seekers could also be of value to better recognise their unique needs. Cotten and Gupta, (2004:1803) have found in their research that Internet health information-seekers were healthier than were the non-Internet health information-seekers. In the current information age, income and education were found to relate well with whether

Stellenbosch University http://scholar.sun.ac.za

individuals sought health information online or offline. Whatever the media source, health information-seeking variables or the circumstances, mass communication of health messages play an important role in health information-provision.

- **The media and mass communication**

  Defining the media is not easy as the media are constantly changing with the development of new forms of technologies. However it can be said that "the media are technologically developed and economically profitable forms of human communication, held either in public or private ownership, which can transmit information, education and entertainment across time and space to large groups of people" (O'Shaughnessy & Stadler, 2002:4). This communicative exchange in the transmission of information leads to mass communication.

  Mass communication involves the production of a large variety of messages by an institutional group or a collective communicator. The messages are distributed and transmitted by means of technological media to reach large, heterogeneous and widely dispersed audiences who may interpret the messages in a variety of ways. The content of mass communication is a mix of information, views, entertainment and advertisements (Fourie, 2007:96).

  Turow (2009:6) adds to this definition by identifying different types of communication such as interpersonal, intrapersonal, small group, organisational, professional and public communication, all with a central similarity of involving messages. According to Turow, every interaction that involves messages, displays seven elements, the *source, encoder, transmitter, channel, decoder, receiver* and *feedback* (Turow, 2009:9). Mass media therefore are the technological instruments (newsprint, television, radio, etc.) through which mass communication takes place and mass media outlets are companies that send out the messages via mass media (Turow, 2009:17). An understanding of mass communication would not be complete without adding Harold D. Laswell's (1902-1978) view of defining the communication process via the media. He defined communication in a linear way as "who says what in which channel to whom with what effect" (Du Plooy, 1997:6). This defines the field of communication as media, audience and effect analyses,

Stellenbosch University http://scholar.sun.ac.za

with the emphasis placed on the intentions of communicators and their messages and the effect these messages have on society (Du Plooy, 1997:6).

The mass media perform several important functions in society, including providing information, entertainment, articulating and creating meaning, setting agendas for individual and social discourse and influencing behaviour (Grilli *et al*., 2009:1). Mass media also play a substantial role in defining health and illness, detailing products and services designed to assist individuals in negotiating their health and well-being (Cotten & Gupta, 2004:1796). Hospitals, public bodies, academic institutions, scientific associations, pharmaceutical industries, patients' leagues and blogs, spas and fitness centres, all provide health information (primarily for education) to people through the mass media and health campaigns (Miranda *et al.*, 2008:40). Along with this role of the media, the area of media advocacy (as in health communication issues) could also provide for the specific strategic use of mass media in combination with community (society), organising to advance healthy public policies (Wallack, 2003:594).

Interactivity may be the communication attribute with the greatest power to improve health promotion. According to several researchers (Smith & Duman, 2009; Turow, 2009; Neuhauser & Kreps, 2010:12), indicating the importance of the "transaction between the sender and receiver, a spiral of changing feelings and beliefs". This participatory process in health communication is necessary to internalise the messages in order to effect change (Neuhauser, & Kreps, 2010:12). For health behaviour change to take place, effective communication skills are essential.

- **Media literacy and health literacy**

Media literacy is known as "a set of perspectives that people actively use to expose themselves to the mass media and to interpret the meaning of the messages that they encounter" (Potter, 2011:19). People's perspectives are built from knowledge structures and for this, tools, raw material and personal willingness are needed. Tools are people's skills, the raw material is information from the media and the real world and the willingness is from the personal locus within each individual

Stellenbosch University http://scholar.sun.ac.za

(Potter, 2011:19). According to Potter (2011:20) media literacy displays two important characteristics;

- *Media literacy is a multidimensional aspect*: Most information is usually conceived as facts obtained from books, newspapers, magazines, television, digital media, etc. This only refers to one type of information – cognitive. Media literacy requires that information is acquired and knowledge built in more than just the cognitive dimension. Information from emotional, aesthetic and moral dimensions should also be considered. These four dimensions focus on different domains of understanding such as: (a) *cognitive domain* – factual information (resides in the brain); (b) *emotional domain* – feelings of love, hate, anger, happiness, frustration, etc. (resides in the "heart"); (c) *aesthetic domain* – production of messages, judgements on creative craftsmanship, an appreciation skill, a discrimination skill (resides in the eyes and ears) and (d) *moral domain* – information on values, making reasoned judgements, (resides in the conscience and soul). A person's media literacy perspective should include information from all four domains (Potter, 2011:21).

- *Media literacy is a continuum not a category*: Knowledge or media literacy is seen on a continuum. People display different degrees of knowledge or different degrees of media literacy – at no stage on this line/continuum a person has no literacy (lower end) or is fully literate (high end). People are positioned along this continuum based on the strength of their overall perspective of the media. This strength of a person's perspective is judged according to the number and quality of knowledge structures and the quality of knowledge structures is based on the level of a person's skills and experiences. People vary substantially on skills and experiences, they will also vary on the number and quality of their knowledge structures and therefore there will be a great variation of media literacy across people. At the lower levels of media literacy, a weak and limited perspective of the media is displayed. It shows smaller, more superficial and less organised knowledge structures which provide an inadequate perspective to use in interpreting the meaning of a media message (Potter, 2011:21).

Stellenbosch University http://scholar.sun.ac.za

Other research further refers to media literacy as "the process or competency of critically analysing, interpreting, understanding and learning to evaluate information, products and services, presented in the media, as well as the ability to create one's own messages in print, audio, video and multimedia" (Hobbs, 1998:16; Beacom & Newman, 2010:157). Brown and Witherspoon (2002:165) as well as Beacom and Newman (2010:157) suggest that by gaining critical analysis and viewing skills, media literacy is believed to lead not only to greater understanding of content and stories the media tell, but may also result in some personal changes. These are self-esteem, taking responsibility for one's life, sharing experiences with others, learning the ability to discriminate and express oneself and using health information to make sound health decisions. The World Health Organisation (WHO) defines it as "the cognitive and social skills and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" (WHO, 1998:10).

Research data indicates that many young adults/students lack important competencies and knowledge that may limit their ability to seek health information and make informed health choices (Ivanitskaya *et al*., 2006:11; Beacom & Newman, 2010:157). Health information literacy is a fundamental part of the challenge in influencing and managing population health issues (Smith & Duman, 2009:276). Health literacy has emerged during the past two decades as an important communication issue.

The abundance of health information does not always translate into informed choices. According to Hibbard and Peters (2003, in Ivanitskaya *et al*., 2006:3) three factors should be considered in selecting health information. These are: (a) the complexity and amount of information; (b) the nature of the choice – the degree to which there is right or best option and (c) the experience, motivation and skill of users. Here the last point refers to deficient information seeking skills that may prevent individuals from recognising that key information is missing and from understanding the difference between biased and unbiased information. Distinguishing between evidence-based claims and interpreting the information intended for health information-seekers also becomes important. Heuberger and Ivanitskaya (2011:188) propose that more research is needed on how to build information literacy skills, particularly in the area of critically evaluating health

Stellenbosch University http://scholar.sun.ac.za

information from online sources. Low health literacy is a worldwide problem according to the International Adult Literacy Survey conducted in 25 countries across the world (Organisation for Economic Co-Operation and Development and Statistics Canada, 2000 in Neuhauser & Kreps, 2010:11). The Canadian Council on Learning (CCL) (CCL, 2007) estimated that 60% of Canadian adults lack the capacity to obtain health information and make appropriate health decisions on their own and in the USA it was found that 90 million adults had limited health literacy abilities (Kutner, Greenberg & Baer, 2005 in Neuhauser & Kreps, 2010:11).

Information consumers such as young adults are lured by the ease and expediency of the Internet search engines and they also overestimate their competencies in finding trustworthy information on a narrow topic. The development of proper media literacy that involves the ability to deal with many texts and textual processes is a key to future success in information seeking (Pailliotet & Mosenthal, 2001:x). Health literacy may be particularly important for young adults who must assume responsibility for their own health care decisions in the transition period from paediatric to adult health care. Incorporating health communication into a life context may also enable this group to make changes across a range of health issues (Neuhauser & Kreps, 2010:11).

It is important that young adults are educated to become critical media consumers who by knowing how the media work, will be less seduced by some content, images and ideas presented to them on a daily basis. There is no substitute for good judgement when disseminating information form media sources.

- **Media types and sources**

The media are an extremely important part of people's everyday lives (Potter, 2011:5) and include a host of modern communication systems. Messages and information are provided through the mass media in many forms such as books, newspapers, magazines, radio stations, television, films, advertisements, interactive multimedia, computers, cell phones, the Internet and cross-media connections. It is estimated that the rate of growth of information provision throughout the world is increasing at a rate of 30% each year (Potter, 2011:4). The mass media today have

Stellenbosch University http://scholar.sun.ac.za

to reach their target audiences and in this they must pursue these audiences across media boundaries. These boundaries are increasingly becoming "blurred" with the digital convergence of information provision (Turow, 2009:294). Turow (2009:189) reports that in the past fifteen years, information has moved across a variety of mass media (cross-media connections) for various reasons, reaching audiences as wide as possible and for the financial health of most communication systems. Communication channels/types/sources may be categorised into different groups based on their information, education and entertainment orientations (Dutta-Bergman, 2004a:275). Researchers indicate that a relationship exists among information consumers and the individual characteristics of people and that this will influence how they seek their health information and from what source (Dutta-Bergman, 2004a; Heuberger & Ivanitskaya, 2011; Potter, 2011). Consumers obtain information about health from a variety of media sources and they may have a preference for a specific source (Heuberger & Ivanitskaya, 2011:176).

- **Print media:**

The print media are one of the oldest communication media formats (Turow, 2009:263) and according to research, the print media are superior in reporting to online news services. The greatest differences between the print and online services are in the use of independent information sources in the production of information. Kummervold, Chronaki, Lausen, Prokosch, Rasmussen, Santana, Staniszewski and Wangberg (2008:42) however report a sharp decline in the use of newspapers and magazines as a source for health information in seven European countries participating in a WHO survey from 2005-2008. Print media sources such as newspapers and magazines were often chosen by younger adults with less formal education, as a preferred source for health information (Heuberger & Ivanitskaya, 2011:186).

- Books: The printed book publishing industry is the oldest form of communication media, even older than newspapers (Turow, 2009:263), was widespread by the 1900 and has never reached a peak. The Internet is changing the way books are published and distributed (Potter, 2011:374) and currently book publishers are going beyond the printed page to compete in a new digital environment. The new challenge for the book industry is to keep the essential

Stellenbosch University http://scholar.sun.ac.za

features of a book that have drawn readers over centuries, while giving those features new digital attractions (Turow, 2009:263). People's likelihood to access health information through resources such as medical books is higher when higher education levels are reported (Gollop, 1997; Carlsson, 2000; Garcia-Cosavalente *et al*., 2010).

- Newspapers: Newspapers are typically classified as information-oriented media and it is commonly reported that people often do not read a whole newspaper, but read newspapers-sections that have a direct connection with their personal interests. Newspapers are filled not only with news but also carry entertainment (puzzles, columns, etc.), information (stock listings, scientific discoveries, etc.), education (historical discussions, columns for children, etc.) and advertisements (Turow, 2009:299). Currently newspaper executives acknowledge the Internet as the place that most readers go to find information, and are remaking/transforming their news provision and adding this additional online newspaper versions in order to remain relevant and profitable (Turow, 2009:299). Researchers indicate that newspapers still serve as a credible and reliable source of health information for the public (Dutta-Bergman, 2004a:277). In the USA newspapers with online web sites reach 37% of the American public (Potter, 2011:380) and a *Washington Post* survey indicated that 28% of respondents received health information from newspapers (Stamm, Williams, Noël & Rubin, 2003:144).

- Magazines: This printed format of media (periodicals) was regularly published in England and America by the 1700s (Turow, 2009:343), has survived centuries and today is evidence of a lucrative market in the printing and multimedia industry. The new technological and social environments developing within most societies across the world has transformed the original paper-print into multimedia players, providing information across the world. Turow (2009:374) reports that the magazine industry is varied and has huge differences in types of readership. It ranges from widely read consumer periodicals to narrowly read news and scientific information newsletters. Today, magazines are actively oriented, require cognitive involvement, provide in-depth coverage and directions to additional information, have a long shelf life and also have archival qualities (Dutta-Bergman, 2004a:277). Many magazines have Websites that

Stellenbosch University http://scholar.sun.ac.za

support their paper copies (Potter, 2011:383) in order to satisfy the changing demand of consumers. Research has shown that magazines serve as a primary health information resource for specific segments of the population (Dutta-Bergman, 2004a:277). A *Washington Post* survey indicated that 23% of respondents received health information from magazines (Stamm *et al*., 2003:144), however other research reports that only 19% of young adults believed that information from magazines were reliable (Kwan *et al*., 2010a:558).

- Leaflets/Posters: Research conducted by Kwan *et al.* (2010a:558) indicated that 46% of the respondents found information provided by health information leaflets as helpful and reliable. Leaflets and booklets, delivered through physicians, pharmacists or commercial medical companies, to doctors' consulting rooms, pharmacies etc., also provide educational information usually covering information on high incidence diseases such as asthma, hypertension, diabetes and lifestyle, with the purpose to educate and inform the lay public (Miranda *et al*., 2008:40). In West-Africa health information put on billboards and posters were found to increase knowledge of especially HIV and AIDS, among truckers and other more mobile sections of the population (Heggen *et al*., 2009:46).

- **Visual media:**

- Television: The transmission of audiovisual signals in the mid-1900s introduced television broadcasting to the world. After this period the television industry moved ahead rapidly to become the most efficient way in history to reach high percentages of a population (Turow, 2009:505). With new technologies, commercial cable and satellite television developed and television options were further enlarged by the spread of the videocassette recorder (VCR), digital versatile disk (DVD) and direct-to-home satellite services (Turow, 2009:511). The television industry involves activities that are both traditional and experimental. The primary focus has always been entertainment-oriented but has changed rapidly to include education and information provision as well. The health-conscious consumer looking for health information is less likely to learn from information on television (Dutta-Bergmann. 2004a:278), learning from

Stellenbosch University http://scholar.sun.ac.za

television about health issues is more of a result of serendipitous learning rather than goal-directed learning. These findings are contradicted in other survey research which indicates that many Americans get most of their health news and information from television (Schwitzer *et al*., 2005:0577). According to another survey conducted by Rodale Press, in 2003, 39% of the respondents replied that they turn on the television for health and medical information (Simbra, 2005 in Schwitzer *et al.*, 2005:0579). A *Washington Post* survey also found that television is the primary source of health information for 39% of those who were surveyed (Stamm *et al*., 2003:144), but only 13% of respondents in research conducted in 2010 indicated that this source of health information was believable (Kwan *et al*., 2010a:558). Other research on television viewership has revealed that television viewing has detrimental effects on the health outcomes of people (Dutta-Bergman, 2004a:277). This research states that programmes and advertisements on television have often downplayed the health risks associated with unhealthy practices such as smoking, alcohol consumption and unsafe sex (Kreps & Thornton, 1992; Novelli (1990) & Trauth & Huffman (1986) in Dutta-Bergman, 2004a:278). In these cases television content provided positive reinforcement to unhealthy behaviours by locating such behaviours as indicators of individual sophistication and social acceptance. This research argues that the health conscious individual will not perceive the medium as a primary health information resource. Television is a passively-oriented source. It is a medium that requires less intellectual involvement and cognitive effort compared to the print media (Vivian, 2002 in Dutta-Bergmann, 2004a:278). Individuals that are not health-oriented can learn something about health from television news without having to actively seek out information and engage in it (Dutta-Bergman, 2004a:278).

- **Broadcasting media:**

  - Radio: The radio industry was once the central, most important media source in most developed countries across the world (Turow, 2009:419). The radio industry has also changed to meet the challenges of new technologies invading the traditional "radio-space" (satellite radio and Internet radio) as well as changing societies. Radio stations are working now to become important parts of the digital media revolution in order to meet the needs of modern consumers.

Stellenbosch University http://scholar.sun.ac.za

Communication through this media source is delivered over mass electronic communication networks in various formats (the essence of a radio station – music, news, sports, weather, etc.) and attracts very specific kinds of listeners (Turow, 2009:435). In addition to broadcast radio, satellite radio had entered the market since 2002 and has provided multiple format options to subscribers (Potter, 2011:392). This media source is seen as a more entertainment-oriented source of information provision and the consumption of information is typically a passive act where the messages and programmes are short lived (Dutta-Bergmann, 2004a:279). A health-conscious individual searching for specific health information cannot search easily through radio content to identify material. However, for those individuals who are not health-oriented, serendipitous learning from radio can serve as a primary form of health information gathering (Dutta-Bergmann, 2004a:279). A *Washington Post* survey conducted in 2003 indicated that only 10% of respondents in the research received health information from the radio (Stamm *et al*., 2003:144). In a study conducted by Heggen *et al.* (2009) in West-Africa, 25% of the respondents reported listening to the radio, implicating that in rural areas people have more access to radio than most other types of media and confirms that radio has the ability to attract listeners in every demographic group (Turow, 2009:432). Heuberger & Ivanitskaya (2011: 180) report that young adults indicated they used the more traditional media (radio, printed popular literature and television) at only six percent (6%) as a preferred source for health and nutrition information.

- Films: The major thrust of the feature film industry has always been entertainment. However this has changed in the past decade with several full length motion pictures on environmental issues that have been produced, aimed at educating the public. The number of films produced in the USA, per year, has increased dramatically in the past 40 years (Potter, 2011:387). An unending stream of inventions and technological advances has reshaped the production and distribution of films in the modern era (Turow, 2009:473). Feature films initially produced for theatres are now turned into videos for rental or sale; shown in hotels, on airplanes, in homes or for pay-as-per-view systems; shown on cable, satellite and broadcast television. Further, the development of the videocassette

Stellenbosch University http://scholar.sun.ac.za

gave way to the VCR and this again gave way to the digital video disc, DVD, creating more channels for the original theatre films to be viewed. Cable and satellite technologies have also created new viewing options for people. The rise of the broadband Internet since 2000 has provided yet another place for the provision of entertainment and information to the world (Turow, 2009:473).

- Recordings: Recorded sound developed in the late nineteenth-century and before this most people and families were entertained by listening to artists or themselves, singing or playing musical instruments or performing dramatic plays (Turow, 2009:382) in their homes or other entertainment venues. Recordings are seen as the "capturing" and "playback" side of broadcasting and production of music, word and sound. Technological advances have kept the capturing and transmission of music, sound and word viable and continually improving. Since the early 1900s, transmission devices have changed from vinyl to cassettes, to CDs, to DVDs and now to digital download, played back on iPods and cell phones (Potter, 2011:387). New technologies create new opportunities to reach audiences across the world through recorded material.

- **New media**

- Digital/online electronic media: Worldwide people have rapidly and enthusiastically adopted "new media" sources. These media sources are electronic media formats used to store, transmit and receive digitised information. Researchers in America (Miranda *et al*., 2008:40) report that 113 million adults (80% of Internet users) use the Web to search for health information through new media. These researchers also report that in a special Eurobarometer survey of the media and health communication, more interest was expressed in new scientific discoveries related to medicine, with an indication of 62%, than in politics or sport. Statistics on the use of the Web have clearly defined the prominence of health information as a topic that people search for (Miranda *et al*., 2008:40) through "new media" sources. According to Potter (2011:5) the average person spends more than two hours per day with a computer and computer use is especially high among university students. In the USA, 17.4 million college students spend at least three point five (3.5) hours per day on computer for e-mailing, texting and surfing the Internet. Another seven

Stellenbosch University http://scholar.sun.ac.za

point five (7.5) hours per day, they are engaged with other media such as books, magazines, recordings, radio, film and television (Siebert, 2006 in Potter, 2011:5).

- Internet: A variety of mediums exist through which people can access information online. These include websites, listservs, online support groups, chat rooms, instant messaging, email, etc. (Cotten & Gupta, 2004:1797). The Internet has democratised the media and is increasingly being used by people as a source of not only finding "any" information but especially for finding health information for various purposes. Neuhauser & Kreps (2010:16) report that an estimated 1.6 billion people use the Internet. They report that the global penetration rate was 23.3%. Estimates for North America are 74.4%; Australia, 60.4%; Europe, 48.9%; Latin America, 29.9%; the Middle East, 23.3%; Asia, 18.3% and Africa, 5.6%. The usage rate of the Internet represents a growth of 342% between 2000 and 2008 (Internet World Statistics 2009 in Neuhauser & Kreps, 2010:16). Information provided by the Internet is currently a heavily relied upon source of reference material for the public that transcends existing geographical and regulatory boundaries (Cotten & Gupta, 2004:1796). The Internet however has no centralised controlling body or mechanism (Potter, 2011:399). This media source has become accessible to almost everyone in developed countries across the world. It crosses national boundaries and counteracts isolation. People, who were unable to find health information and also tell their health-related stories within a health communication framework, now have a medium and forum where they can learn and be heard (Baverstock in Schwitzer *et al.*, 2005:0582). People are increasingly using the Internet as a channel for accessing and managing their own personal health (Kummervold *et al*., 2008:48). According to Heuberger and Ivantiskaya (2011:186), young adults cite the Internet as their preferred source for health and nutrition information retrieval and Tian & Robinson (2008:343) report that younger adults seek health information for themselves, acquiring health information incidentally from the Internet.

Research reports indicate that adults' use of the Internet as means to obtain health information has grown over the past years. In 2004 over 55% of Americans with Internet access sought health information online (Walther *et al*.,

Stellenbosch University http://scholar.sun.ac.za

2004 in Ivantiskaya, 2006:2). In 2006, more than 80% searched for health information online (Garcia-Cosavalente *et al*., 2010:38). According to a survey of seven European countries, conducted by the World Health Organisation (WHO), a significant proportion of the population involved in the research was using the Internet for health purposes (Kummervold, *et al*., 2008:45).
According to Dutta-Bergman (2004a:279), the Internet lends itself to goal-directed consumer information searching. The Internet search-engines help to identify a very large number of health-related documents, ranging from medical journals to health Web sites. The health-active consumer can go to the Internet to find specific information on any health topic by typing in the health topic where a search engine can "hit" a wide range of sites on the topic of interest (Dutta-Bergman, 2004a:279). It provides users immediate access to an incredible amount of health-related information that is directed toward both health care professionals and the general public. It is private, immediate, convenient, allows anonymity and provides access to a variety of perspectives on the same topic (Cotten & Gupta, 2004:1797).

Using the Internet for health information gathering involves an active orientation. The user needs to be actively engaged in the process and it is conducive for the health-oriented consumer. The Internet here is used as a primary source of health information and is positively associated with health conscious attitudes, interests and opinions. Dutta-Bergman (2004a:279) states that the archival quality of the Internet is reflected in the vast repository of health information that can be accessed. Smith and Duman (2009:271) also report that gaining knowledge on health issues (the information that people find online) is also influencing the decisions they make, with these people saying that what they learned online (on the Internet) influenced the treatments they chose.

The use of the Internet however calls for advanced competencies that not all information consumers may possess. Ivanitskaya *et al*. (2006:2) points out that the majority of documents found on the Internet have not passed rigorous peer-review procedures. As result of this, health information consumers will be at a greater risk of making health decisions on the basis of non-credible information if they conduct a Google search, as opposed to a search in a scholarly database

Stellenbosch University http://scholar.sun.ac.za

where all the information has been scrutinised and peer-reviewed. Google and Yahoo significantly outperform all scholarly databases available through libraries (Ivanitskaya *et al*., 2006:11). In an example provided by Ivanitskaya *et al*. (2006:11), a Google search for the keyword *health,* produced over eight million results in less than a second in comparison with a similar search on Medline Plus that produced only 665 results.

Young adults are active users of the Internet and frequently search for health-related information through this media source (Castrén, Huttunen & Kunttu, 2008:1473). Most students (investigated in three different studies) indicated that they search frequently for health information online (Percheski & Hargittai, 2011:379). Research conducted by Escoffery, Miner, Adame, Butler, McCormick and Mendell (2005:183), indicate that 79% of student participants reported that the Internet was a prominent health information source. In a survey conducted by the Portland State University in 2008, it is reported that 72% of young adults looked for health information online, 52% looked for information on specific medical treatments or procedures, 49% reached doctors and other health professionals online, 38% looked up information on prescription or over the counter drugs and 34% looked for information on alternative treatments (Gowen, 2011:1). It was also found that young women are more likely to look online for health information than men (Percheski & Hargittai, 2011:379). These findings give support that the Internet may provide a useful source of health information provision and health promoting, and a channel that could be used for health campaigns targeted at the university student population.

Young adults however feel overwhelmed by the amount of health information available online and report not being able to find answers on specific questions or information tailored needs (Gowen, 2011:2). Research conducted by Escoffery *et al*. (2005:184) indicate that although students were likely to search for health information online, many had serious doubts about accuracy of the information. Credibility of health information on the Internet is a concern. Kwan *et al.* (2010a:558) reports only a 17% believability factor for this source of health information provision among its users. Lack of sufficient online health-content

Stellenbosch University http://scholar.sun.ac.za

regulation put consumers at risk of becoming victims of pages that lack peer review (Cotten & Gupta, 2004:1797).

The "Information Age" generation may have inaccurate conceptions that the Internet is the only place where society stores its best knowledge. These Internet users may tend to underestimate the effort and competence required for obtaining trustworthy health information. Research conducted by Eysenbach and Kohler (2002: 573) indicates that online health information seekers seemed to focus on finding information more quickly rather than on evaluating the information found. According to them, most individuals explored only the first few links obtained from a search using a general search-engine. The use of the Web for health information has also been found as an additional media source to complement the use of other sources of information regarding people's health issues (Gray, Klein, Noyce, Sesselberg & Cantrill, 2005:1468).

- New Information and Communication Technologies (ICTs): eHealth is a general term used to cover many disciplines related to information and communication technology in the health domain, received or retrieved electronically/digitally (Neuhauser & Kreps, 2010:14). The WHO (2011:121) defines eHealth as the "cost-effective and secure use of information and communications technologies in support of health and health-related fields, health-care services, health surveillance, health literature and health education, knowledge and research". Garcia-Cosavalente *et al*. (2010:43) encourages governments to focus more on innovative ways of using ICTs in relation to the connectivity for individuals in society seeking health information. Opportunities such as centre-based hotline access, cellular information access and technical assistance programmes, will better allow people to navigate the internet and related sources for health purposes (Garcia-Cosavalente *et al*., 2010:43). Gustafson *et al.* (2003:565) report that one-third of the working population of Sweden work half their working day in front of a computer and that about 80% of the population has access to mobile telephones for information. Gowen (2011:1) reports that 68% of health information seekers replied that the information that they find online through ICTs has had an impact on their healthcare decisions.

Stellenbosch University http://scholar.sun.ac.za

- Virtual worlds: Animated three-dimensional worlds are created by new-age computer graphics. Users of virtual worlds have a computerised character, an avatar, that represents them and manipulate and interact with objects in the virtual world (Smith & Duman, 2009:271). The purpose of virtual worlds is twofold; playing games and creating communities. An example is the *Second Life* community where there is a Health Info Island. Organisations like Diabetes United Kingdom (UK) and the Centre for Disease Control in the USA, use *Second Life* for campaigns and health alerts (Smith & Duman, 2009:271). There is however still much to be learned of this social-virtual networking and how it will affect how people learn about and make health decisions (Neuhauser & Kreps, 2010:22) as well as how virtual reality and personal avatars will help people "experience" health goals and achieve them.

- Social media: Social networking has created the development of new ways to communicate and share information and is all about building communities of people who share common interests and/or activities (Smith & Duman, 2009:271). Web 2.0 sociable technologies and social software are presenting revolutionary new opportunities for health communication via health wikis, blogs, podcasts, gaming and other applications (Kamel & Wheeler, 2007 in Neuhauser & Kreps, 2010:14). Most social network services are based on the Web and provide a variety of ways for users to network, such as e-mail and instant messaging services. Examples are Facebook, MySpace, Twitter, YouTube etc. It is estimated that nearly 500 million people worldwide live their lives, or versions thereof, on Facebook (Fletcher, 2010:14). According to Fletcher, social interaction through the various ICT networks keep people entertained, informed, interacted and connected. Neuhauser and Kreps (2010:16) report that 39% of people in the USA, using e-patient services had used a social networking site for health information provision (Pew Internet and American Life Project, 2009 in Neuhauser & Kreps, 2010:16). A factsheet provided by the Portland State University (Gowen, 2011:1) indicates that an overwhelming majority of young adults use the internet, at a 93% indication and 72% of these online users access social networking on the Web. Van de Vord (2010:1) reports that social networking, emailing, online shopping, listening to music, watching

Stellenbosch University http://scholar.sun.ac.za

YouTube and surfing or browsing the net are some of the more popular online activities for today's college students.

- Blogs: These are online journals or diaries which can be used for sharing information and ideas, including video, pictures and text. Many large health websites have blogs (Smith & Duman, 2009:271). Miranda *et al*. (2008:40) reports that privately owned blogs, giving in narrative form, a person's own experiences and opinions on health related issues are becoming very popular.

- Wikis: A wiki is a type of website that allows users to add, remove or edit all content, very quickly and easily. This ability, of a number of people to edit something, makes Wikis most useful for creating collaborative work. The most famous example is the website Wikipedia (Smith & Duman, 2009:271). In 2009 53% of US "e-patients" had looked at Wikipedia for health information (Neuhauser & Kreps, 2010:16).

Evidence exists that the health status of individuals who use traditional "offline" media sources of health information and people who use "online" information from the Internet differ (Castrén *et al*., 2008:2?). The "online" seekers are more likely to be healthier and happier than those seeking health information elsewhere. However Internet usage among all populations is continuously increasing, but important "digital divides" remain, especially for people who have less education, lower income or who are older than 65 years (Neuhauser & Kreps, 2010:16).

Health professionals, researchers and other staff at universities should remain attentive to the differences among students regarding access to health information. Researchers recommend that campuses provide health information in multiple formats of media to reach targeted groups (Percheski & Hargittai, 2011:379).

- **Media effects**

Media effects are constantly occurring in people's lives as a result of the unfolding experiences with various media sources (Potter, 2011:235). We are informed, educated and entertained through different media sources, and through this, the

Stellenbosch University http://scholar.sun.ac.za

media may have an influence on our thinking and in some instances on our behaviour (Fourie, 2007:264). However, media effects are difficult to recognise as the media are just one component of an infinitely complex chain of causal factors that influence people (O'Shaughnessy & Stadler, 2002:11). Fourie (2007:229), however, states that after exposure to media content over a period of time, the media may have certain cognitive effects on our thinking and behaviour.

It is not always clear that news coverage of research findings in the media can influence health or health policy, but news reporting does influence public opinion (Stamm *et al*., 2003:144). An example can be found in the media coverage of smoking, where the mass media may have slowed public acceptance of smoking's health risks, delayed regulatory action, in spite of all the accumulated evidence indicating that cigarette smoking (passive or active) is associated with increased mortality (Kennedy & Bero, 1999 in Stamm *et al*., 2003:144; Warner, 1998 in Stamm *et al*., 2003:144). According to these researchers (Stamm *et al*., 2003:144), news reports not only inform physicians, patients, colleagues or the public, but they also confer credibility. Research conducted on health information found that articles that appeared in the *New England Journal of Medicine* and that were covered by *The New York Times* received 73% more scientific citations in the *Science Citation Index* than control studies (Philips *et al*., 1991 in Stamm *et al*., 2003:144).

Mass media interventions are relatively effective in addressing the interconnectedness of knowledge, attitudes and behaviour within the health promoting and social marketing sphere (Jepson, Harris, Platt & Tannahill, 2010:13). It therefore remains important to establish how the media influence the way people think, feel and behave in a direct, cumulative and long-term time frame and to try to understand audience responses to media information.

- **The role and responsibilities of the media**

Research has explored general public perceptions of media as health information source as well as the nature and amount of health coverage provided. Less attention however has been devoted to how well the media are meeting health information

Stellenbosch University http://scholar.sun.ac.za

needs and preferences of minority or subpopulations groups (Brodie *et al.*, 1999:148).

Health reporting is a major growth area for the media because it is in demand by the public (Henry & Wilson, 2005:1 in Schwitzer *et al.,* 2005:0578). Literature reveals that viewers are acting on and making personal medical decisions based on health information in the mass media (Baverstock in Schwitzer *et al.*, 2005:0582; Simbra, 2005 in Schwitzer *et al.*, 2005:0580). Surveys have also documented the power of mass media as health information source (Brodie *et al*., 1999:164). Readers, viewers and listeners may make important health care decisions based on the information provided in reports of various media sources and according to Schwitzer *et al*, (2005:0576), the result of any "shoddy journalism" could therefore harm the public.

The approach that some journalists have in reporting health issues may influence the cognition of health facts being reported. Journalists face unique challenges in covering health news. They face constraints, including commercial pressures and deadlines that often give them little time to reflect on stories (Henry & Wilson, 2005 in Schwitzer *et al.*, 2005:0578). Some journalists report that their role and responsibility in covering health information is no different than in covering politics, business or any other topic (Schwitzer *et al*., 2005:0576). They are of opinion that journalists are the messengers and not the message and that it is up to the reader to interpret the message. Scientists and doctors blame journalists for reporting medical information wrongly or incompletely, but then again journalists accuse the medical and scientific community of limiting access to information and erecting barriers to the dissemination of research to the public (Miranda *et al*., 2008:43), complicating and hampering them in their task. Henry and Wilson (in Schwitzer *et al.,* 2005:0578) are of opinion that media coverage of medical news is generally of poor quality, particularly stories about new treatments. Results in an analysis of health reporting in North America and Australia have indicated an average of 52% on a "satisfactory" score using a ten (10) evaluation criteria scale, on the quality of health news reporting (Cassels, Hughes, Cole, Mintzes, Lexchin, 2003 in Schwitzer *et al.,* 2005:0578).

Stellenbosch University http://scholar.sun.ac.za

Many questions can be asked in health reporting. These could include an important one of "have the journalists presented the data in a fashion that is meaningful to health-consumers?" In an age when most clinical trials are sponsored by private companies, questions are raised whether the journalists have asked or informed their readers of the researcher's conflict of interest? Recently *The New York Times* implemented a policy encouraging all reporters to always report conflicts of interest of quoted sources in science stories, a policy that leading science and medical journals have had in place for many years (Goozner, 2005 in Schwitzer *et al.*, 2005:0578). Conflict of interest could also be that the goals and interests of journalism are often in conflict with those of the media industry (Sweet, 2005 in Schwitzer *et al.*, 2005:0580) and in this context Sweet (2005) remarks that it is important to consider the commercial imperative when examining media coverage of health.

According to Simbra (2005), television medical reporters and journalists have a daunting task. They must be accurate, authorative and compassionate and also understand the terminology, physiology, epidemiology, study design and statistical analysis to keep health news in context for the viewer (Simbra, 2005 in Schwitzer *et al.*, 2005:0579). Baverstock suggests that the media play not only an educational role, but also a social role in providing a voice for people to express their experiences of illness, use of medicine and their interactions with technologies that provide health information (Baverstock in Schwitzer *et al.*, 2005:0582).

It is recognised that there are different depths of journalism in all media sources. Health information consumers see room for improvement in the depth, breadth and regularity of media health coverage and look to the media to provide more information on the health issues of greatest personal and community concern (Brodie *et al.*, 1999:164). Therefore it is the role of media in general and news organisations in particular, to provide information to the public, give voice to different viewpoints, facilitate discussions but also avoid advocating solutions to maintain journalistic objectives (Logan, 1998 in Stamm *et al.*, 2003:144).

The media, physicians and health care providers also need to be aware of health consumers'/patients' use of new technologies for health information retrieval, as the

Stellenbosch University http://scholar.sun.ac.za

use thereof will lead to better informed individuals in the future (Kummervold *et al*., 2008:46).

- **Challenges in health reporting**

Difficulties in communications about health arise not so much from research itself as from the gap existing between scientists and health communicators and how this research tends to be interpreted by the lay press, hence the lay public. Information provided by the mass media can sometimes be disputed and be responsible for providing false hopes or unwarranted fears in relation to medical, pharmacological and health related research findings (Miranda *et al*., 2008:39).

Health news sells and reporters are surpassing doctors as a source of medical and related health information. This is according to Simbra (2005), who also states that producers, editors and news directors take advantage of this fact to attract an audience for their newscasts (Simbra, 2005 in Schwitzer *et al.*, 2005:0579). It ensures that medical and health news will be promoted, but in the process it can also be distorted. In a survey conducted by the Texas Health Science Centre in the USA (2003), physicians reported that coverage of medical stories is too sensational. The journalists however did not feel the same (Stamm *et al*., 2003:138). It also revealed that reporters felt certain that they get the technical details of medical reporting correct, but the physicians felt that they do not. According to them physicians and researchers can help journalists write accurate health news, it would be an investment in time, creative energy and skill.

The medical industry churns out volumes of information for medical reporters to quickly sift through every day and because there generally is a lack of special training for medical journalists, this news is often simplified and sensationalised because of industry pressures (Simbra, 2005 in Schwitzer *et al.*, 2005:0579). Responsibility for the quality of medical news lies with the physician, clinician or scientist explaining the research and the journalist who interprets it for the public (Stamm *et al*., 2003:138). According to Henry and Wilson (2005 in Schwitzer *et al.,* 2005:0578) most journalists face two major challenges when reporting health news. Firstly it is the understanding of the clinical science and epidemiology, and,

Stellenbosch University http://scholar.sun.ac.za

secondly being able to deal with the issue of powerful vested interests. These interests are important and journalists have special responsibilities to ensure that they provide balanced information to the readers. It could be helpful if journalists use independent expert sources to answer questions about new treatments, novelty of treatments and the availability and efficacy of alternatives (Henry & Wilson, 2005 in Schwitzer *et al.*, 2005:0578).

Medical reporters and the mass media in general need to take the fact that readers, audiences and viewers look to them to educate and guide them on medical and health issues, very seriously. Health care reporting should be a collaborative process in which both the physician/researcher and the journalist bear responsibility for producing fair and accurate health news stories (Stamm *et al*., 2003:138).

According to Baverstock (2005) research in Australia indicates that the area of health communication seems to be advocating a position of the health journalist to be that of an educator (Baverstock in Schwitzer *et al.*, 2005:0581). In this research, Australia's National Strategy for Quality use of Medicines states the following responsibilities of the media (indicated in Table 2.2 on the following page).

Researchers in the field of health news reporting suggest several strategies and provide recommendations to improve the interactions between researchers, journalists and the media (Stamm *et al*., 2003:138). Through this research, some of the most important recommendations for researchers, physicians and clinicians are:

- *The news release* (constructing the story): A strategy of getting the research findings, news or message to the public, in a well-written news release to health care reporters to spark their interest. Journal articles that have been peer reviewed and scrutinised and are promoted with a news release, have a much greater chance of appearing in the popular media. On a content analysis of newspaper stories and journal press releases, 84% of the referred to articles had been promoted in press releases while only 16% referred to articles were not mentioned in press releases. Journalists welcome press releases about brand-new or even better, about-to-be-reported research, especially if the release comes from an academic centre (Stamm *et al*., 2003:139).

Stellenbosch University http://scholar.sun.ac.za

Table 2.2: Australia's strategy for quality use of medicines: responsibility of the media

Australia's National Strategy for Quality Use of Medicines: Responsibilities of the Media
The media are responsible for the following: • Ethical and responsible reporting on health-care issues • Reporting on medicines accurately and attempting to have errors corrected if they occur • Being aware of the variety of available information sources on medicines and the limitations of each source • Being aware of the impact of media reports on the use of medicines in the community • Being aware of issues relevant to the broad context of medicine use, including risks of medicine use, non-drug alternatives and the cost of medicine use to individual societies • Encouraging dissemination of messages that enhance the quality of medication use

Source: Australian Government Department of Health and Aging (2002). (Schwitzer *et al.*, 2005:0581).

- *Explain data clearly and accurately*: Numerical results of a study or research project will be presented through the media to an audience that is ill prepared to understand numbers. The problems with this numeracy are common and are associated with poor understanding of risk information and quantitative data often found in research projects (Schwartz *et al*., 1997 & Sheridan *et al.*, 2002 in Stamm *et al*., 2003:140). With the problems associated with numeracy, it is important for researchers to communicate their results clearly by using more multiple methods (Stamm *et al*., 2003:140).

- *Interaction with reporters*: Researchers should be accessible to journalists, who more often than not, face deadline pressures and would call another researcher for comment if the original researchers are not available. Plan to be accessible to journalists, e.g. after a news release has been sent; a news conference has been held; an opinion is asked, etc. An effective media liaison

Stellenbosch University http://scholar.sun.ac.za

system could also be effective and save time and effort and will also ensure that the researcher has some time to collect thoughts on a topic. Interview requests via e-mail also benefits the researcher, who can then answer at his/her convenience and through this method is less at risk of being misquoted (Stamm *et al*., 2003:141).

- *Handling sensitive information*: The issue of ethical behaviour must clearly be understood when sensitive or patient information is required by a journalist. A patient's story should only be considered if it would enhance the public understanding of a scientific message. The patient's welfare always comes first (Stamm *et al*., 2003:142).

- *What and how to tell a story*: According to Farberman (1993, in Stamm *et al*., 2003:142), it is advisable for the researcher to think of the interview with a journalist, as a teaching opportunity. Communicate to the reporter in a language he/she will understand. By taking some time to educate the reporter and provide him/her with all the appropriate background material, the researcher makes an investment in more accurate and thorough news coverage (Rubin & Rogers, 1993 in Stamm *et al*., 2003:142). Interviewing is a learned skill. Researchers will also benefit greatly, if they have regular contact with the media, by seeking advice or training in order to better understand a reporter's needs and constraints (Stamm *et al*., 2003:142).

- *Handling embargoes*: An embargo is an agreement which is made by the researcher with a particular publisher when a manuscript is accepted for publication in a peer-reviewed scholarly journal. It usually states that the researcher agrees not to disclose data in a public article until its publication date in the journal. Embargoes do not apply to researchers presenting a paper at scientific meetings, conferences or other government hearings. When a researcher is approached after such an event, discussion of research findings is allowed, but it is advisable to limit these comments only to the information presented at the specific event (Stamm *et al*., 2003:142). An embargo also refers to an agreement that scientific journals have with journalists and where the journal will release an advance copy about a manuscript to the news media with an understanding that the media will defer coverage until final publication.

Stellenbosch University http://scholar.sun.ac.za

In the meantime authors are encouraged to talk with reporters (Stamm *et al*., 2003:143). Authors are advised to first secure a reporter's promise to honour the embargo. The *Ingelfinger Rule,* is also an embargo and is an agreement between authors and journals (Altman, 1996 in Stamm *et al*., 2003:143), where the journal considers the paper for publication only on condition that its substance is not submitted or reported elsewhere. It further prohibits publicity about unpublished reports from the time of submission to the time between the printing of the journal and its date of publication. Through this process, it is believed, that a more organised dissemination of important technical information through the public press will lead to better quality news coverage. This type of embargo period allows journalists/reporters time to analyse and report on the complex stories behind the data. Reporters who violate a journal's embargo can be excluded from future embargoed information (Stamm *et al*., 2003:143).

Lack of time, space and knowledge; the speed of technology; and the information overload are just some of the obstacles in the way of brief, simple news reporting (Miranda *et al.*, 2008:43). The mass media do play a central role in people's lives. The need to bridge the gap between science and medicine and the lay public is much felt and is shared by private and public participants – academics, scientists, governments, health communicators, and lay people. All want to see a new way of providing information that avoids hype, noise and sensationalism (Miranda *et al*., 2008:43). According to these researchers, there should always be balanced, scientifically correct and clinically relevant news items published that would observe the rules of science, while at the same time fulfilling the basic needs of journalism and service to target audiences.

One of the areas of health communication needing empirical research involves the sources consumers visit to access health information (Dutta-Bergman, 2004a:274). Implications for planning media use, in satisfying the health seeking consumer, remain an important issue. News reports and specialist articles are often the first way that most people learn about health issues and developments in medicine.

Stellenbosch University http://scholar.sun.ac.za

- **Health campaigns**

Mass media campaigns have long been a tool for promoting public health (Noar, 2006:21). The mass media health campaign is known as a compelling health communication intervention tool that potentially can address health attitude and behavioural change across numerous health problems and in numerous audiences (Noar, 2006:22). Brown and Witherspoon (2002:163) argue that all communication, the messages in health campaigns, no matter through what medium they travel, must resonate with the target audience. To be successful a public media campaign (e.g. targeting a young adult or student population) should: (a) focus primarily on early stages of building awareness, guiding information seeking and knowledge; (b) compliment the community, policy or individual-level activities over the long-term and (c) be based on sound research with evaluation procedures built into the process.

Snyder and Hamilton (2002:358) presented results of a meta-analysed systematic sample of 48 health campaigns in the USA and reported an eight percent (8%) behavioural change of the population in the expected positive direction. Greater effects were found for campaigns focussed on adoption of new behaviours compared with prevention or cessation of problem behaviours and also in campaigns with greater exposure through the media. In this research health campaigns with certain intervention characteristics such as supplementing media messages with other campaign components were found to have stronger effects than those without such characteristics.

According to Noar (2006:22), health campaigns are in an era of *conditional effects*, where the principles of previous campaigns have been implemented in campaign design to increase health mass media campaign successes. Mass media health campaigns can be effective on condition that principles of campaign design (from the past ten years) are attended to. These principles are: to conduct formative research with a target audience; use theory as a conceptual foundation; segment the audience into meaningful subgroups; use a message design approach that is targeted to the audience segment; place messages in media channels most widely used by the target audience and strategically position the campaign messages; conduct process evaluation and use a sensitive outcome evaluation design that reduces threats to

Stellenbosch University http://scholar.sun.ac.za

internal validity (Noar, 2006:25). Atkin and Freimuth (2001) and Valente (2001) states that formative research is important to the design and implementation of such mass media health campaigns. This type of research enables campaigners to truly understand their target audience in terms of the problem/issue at hand, their message preferences and the most promising media channels through which they can be reached (Atkin & Freimuth, 2001 & Valente, 2001 in Noar, 2006:24).

Research evidence suggests that targeted, well-executed health mass media campaigns can have small-to-moderate effects not only on health knowledge, beliefs and attitudes but on behaviours as well (Bertrand & Anhang, 2006:205; Noar, 2006:36). The mass media are capable of reaching thousands of students and can have an impact on health issues and lifestyle practices among young adults, making it a worthy venture.

- **Applications of health communication**

Health communication messages are essential for promoting behaviour change among individuals and groups. If successfully produced, they can increase knowledge and awareness of a health problem, influence perceptions which may lead to behaviour change, increase demand for health services and inform decision making (Heggen *et al*., 2009:46; Neuhauser & Kreps, 2010:9).

Access to health news and information is believed to be critical to the advancement of public health and the elimination of disparities in health access and its outcomes (Brodie *et al*., 1999:148). In this context audience segmentation (targeted population groups) is very important and allows for the creation of health messages that are designed for reaching those specific groups of individuals. It ultimately makes the messages more relevant and provides the basis for selection of media, community, organisational or interpersonal channels most appropriate for reaching the targeted populations (Heggen *et al*., 2009:46). Preference for and access to media sources must also be considered in order to effectively segment audiences when identifying the purpose and content of health messages. Identification of the most appropriate channels of communication, based on availability, level of education and geographical location of population sub-groups will have an effect on

Stellenbosch University http://scholar.sun.ac.za

the successes of health information provision. Health information provision is being recognised as a tool for engaging patients, of improving adherence to treatments and facilitating informed choice among people (Smith & Duman, 2009:261).

In the past, limited access to information may have prevented health information consumers from acquiring knowledge and making informed choices about their health. Technology is giving people the opportunity to find and give feedback on health information, health services, share experiences of living with long-term conditions and in some cases, to build a collective wisdom that can add significantly to medical opinion about areas such as the side-effects of medicines and rare conditions they are experiencing (Smith & Duman, 2009:271). The significant growth of the Web and Internet use across the world has changed the landscape of health information available and has the potential to reduce health inequalities (Percheski & Hargittai, 2011:379). The availability of health information online may reduce inequalities in health information, by providing access to information that was previously available only through medical professionals and medical commercial organisations.

Individuals with limited health information competencies may fail to locate, judge and use available health information and then engage in information processing that is superficial and without substance. Health information competencies are applied to transform health-related information into knowledge that is consistent with the most current research on health issues and medical practice. High competence variability is a proxy indicator of young adults' (students') varying ability to make evidence-based decisions about their health (Ivantiskaya *et al*., 2006:11). According to these researchers, access to information and obtaining information is the first step of knowledge acquisition and should not be confused with knowledge generation from this information. An underutilised source, such as librarians, could serve people by playing a more active role in becoming a bridge between scientific and medical research and the mass media as well as assist in disseminating information and translating evidence to the public (Miranda, *et al*., 2008:45). As new technological advances influence most societies across the world, it is being noted that health-information consumers are using new media as an active communication channel, both for reaching health professionals and for communicating with peers

Stellenbosch University http://scholar.sun.ac.za

(Kummervold *et al*., 2008:44). This media source promises more connectedness across media and information-provision boundaries.

However, the less than expected results from health communication interventions across the world to promote healthy lifestyles, have resulted in an effort to identify new strategies for effective health promotion. Neuhauser & Kreps (2010:10) suggest the following strategies for improving health communication efforts:

- Strengthening the theoretical foundation of health behaviour models that guide health communication interventions;
- Creating communication that is more personalised and contextual;
- Enhancing the interactivity of communication, and
- Designing communication to have the reach of mass media and the impact of interpersonal connections.

The media landscape across the world continues to evolve. Ongoing research targeting topics and issues of health information-seeking, health information-provision and identifying health needs of populations will continue to be important areas for investigation within the health communication sphere.

2.4 CONCLUSION

Even when young adults (students) appear to be knowledgeable about their health and health services on campus, awareness does not always relate into use. Implications of the wellbeing of young adults, especially first year students, and the effect it could have on successfully completing their university course is worthy of investigation. Researchers have some responsibility to explore and identify how population sub-groups are able to access and effectively use various communication channels (non-media and media) to obtain information about health issues and lifestyle management and encourage behaviour change.

Tuition costs continue to rise and students are currently still confronted with extremely demanding schedules and responsibilities. Therefore the need to address the health and lifestyle needs of this population sub-group remains important. These health and

Stellenbosch University http://scholar.sun.ac.za

lifestyle issues could be identified and resources made available to assist students in coping with these concerns. Research suggests that health problems may influence student attrition from year to year (Fletcher *et al*., 2007:483) and health issues together with health-related costs can have a major impact on the quality of student and academic life at institutions of higher education (ACHA-NCHA, 2008:i).

The lack of information about the health status of students and resources available to assist students to effectively manage their health and lifestyle is the focus of this research. A thorough needs assessment of the health and lifestyle issues among young adults (first-year students) on a university campus will be done as well as establishing the role of the various sources of information, as tools for knowledge acquisition and as possible intervention tools, in this process.

In order to develop effective health promotion interventions, researchers and practitioners can draw upon a knowledge-mobilisation perspective that emphasises the ability to identify believable messengers and effective methods (channels) for conveying health messages (Kwan *et al*., 2010a:555). Fourie (2007:229) suggests that after exposure to content (health content) provided by the media, over a period of time, may have certain cognitive effects on the thinking and behaviour of people. Healthy lifestyles are a worthy investment, not only for the quality of life for the individual but also for institutions such as universities and colleges (Fletcher *et al*., 2007:482). Behavioural and social interventions offer great promise to reduce disease morbidity and mortality, but as yet their potential to improve the public's health has been relatively poor (Neuhauser & Kreps, 2010:10). Health-services utilising various media sources for health communication and intervention tools, could effectively assist in managing young adult's health and lifestyle choices and improve overall campus health behaviour.

Stellenbosch University http://scholar.sun.ac.za

CHAPTER 3

RESEARCH METHODS AND PROCEDURES

3.1 INTRODUCTION

Young adults grow up in a world saturated with mass media. The mass media often provide a window on a larger world outside the family, friends, educational facilities and current world experiences. In this regard Brown and Witherspoon (2002:155) report that teens and young adults are active users of media and bring with them a set of experiences and motivations that will determine the media they will use, those which they will choose to learn from, and how it will be incorporated in their lives. Also, young adults have a specific identity, a sense of self, which will affect their choices and actions in life. This may affect their motivation for using media and which media source they will select (Brown & Witherspoon, 2002:155). This particular motivation may also influence cognition of facts and the attention given to the content of information, as well as how they will interact with the information. Brown and Witherspoon (2002:155) are of opinion that the media choices this group makes, and its effects, will be conditional for the young adult depending on "who" the individual is at a certain age, the level of physical and psychological maturity of the person, general life-stage interest and the socio-economic status of the person.

The mass media are increasingly important in shaping a range of health beliefs and behaviours (Hay, Coups, Ford, & DiBonaventura, 2009:783) and the availability of health information online may also have reduced inequalities in information by providing access to health information previously only available through healthcare professionals (Percheski & Hargittai, 2011:379). Little however is known about how the use of different media sources may affect the young adults' health and the decisions they make about health choices and lifestyle issues.

University students are an important target population for health promotion efforts and researchers suggest that their health is an important and neglected public health problem (Fletcher *et al*., 2007:482; Kwan *et al*., 2010a:555; Rushing & Stephens,

Stellenbosch University http://scholar.sun.ac.za

2011:135). Research in all areas of student health has further significance for institutions of higher education, as the health status of students (young adults) may also influence student attrition, particularly in the case of first-year students (Fletcher *et al*., 2007:482; ACHA-NCHA, 2009:478). A review of literature confirms that information concerning the health needs and health problems of young adults are still inadequate (Fletcher *et al*., 2007:482; ACHA-NCHA, 2009:478; Percheski & Hargittai, 2011:379), and despite interest in health information dissemination, there has been little empirical research that addresses where students receive their health information and to what extent media technologies are used for health information-seeking (Rushing & Stephens, 2011:135; Vader *et al*., 2011:2).

This study aimed to investigate what the media sources were that young adults' used in their quest to search for and provide them with health and lifestyle information during their late adolescence and young adult life-phase. The sources of information-provision included personal, professional and various media technology use. The reason(s) for searching and obtaining health information was also of great importance as this 'drive" to find information could be valued as the motivating factor for the use of different information sources. Additional aims of the research were to establish what the primary health topics were that these young adults needed health information on, whether this health information-seeking changed their health behaviour, as well as how credible this group deemed the information from the different media sources they used. An indication of how the research cohort perceived the quality of this information was also important. It was also important to establish what the general health status of this group of young adults were as well as the prevalence of some lifestyle factors such as exercise regularity, recreational behaviour and eating habits. Selected health risk-behaviours that could influence the health of these young adults such as smoking habit, alcohol use and the use of recreational drugs were also relevant factors that were included in the survey to establish demographics. Grouped with this information, the survey finally tried to establish what the "on campus" communication needs of the group were as well as what the assistance this group would like to receive through the university authorities to enable them to improve the management of their health and lifestyle.

First-year, first-time registered students on both the SU campuses (Stellenbosch and Tygerberg) were chosen as research subjects for this study.

Stellenbosch University http://scholar.sun.ac.za

3.2 STUDY DESIGN

This study can be described as an exploratory survey research, using quantitative and qualitative research methods in order to establish, explore and describe the primary and secondary research questions. A cross-sectional survey of the contribution of various health information sources in knowledge development of health and lifestyle issues among young adults at Stellenbosch University (SU) was undertaken. The study was planned to obtain original data on the interrelationships among selected variables such as media source use (media types, frequency, quality and credibility) and demographics, health status and health information-seeking needs, health risk-behaviour and health information-seeking practices.

An online survey method (computerised self-administered questionnaire) (CSAQ), with templates and logistics (Checkbox®, version 4.7), developed by the SU, was used as tool for the survey. This CSAQ method provided an opportunity to reach as many of the research population as possible. The survey was distributed via this campus survey format. Permission to use student numbers as e-mail connection was granted by the director of SU Institutional Research and released by the SU Administrative Student Record section. An electronic link in the introductory e-mail message that the researcher provided, transported participants to the online survey site hosted by the SU (*SUrveys*.sun.ac.za). All registered students at the SU have access to the Internet. This Internet access is available in most of the SU residences, computer laboratories, including wireless access in study areas, cafeterias and in academic buildings across campus and also within the main SU libraries on both campuses. It was purposed that this method of an online survey would be the most convenient and accessible, least expensive and least time-consuming for the research population, and also ensure the highest possible response rate for the survey.

The research question and objectives, testing environment, research population, measurement procedure, survey instrument (questionnaire) used to capture the research data, and the method of data capturing and analysis will now be discussed.

Stellenbosch University http://scholar.sun.ac.za

3.2.1 Research objective

A research theory was formulated that the choice of media source for obtaining health information among young adults on the SU campus, would be influenced or shaped by demographics, health status, gender, ethnicity and accessibility to various health information sources (especially media sources), with a focus on the Internet. The research questions to be answered by data from this study was:

"What role the provision of information through various health information sources (non-media and media), played in informing and developing the knowledge of young adults (students) about health issues and lifestyle management?"

"Did health information-seeking on their selected health topics change their behaviour?"

The overall objectives were:

- To broadly determine the health status of this group of young adults.
- To establish what the health information-sources were which they used during the past year.
- Whether this information was credible to them.
- How they deemed the quality of these information sources.
- Whether it contributed to their knowledge on health.
- Did it influenced their health decisions, and changed their health behaviour.
- What the health communication use, preference and needs of the students on the university campus were.

This research has tried to establish and identify health seeking patterns and preferences, the most appropriate technologies and intervention strategies, among young adults, that might influence the implementation of future health behaviour change strategies in a university setting.

Stellenbosch University http://scholar.sun.ac.za

3.2.2 Research and testing environment

The entire study was conducted at Stellenbosch University (SU), an urban public research university in the Western Cape, South Africa. Figure 3.1 on the following page, presents a view of the Stellenbosch University campus.

Figure 3.1: The Stellenbosch University campus.

3.2.3 Research population

The target population for this research study consisted of young adults, first-year, first- time registered students, on the Stellenbosch and Tygerberg campus of the SU. Participation in the research was voluntary. The study population consisted of 4 305 (N=4305) participants. Incomplete information on the research questionnaire excluded two participants from the study population.

3.2.4 Measurement procedure

Permission to conduct the research was given by the Department of Journalism at the SU, after submitting the requested academic research proposal for the MPhil Journalism programme at the university. After conducting a thorough literature review on the research topic, an original paper-based survey questionnaire was developed by the researcher for the purpose of the study. The research proposal as well as the research instrument (questionnaire) was submitted to the SU Research Ethics Committee (REC): Human Research

Stellenbosch University http://scholar.sun.ac.za

(Humanoria), along with the official SU application form required for institutional research conducted on the campus of the SU. This research application was put to the SU REC Review Committee for scrutiny and approval according to the required protocol. The ethical approval document number received from the SU REC to conduct the research is protocol HS585/2011 (see Appendix A). The new research study was approved with certain administrative stipulations to be attended to by the researcher. Although no risk was involved for research participants, the inclusion of an official informed consent message, at the beginning of the electronic questionnaire, was requested by the SU REC Review Committee. After this procedure was completed, another letter was requested from the office of the SU Institutional Research Centre to enable the researcher to obtain permission for the research to be undertaken on the SU campus, using registered students of the SU as research population. This letter together with the SU REC letter of approval provided permission for the release of the student numbers and e-mail particulars of the targeted research population. These numbers were released by the SU Administration (student-records) of the SU, to the Information Technology section of the SU in order to distribute the electronic questionnaire via the "*SUrvey*-server" for the official research survey. The targeted research population had 10 days to complete the survey questionnaire and return the response via the "*SUrvey*-system" to the researcher.

The survey method as well as the questionnaire was initiated and designed by researcher at the SU, drawing ideas from several existing questionnaires that have been validated in other settings for similar research topics (Fox & Rainie, 2008; NCI – National Cancer Institute, 2009; Reinfeld-Kirkman *et al*., 2010; Weaver, Mays, Weaver, Hopkins, Eroğlu & Bernhardt, 2010; Beaudoin & Hong, 2011; Ek & Heinström, 2011; Rushing & Stephens, 2011). The research questionnaire was initially developed on paper, in both the official tuition languages at the SU (Afrikaans and English) to suit the needs of the primary and secondary research questions. Drafts of the paper-based survey questionnaire were sent to eight academic experts (in academic research fields related to the research subject), selected from various Departments and Faculties at the SU (see letter, Appendix B and list of expert names in Appendix C) to review the content and language and also ensure that the research objectives and intent were

Stellenbosch University http://scholar.sun.ac.za

reflected in the research questionnaire. This group of experts were invited to add any suggestions they deemed important to the research. All corrections, suggestions and content recommendations received from this group were reviewed and where deemed applicable, applied to adapt the initial designed paper-based questionnaire. Valuable feedback and comments were received from this group of experts.

Following this process, the adapted and improved paper-based research questionnaire was formatted in an electronic survey questionnaire version (see Appendix D), using the software package, Checkbox® version 4.7: Web Survey Software, provided by the Information Technology (IT) section of the SU, for official institutional research purposes. This final electronic survey format in both the SU tuition languages (Afrikaans and English), was pilot-tested with young adults from the SU (N=24), who spoke both the official tuition languages. The response rate for this pilot-test of the questionnaire was 27%. Valuable information on the time frame for completing the survey, as well as on the clarity and comprehension of the content was received from this group.

The survey was completely anonymous and posed no risk to the research population. Informed consent was achieved by having the researcher introduce the survey's purpose as well as include a statement on the use of information for research purposes only. Hereafter the targeted research population could indicate to participate voluntarily in the survey which allowed them access to the survey website. Assent was assumed for those who completed and returned the survey.

3.2.5 Research instrument: Survey questionnaire

The structured self-report content of the electronic web-based research questionnaire contained eight sections in the following order:

(a) Introductory message, instructions regarding the survey and informed consent.

Stellenbosch University http://scholar.sun.ac.za

(b) E-mail particulars for participants who wanted to be included in a "Lucky-draw" for a prize that was offered as an incentive in order to encourage participation.

(c) Section A: Demographic and personal information.

(d) Section B: Health status.

(e) Section C: Lifestyle and health-risk factors.

(f) Section D: Sources of health information-provision (non-media).

(g) Section E: Sources of health information-provision (media).

(h) Section F: Health information needs.

(i) Section G: Closure message.

In section D and E, the research participants were asked to indicate from whom and through which source, during the past 12 months, they asked or received the most information on health and lifestyle issues.

The types of questions included in the survey questionnaire were: Likert rating-scales; open-ended single line answers; radio-buttons for a single answer indication; open-ended multi-line answers; contingency questions (certain questions were relevant to some respondents and irrelevant to others and answers were contingent to responses to a specific question in a series); closed-ended questions (respondents were asked to select an answer from among a list provided); matrix questions (comprised of several questions that have the same set of answer categories and to be checked off).

All the information required from the research population was self-reported. Health and lifestyle choices in whole populations and in sub-groups are typically assessed using structured self-report interviews or surveys (Leslie *et al.*, 2001:118). The research population was asked to complete all questions as truthfully and accurately as possible.

The detailed content of the electronic survey questionnaire is provided in the following section and presented in the eight different sections.

3.2.5.1 Introductory message, informed consent and e-mail particulars:

This first section of the questionnaire included an introduction to the research as well as a request for an e-mail detail if the respondent wanted to be included in the "Lucky-draw" for a prize. This prize was offered as an incentive to improve the response rate. Feedback from previous electronic surveys, as well as responses from the Pilot-study, revealed that students at the SU were not fond of completing/participating in institutional surveys. Figure 3.2 on the following page presents the detailed content of the introductory message of the research questionnaire and figure 3.3, the content of the informed consent section.

Department of Journalism: Stellenbosch University
Survey: Health communication

Win a new "iPod-Touch" (8gb) (worth R2000) by completing this survey within the next 4 days!

INSTRUCTIONS:
- The questions in this survey are concerned with aspects of your **health** and **lifestyle**.
- The purpose of the survey is to establish how **information provided through the media** contributed to your knowledge regarding your health and lifestyle.
- Answer all questions as **honestly** and **completely** as possible.
- Provide one answer per question unless otherwise indicated at the particular question.

Thank you for your time to complete this survey.
We appreciate your participation!

Figure 3.2: Introductory message to research questionnaire.

- **Agreement and informed consent**

I hereby agree that all information in this survey may be used for research purposes.

❍ Yes ❍ No

Email particulars: Voluntary and enabled participants to win a participatory incentive prize.

- Email address (if you want to participate in the lucky draw to win a new iPod-touch!) ✐

Figure 3.3: Agreement and informed consent of research questionnaire.

3.2.5.2 Section A: Demographic information:

This section of the research questionnaire requested some personal information in order to establish a profile of the targeted research cohort and included information on: age; SU academic course enrolment; home town and area of residence; school of matriculation; home language; gender; ethnicity; current residence while enrolled as a SU student; body height (meters) and body weight (kilograms) (self-reported height and weight were used to calculate BMI kg/m² by a standard formula). Figure 3.4 below, and figure 3.5 on the following page, provides the detail of the demographic content of the electronic questionnaire.

- **SECTION A: Demographic Information**

Please provide some personal information in the following questions for statistical purposes.

- How old are you (age in years)? ✐

- What academic course at the Stellenbosch University (SU) have you enrolled for? ✐

- Where do you live? Home town or city? ✐

- In what region/province is your home town/city? ✐

- At what school did you matriculate?
(provide name of the school) ✐

- What is your home language? ✓

☐ Afrikaans ☐ English ☐ Zulu ☐ Sotho

☐ Xhosa ☐ German ☐ French

If "other" please specify: ✐

Figure 3.4: Research questionnaire: Demographic information.

- Gender? ✓

☐ Male ☐ Female

- Ethnicity: Race?
(for statistical purposes only) ✎

- Current residence? ✓

☐ Parents

☐ SU student house

☐ Private student house

☐ Private student flat

Other, please specify: ✎

- How tall are you? (body length in meters?)

(please report as accurately as possible only providing numbers, e.g. 1.76) ✎
(do not add *m* after the numbers)

- What is your current body weight? (how much do you weigh in kilograms?) ✎

(please report as accurately as possible only providing numbers, e.g. 62)
(do not add *kg* after the numbers)

Figure 3.5: Research questionnaire: Demographic information (continued).

3.2.5.3 Section B: Health status:

A total of 10 questions assessed the health status of the research cohort. These included: a Likert-scale indication of health status; indication of current health regarding any medical condition experienced; medication used for the indicated medical condition; medication specification for the condition; an indication of anxiety or stress experienced; indication of reason for stress or anxiety; treatment for the anxiety or stress experienced; type of medication or treatment for stress and anxiety; an indication of assistance received from the SU for the treatment of this anxiety and stress; place or centre where SU treatment is received.

The detail of this section of the research questionnaire is provided in figures 3.6 and 3.7 on the following page.

- **SECTION B: Health status**

- Current Health Status
How would you describe your health status at the moment? ✓

☐ Excellent ☐ Reasonable ☐ Good

☐ Very Good ☐ Bad ☐ Very Bad

- Do you suffer from any of the following health conditions?
Indicate where applicable: ✓

☐ Asthma ☐ Cardiac problems ☐ Metabolic (digestive problems)

☐ Back (lower back) problems ☐ High cholesterol ☐ Recreational drug problems

☐ Diabetes ☐ High blood pressure ☐ Sinus problems

☐ Over weight ☐ Low blood pressure ☐ STD's (sexual transmitted disease)

☐ Under weight ☐ Musculo-skeletal problems ☐ HIV/AIDS?

☐ Stress/anxiety ☐ Hearing (ear) problems ☐ None

☐ Vision (eye) problems ☐ Neurological (nervous system) problems

Other, please specify: ✎

- Do you use any medication? ✓
❍ Yes ❍ No

- For what health condition(s) do you use medication?
Name condition: ✎

- What medication do you use for the above mentioned health conditions?
Name of type of medication: ✎

- Do you currently experience any anxiety or stress? ✓
❍ Yes ❍ No

Figure 3.6: Research questionnaire: Health status of the research cohort.

- In your opinion, what causes this anxiety and stress?

Indicate where applicable: ✓

☐ Academic pressure ☐ Financial pressure

☐ Time management ☐ Accommodation problems

☐ Health problems ☐ Family problems

☐ Personal problems ☐ Transport problems

☐ Adaptation to SU life - problems

Other, please specify: ✐

- Do you receive any treatment or medication for the anxiety and stress? ✓

❍ Yes ❍ No

- What type of treatment/medication do you receive/use to manage this anxiety and stress?

Indicate where applicable: ✓

☐ Psychotherapy ☐ Medication

☐ Private consultation with a healthcare professional

Other, please specify: ✐

- Do you receive treatment or assistance from the SU for your anxiety and/or stress problems? ✓

❍ Yes ❍ No

- At what centre or where on the SU campus do you receive this treatment?

Name place or centre: ✐

Figure 3.7: Research questionnaire: Health status of research cohort (continued).

3.2.5.3 Section C: Lifestyle factors:

Three lifestyle factors of the study cohort were assessed. These were: exercise regularity; recreational behaviour; and meal consumption. The purpose of the inclusion of these three lifestyle indicators was to provide information as co-

variates of a balanced lifestyle and health orientation (detailed information for these three variables were not indulged in as the information provided here was adequate for a lifestyle indication). See figure 3.8 below for the detail on the content for these questions.

- **SECTION C: Lifestyle and health-risk factors**

Please provide us with brief information on your lifestyle in the following questions.

- Exercise: Do you exercise regularly?
(indicate whether you exercise at least 3x per week, for 30min or longer, uninterrupted) ✓

❍ Yes ❍ No

- Recreation: Do you spend time to relax regularly?
(indicate whether you relax for at least 60min per day) ✓

❍ Yes ❍ No

- Eating habits: Do you at least eat three nutritious meals a day? ✓

❍ Yes ❍ No

Figure 3.8: Research questionnaire: Lifestyle indicators of the research cohort.

3.2.5.4 Section C (continued): Health-risk factors:

This section also included three health-risk factors that were assessed. These questions were: smoking habit; alcohol use; and recreational drug use. Health-risk factors are important to establish to provide a background for a lifestyle profile. Figure 3.9 below and figure 3.10 on the following page, provides the detailed content of the questionnaire.

- Tobacco use: Do you currently smoke cigarettes? ✓
❍ Yes ❍ No

- How many cigarettes do you smoke a day?
(indicate number of cigarettes per day) ✐

Figure 3.9: Research questionnaire: Health-risk factors of the research cohort.

- Alcohol use: Do you currently use alcoholic beverages? ✓

❍ Yes ❍ No

- How often do you use/drink alcohol? ✓

☐ Every day ☐ Once a week ☐ Twice a week

Other, please specify: ✎

- Drug use: Do you currently use any recreational drugs? ✓

❍ Yes ❍ No

- How often do you use recreational drugs? ✓

☐ Once a day

☐ Once a week

☐ Twice a week

Other, please specify: ✎

Figure 3.10: Research questionnaire: Health-risk factors of the research cohort (continued).

3.2.5.5 Section D: Sources of health information-provision (non-media):

The focus for this research was in establishing the sources of health information-provision among young adults on a university campus. Although the primary research aim was to establish the contribution of media as health information source, it was also deemed important to find out what other sources these young adults used for health information.

This first section on health information sources (non-media) included questions on the following variables (the research participants were asked to indicate use of these information sources during the past year): an indication of health information-seeking during the last year; the primary reason why health information was needed; the primary type/category of health information most often looked for; an indication of a health behaviour change after this health information-seeking act; health information most often provided/found within

the home/family environment; the school as health information source; information provided/found among friends or peers; health information provided by or found within a professional healthcare environment; and the use of health information provided within the SU environment. Figure 3.11 below and figures 3.12 and 3.13 on the following pages, provide the detailed content of this section of the questionnaire.

- **SECTION D: Sources of health information-provision (non-media).**

Please provide us briefly with information on the sources/ways through which you have obtained information on health and lifestyle issues during the past year.

- **Have you asked/looked for health information during the last year?** ✓

❍ Yes ❍ No

- **What was the primary reason why you asked/looked for health information during the past year?** ✓

☐ Manage health ☐ Info on disease prevention

☐ Diagnose health problem ☐ For general health knowledge

☐ Identify symptoms of health condition ☐ For wellness info

☐ For health and wellness info

Other, please specify: ✎

- **What was the primary type of health information that you asked about or looked for during the past year?**

☐ General health info ☐ Lifestyle management

☐ Fitness ☐ Specific health condition info

☐ Nutrition ☐ Diet/weight loss

☐ Recreation ☐ Stress management

Other, please specify: ✎

Figure 3.11: Research questionnaire: Health information sources (non-media).

- After seeking health information and finding this information, did your health behaviour change? ✓

❍ Yes ❍ No

- Health information source: Home/family

From whom did you most often learn something about health during the past year? ✓

☐ Mother ☐ Father ☐ Guardian

☐ Grandmother ☐ Grandfather ☐ Aunt

☐ Brother ☐ Sister ☐ Uncle

Other, please specify: ✐

- Health information source: School

From whom or where did you most often receive information on health during the last year at school? ✓

☐ In class? ☐ Specific teacher?

☐ Specific subject? ☐ Guest speaker at school?

Other, please specify: ✐

- Health information source: Friends/Peers

From which friend did you most often obtain health information during the past year? ✓

☐ Personal friend: Female ☐ Personal friend: Male

☐ Friend at work

Other, please specify: ✐

- Health information source: Healthcare professional

Who did you most often consult to provide you with information on health? ✓

☐ General practitioner: Private docter ☐ Biokineticist

☐ Doctor: Specialist ☐ Nurse

☐ Physiotherapist

Other, please specify: ✐

Figure 3.12: Research questionnaire: Health information sources (non-media) (continued).

Stellenbosch University http://scholar.sun.ac.za

- Health information source: Stellenbosch University

From whom or where did you most often obtain information on health at the SU during the past year? ✓

- ☐ In class
- ☐ Specific lecturer
- ☐ Student Health Services
- ☐ Gymnasium: Instructor
- ☐ Sport coach
- ☐ SU Library
- ☐ SU Intranet health information

Other, please specify: ✐

Figure 3.13: Research questionnaire: Health information sources (non-media) (continued).

3.2.5.6 Section E: Sources of health information-provision (media):

Recent research indicates that "health" is one of the main topics covered in the media today (Carducci *et al*., 2011:475). It was therefore important to establish what media young adults used or accessed for health information-provision. This was the primary question to be answered by this research as well as the reporting of the frequency statistics of these variables for students on a South African university campus. This section of the research questionnaire included the following questions (research participants were asked to indicate the use of a media source during the past year): a general indication of media type/source used to obtain health information; a multi-structured question to establish more specific information on the printed media (magazines) as health information source; an indication of using the health information provided in the Medical Aid Fund magazine of students' parents; provision of the name of the particular Medical Aid Fund used by students' parents; a multi-structured question to establish the use of health information provided in the printed media (newspapers); a multi-structured question to establish the use of health information provided by the broadcasting media (radio); a multi-structured question to establish the use of health information provided in the broadcasting media (television); a multi-structured question to establish the use of the Internet as source of health information provision; a multi structured question to establish

the use of cell phones as device to access the Internet for health information; an indication of any other media sources used for obtaining health information; and an indication of any other non-media sources used for health information, not indicated in any of the previous questions. See figure 3.14 below, and figures 3.15 and 3.16 on the following pages, for the detailed content of this section of the electronic questionnaire.

• **SECTION E: Sources of health information-provision (media).**

Please provide us briefly with information about the <u>media sources</u> you used to <u>obtain health information</u> during the last year.

- Which media sources do you use to obtain health information? ✓

☐ Magazines ☐ Internet

☐ Newspaper ☐ Internet via cell phone

☐ Radio ☐ Books

☐ Television ☐ None

Other, please specify: ✐

- Health information source - Printed Media: Magazine(s)

Which magazines do you read most often? ✓

Name of the magazine?	How regularly do you read this magazine?		Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information in this magazine?	Do you read the paper copy of this magazine or the Internet online version?
✓ Most often read:	✓ Every day		❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor	❍ Paper copy
✓ 2nd most often read:	✓ Every week		❍ No		❍ Internet copy
	✓ Every month				

- Have you ever obtained health information through your parent's Medical Aid Fund magazine? ✓

❍ Yes ❍ No

- Which Medical Aid Fund magazine did you read? ✐

(name of the Medical Aid)

Figure 3.14: Research questionnaire: Health information sources (media).

- Health information source - Printed Media: Newspapers

Which newspaper do you read most often? ✓

Name of the newspaper?	How regularly do you read this newspaper?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information in this newspaper?	Do you read the paper copy of this newspaper or the Internet online version?
✓ Most often read:	✓ Every day	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor	❍ Paper copy
✓ 2nd most often read:	✓ Every week	❍ No		❍ Internet copy
	✓ Every month			

- Health information source – Radio

What radio station do you most often listen to? ✓

Name of the Radio station?	How regularly do you listen to this radio station?	Do you use this radio station for health information?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information on this radio station?
✓ Most often listened to:	✓ Every day	❍ Yes	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ 2nd most often listened to:	✓ Every week	❍ No	❍ No	
	✓ Every month			

- Health information source - Television:

Which TV channels and programmes do you most often use or look at? ✓

TV channel name? (e.g. DSTV 101; TV 2 et.)	What programme on this TV channel do you use for health info? Name?	How regularly do you view this TV programme?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information on this TV programme?
✓ TV channel most used:		✓ Every day	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ TV channel 2nd most used:		✓ Every week	❍ No	
		✓ Every month		

Figure 3.15: Research questionnaire: Health information sources (media) (continued).

- Health information source - Internet:

Which Internet web pages do you most often use for health information? ✓

Internet web page name?	How regularly do you use this web page?		Do you use this web page for health information?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of the health information on this web page?
✓ Most often used:	✓ Every day		❍ Yes	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ 2nd most often used:	✓ Every week		❍ No	❍ No	
	✓ Every month				

- Health information source - Access to Internet through cell phone:

Which Internet function on your cell phone do you most often use to obtain health information? ✓

Cell phone function name?	How regularly do you use this cell phone function?		Do you use your cell phone to access health information?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information from this function?
✓ Cell phone function most often used:	✓ Every day		❍ Yes	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ 2nd most often used:	✓ Every week		❍ No	❍ No	
	✓ Every month				

- Are there any <u>other media sources</u> that you access for health information? ✓

☐ Books ☐ Posters ☐ Brochures

Other, please specify: ✐

- What OTHER source(s), <u>not media</u>, do you use to obtain health information that you have not indicated in the questions on the previous pages? ✐

Figure 3.16: Research questionnaire: Health information sources (media) (continued).

3.2.5.7 Section F: Health information needs:

Literature provides evidence that there are variations in health information needs among population groups (Stock *et al*., 2003:542). Little is known about how the use of different information sources affects young adults' health and these students may need assistance in understanding the various health media, building an awareness of their own skill sets and media literacy competencies in order to improve their ability to make evidence-based decisions (Ivanitskaya *et al*., 2006:13). In this section of the questionnaire the health information needs of the research cohort were requested as well as the sources which would be most accessible to them through which to receive regular and credible health information. Figures 3.17 below, and 3.18 on the following page, provide the electronic version of this section of the questionnaire.

SECTION F: Health information needs

Please provide us with information on your health information needs.

- What health topic/condition do you most often need information on? ✐

- What health topic/condition do you 2nd most seek information on? ✐

- Please indicate how you would prefer to receive information on health and lifestyle issues on the Stellenbosch University campus.

Preference of source? ✓

- ☐ SU Magazine: *Matieland*
- ☐ SU Newspaper: *Die Matie*
- ☐ Specific SU health brochure
- ☐ Posters on campus
- ☐ Specific SU health web page
- ☐ SU Campus radio
- ☐ SU Intranet health information
- ☐ Departmental

Other, please specify: ✐

Figure 3.17: Research questionnaire: Health information needs.

- Which media source/format is most accessible to you? ✓
(through which to regularly receive information on health and lifestyle issues on the SU campus)

☐ Internet? ☐ SU Intranet?

☐ Email? ☐ SMS to cell phone?

Other, please specify: ✐

- Do you need assistance to improve/manage your health and lifestyle issues? ✓
❍ Yes ❍ No

- What health communication needs do you have? ✐
(on the SU campus)

- Provide at least one health communication need that you have, that would help you with finding credible information on health, or assist you with managing your health. ✐

Figure 3.18: Research questionnaire: Health information needs (continued).

3.2.5.2 Section G: Closing statement

The research questionnaire was concluded by a statement thanking the research cohort for their cooperation in completing the survey as seen in figure 3.19.

Thank you for your cooperation with this survey!

Good luck with the lucky draw to win that new iPod-touch!

Figure 3.19: Research questionnaire: Closing statement.

Stellenbosch University http://scholar.sun.ac.za

3.3 DATA CAPTURING AND STATISTICAL ANALYSIS

The empirical material for this study consists of data procured via an electronic survey. The electronic data-sets to the questionnaire were automatically captured on electronic spreadsheets (MS Excel™) especially designed for the survey format (Checkbox ® Version 4.7) as developed by the SU. This procedure was managed with the assistance of the Information Technology Centre at the SU as well as the Centre for Statistical Analysis at the SU. The content of the survey was self-reported, an acceptable method of data capturing as the research population were all literate (Babbie & Mouton, 2009: 258).

The data analysis was guided by the primary and secondary research questions of the study. Frequencies and percentages are reported for all the major study variables.

The data analysis for the research had the following aims:

- to determine the average age of the subjects
- to determine the demographics of the target population
- to determine selected morphological information of the target population
- to determine the health status of the target population
- to determine whether health status influenced health seeking needs
- to determine the lifestyle indicators; exercise habit, recreation and eating habits
- to determine health risk-behaviour among this group
- to determine the primary source of health information: media
- to determine the primary source of health information: non-media
- to determine the primary health topic used in the health information-seeking process
- to determine the primary reason for health information-seeking
- to establish behaviour change as result of the health information-seeking process
- to determine differences in gender for use of certain media technologies
- to determine differences in health topics for health information by gender
- to establish health communication needs for the target population
- to establish health management needs for the target population
- to determine possible relationships between selected research variables

Stellenbosch University http://scholar.sun.ac.za

The director of the Centre for Statistical Consultation at Stellenbosch University, professor Martin Kidd, was responsible for the extrapolation of the electronic data from the survey results. Results from all the sections of the research questionnaire were processed on spreadsheets and separate graphs reported frequencies for each variable. Professor Kidd also guided and assisted the researcher with the final analyses of the collected and processed data for this study.

The following statistical data analysis procedures and methods were used (Vincent, 2005: 20-34):

- *Descriptive statistics*: These are primarily aimed at describing the data captured. The mean (M) and standard deviation (SD) were used.
- *Simple frequency distribution:* Displaying large data sets of a variable (*X*), with a frequency column (*f)* that indicates the number of cases at a given value of *X*.
- *Grouped frequency distribution:* An ordered listing of a variable (*X*) into groups of scores in one column with a listing in a second column, the frequency column (*f*) of the numbers scored by people in a group.
- *Tables:* Tables present data in a row-and-column format. This format is used to present multivariate data.
- *Graphs: Histogram:* Information displayed from a simple or grouped frequency distribution.

Descriptive statistics methods were used to summarise and present the data on tables, figures and graphs.

Stellenbosch University http://scholar.sun.ac.za

CHAPTER 4

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This study attempted to quantify and explain the use of interpersonal communication, media and related technologies as health information sources among first-year university students on the campus of Stellenbosch University (SU) (Stellenbosch and Tygerberg campus). A cross-sectional survey design was used for this research. The web-based survey intended to measure and document important research constructs at a single point in time. The data from this survey was also planned to provide exploratory information on patterns of health information-seeking practices and preferences encountered among the research target group. A measure of general health information-seeking was employed as an outcome variable with predisposing factors (e.g. age, ethnicity and gender), used as associated predictor variables. Health communication needs and health management needs among the research population were also important research variables to report on.

Measures of the reasons for health information-seeking on specific topics; measures of health information sources/channels and frequency of source/channel use; measures for information source credibility and quality as well as for the outcomes of the health information-seeking process were used as secondary research aims in this study. Variables related to these topics are also reported in literature for health information-seeking research (Anker *et al*., 2011:352; Percheski & Hargittai, 2011:380).

Current literature refers to small numbers of studies conducted on health information-seeking among young adults (student populations) (Anker *et al*., 2011:349; Percheski & Hargittai, 2011:380). Percheski and Hargittai report that among recent studies on health information-seeking, just three were found that focussed on college students (2011:380). Only nine studies were found for college students in a literature review of over 200 published reports on health information-seeking between 1978 and 2010. This represented only 7.0% of the total sample of literature reviewed by the

Stellenbosch University http://scholar.sun.ac.za

researchers on health information-seeking (Anker *et al*., 2011:352). The current research that was undertaken, has attempted to add to the body of knowledge on health information-seeking and its outcomes among a student population group in a South African university setting.

4.2 METHOD

The statistical analysis for this research was guided and provided by prof. Martin Kidd of the Centre for Statistical Consultation at Stellenbosch University. Final statistical interpretations and descriptions were the responsibility of the researcher. The data obtained from the web-based research questionnaire was coded on Microsoft Excel spreadsheets from which the statistical analyses were performed. A data-set from each research respondent for this survey was extrapolated from the survey questionnaire (received via the *SUrvey-system,* Checkbox® Version 4.7, Web Survey Software) and made available to the statistician and the researcher through the Information Technology section of the SU. Quantitative and qualitative data was extrapolated and analysed using the Statistica data analysis software system (StatSoft, Statistica Version 10, 2011).

The Mann-Whitney U-test was used to compare the health status (measured on an ordinal scale) between groups. Other comparisons were all between categorical data, and for this cross validation with the Chi-square test was used. A 5% significance level ($p<0.05$) was used as guideline for significant differences.

4.3 RESULTS

A total of 4 305 electronic survey questionnaires were sent, via e-mail, to the research target group. A total of 283 responses were received after a period of 10 days. Only two of the logged data-sets could not be used in the final analyses as too little information was provided in the data-sets for statistical analyses. The final number of research participants were 281 (N=281). The response rate for the pilot study was 27%

Stellenbosch University http://scholar.sun.ac.za

and for the final research survey this was 6.5%. Hay *et al*. (2009:784), Reinfeld-Kirkman *et al.* (2010:423) and Beaudoin & Hong (2011:588) report slightly higher response rates for health information-seeking surveys for one-time telephone surveys. Literature indicates that the type of self-reported electronic survey used in the current research, very seldom achieves high response rates (Babbie & Mouton, 2009:261). Frequencies for the major research variables are reported in the following discussion.

4.3.1 Demographic information

The demographics of the research target population were as follow: The average age of the study cohort was 19 years (n=157), with one outlier found at 33 years of age**;** gender was represented at 57% (n=160) for female students and 43% (n=121) for male students. For 48% (n=145) of the study cohort, their home language is Afrikaans, for 45% (n= 126) English, and only 2% for IsiXhosa and 1% for IsiZulu. Ethnicity was represented at an indication of 72% (n=200) for White students, 15% (n=43) Coloured students, 10% (n=27) for Black- and 3% for Indian students. The majority of the research cohort n=76, 27.04% were from the Western Cape region in South Africa, with the second most n=31, 11.03% from Gauteng. KwaZulu-Natal was represented at 7.11% (n=20) and 5.69% (n=16) was from the Eastern Cape region. Other less representative regions from South Africa were the Northern Cape at 2.49% (n=7); Mpumalanga at 1.42% (n=4); the Free State at 1.77% (n=5); the North West province at 1.06% (n=3), and Limpopo also at 1.06% (n=3). A total of 3.18% of the research cohort were from outside the country's borders, with Zimbabwe represented at 1.77% (n=5); Namibia at 0.71% (n=2); East Africa at 0.35% (n=1) and the Arab Emirates also at 0.35% (n=1).

Table 4.1 on the following page presents descriptive demographic variables (gender, ethnicity, region of origin, home language and health status) of the research population.

Table 4.1: Research cohort sample demographic characteristics (N=281).

Characteristics		N=281	%
Gender:	Male	n=160	48
	Female	n=121	57
Ethnicity:	White	n=200	72
	Black	n=27	10
	Coloured	n=43	15
	Indian	n=8	3.0
Region (residence):	Western Cape	n=76	27
	Gauteng	n=31	11
	KwaZulu-Natal	n=20	7.0
	Eastern Cape	n=16	5.7
	Northern Cape	n=7	2.5
	Free State	n=5	1.8
	Mpumalanga	n=4	1.4
	North-West	n=3	1.1
	Limpopo	n=3	1.1
	Namibia	n=2	0.7
	Zimbabwe	n=5	1.8
	East Africa	n=1	0.4
	Arab Emirates	n=1	0.4
Language:	Afrikaans	n=145	48
	English	n=126	45
	IsiXhosa	n=6	2.0
	IsiZulu	n=4	1.0
	French	n=2	1.0
	"other languages"	n=8	3.0
Health status:	Excellent	n=58	21
	Very good	n=94	33
	Good	n=81	29
	Reasonable	n=38	14
	Poor	n=10	4.0

4.3.2 Residence

During the past year, 44% (n=125) of the study cohort indicated that they resided in SU hostels or residences; 21% (n=60) reported staying in a private student flat; 19% of the cohort are still living with their parents; 11% indicating that they stayed in a private student house and another 5% of the group living in a variety of student accommodation options provided in and around Stellenbosch and the Cape Town area.

Stellenbosch University http://scholar.sun.ac.za

4.3.3 Morphology

The average body height (meters) of the study cohort was 1.72m (sd=±0.11) and body weight (kilograms) was 68.86kg (sd=±14.29). Table 4.2 indicates the morphological characteristics of the study cohort by age (years), body weight (kilograms), body height (meters) and body mass index (BMI kg/m²). The mean score and standard deviation (±sd) were calculated for age, body weight, body height and BMI (kg/m²).

Table 4.2: Morphological characteristics of the participants (N=281) by age (years), body weight (kilograms), body height (meters) and BMI (kg/m²).

Variable	**Mean** **Standard deviation (sd)**
	2011 (N=281)
Age (years)	19.29 (±1.59) Range: (18.0-33.0)
Body weight (kg)	68.86 (±14.29) Range: (40.0-140.0)
Body height (m)	1.72 (±0.11) Range: (1.48-2.30)
BMI (kg/m²)	23.12 (±3.77) Range: (13.8-44.2)

The socio-demographic and health indicators characterise the study population as a healthy group of young adults, exercising at moderate to low levels, reporting moderate consumption of at least three meals a day, with a moderate prevalence of chronic conditions of lifestyle (conditions/diseases that could develop as result of lifestyle choices, e.g. type two diabetes or hypertension), a low use of chronic medication and reasonable to low percentages of substance use (tobacco use, low; alcohol consumption, moderate & recreational drug use,

low). The average BMI kg/m² score for adults (including young adults) is 18.5 kg/m² to 24.9 kg/m² (Whaley, 2006:58). The mean of the BMI kg/m² for the current study cohort was 23.1 kg/m². This figure falls within the parameters of acceptability for this age group. It must however be mentioned that this figure is at the higher end of the BMI kg/m² continuum, and indicates that the lifestyle of the study cohort is at risk. A report from the American College Health Association (ACHA, 2006:1) states that, on average, 35% of students on university/college campuses are overweight or obese, confirming the tendency of weight increase among young adults during the first few years at university (NASPE, 2007:1). Figure 4.1 below, indicates the BMI kg/m² of the total (N=281) study cohort.

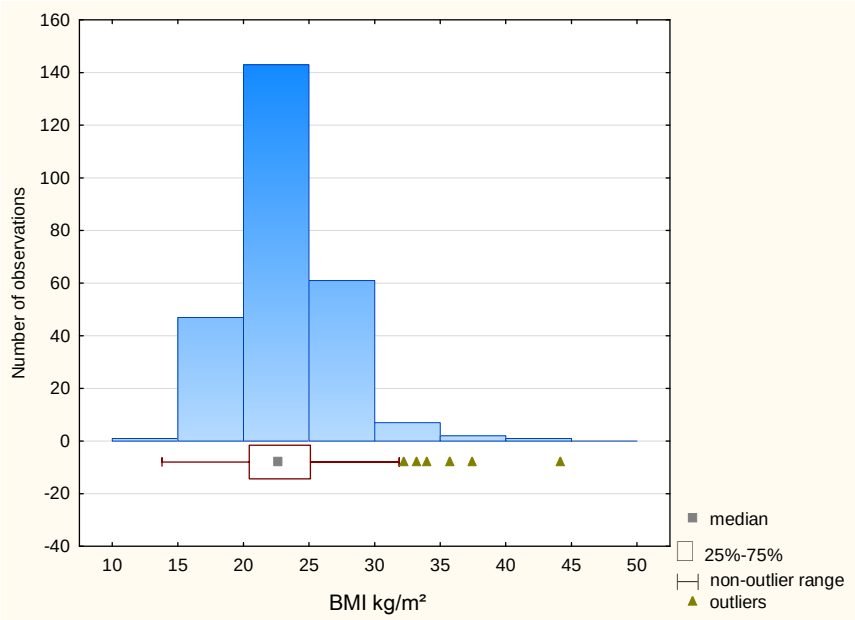

Figure 4.1: The BMI kg/m² of the total (N=281) study cohort.

4.3.4 Health status

Students are a comparatively healthy population group due to their young age and high educational level (Stock *et al.*, 2003:536). The health status of this population group is however influenced by unique cultural, social and environmental factors, including socio-economic status, stigma and historical

trauma (Rushing & Stephens, 2011:136). Despite these variables that could influence the health status of an individual, the study cohort reported *excellent health* at a 21% (n=58) indication; *very good health* at 33% (n=94); *good health* at 29% (n=81); *reasonable health* at 14% (n=38) and *poor health* at an average of 4% (n=10). Figure 4.2 indicates the relationship between health status and the need to look for health information as indicated by the research cohort.

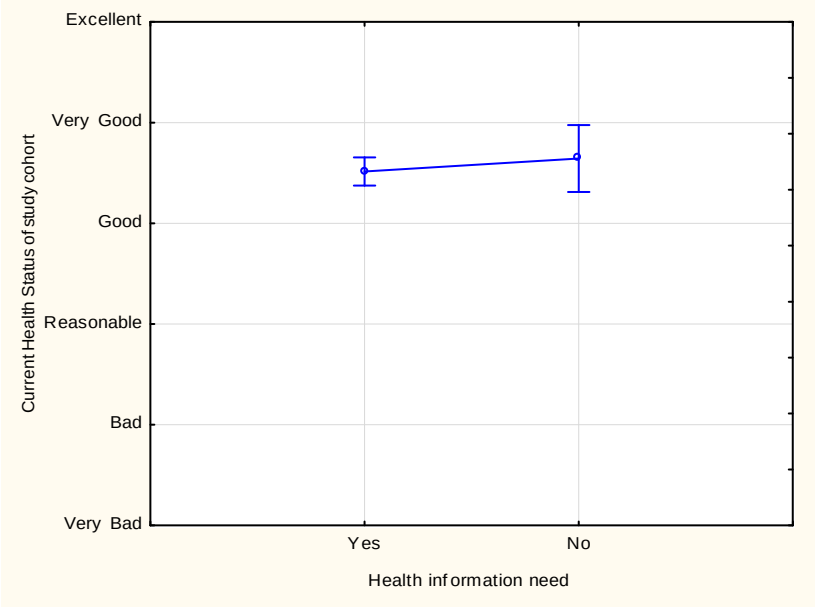

Figure 4.2: Comparison of health status and the need to look for health information among the study cohort (N=281). Averages and 95% confidence intervals are depicted on the graph.

Comparative data is displayed in figure 4.2 and indicates no difference in health status (per health category) of the study cohort (N=281) and health information seeking need (yes and no). No significant difference (p=0.48) was found for the average health status for yes (n=239; m=3.51; ±0.07) and for no (n=42; m=3.64; ±0.16) between the groups. Standard deviation (1.09) and standard error (0.06) were reported.

Stellenbosch University http://scholar.sun.ac.za

There was a high indication of *good health* (average) among the majority of the research cohort at an 83% indication (n=233) (average of categories of excellent, very good and good health), and the need to seek health information.

When asked whether the study cohort suffered from any health condition, the largest percentage, 20% of the group of young adults indicated that they did *not suffer* from any health condition. The group who indicated *reasonable health* at 14% (n=38) and *poor health* at an average of 4% (n=10), the most common health problems reported during the research period were: 23% *sinus problems*; 20% experiencing *stress and anxiety*; 17% reported having *vision (eye) problems*; 12% experiencing *lower back problems*; 10% reporting that they are *overweight*; 9% suffering from *asthma*; 8% reported *low blood* pressure and 4% reporting that they experienced *metabolic/digestive* problems. An average of a further 13% of the study cohort reported a variety of health problems, which included *cardiac*-, *hearing*- and *high cholesterol* problems, all at very low percentages.

The group of the study cohort that indicated *poor health* also indicated the use of medication at 39% (n=74). It is interesting to note that 58% (n=163) of these young adults reported experiencing anxiety and stress, caused primarily by *academic pressure* with a 51% indication. The second most often reported reason for this anxiety was *time management,* indicated at 35%, *personal problems,* the third most reported reason at 24%, and *financial pressure* the fourth most often reported reason at a 22% indication. Only nine percent (9%) of the study cohort reported receiving treatment for this anxiety and stress. Of this group, the use of *medication* to control or alleviate the stress condition was indicated at 4% and only 1% reported using *psychotherapy* as a treatment method or used a *private consultation* with a healthcare professional for the treatment of their anxiety and stress.

Stress is a factor in university life that can lead to many risk-behaviours. Some of the contributing factors are: parental expectations; adjustment from a supervised life during childhood and the adaptation to university life full of freedom; time management issues of planning a balanced day, semester or a more focussed term academic time table; financial obligations to consider; peer

Stellenbosch University http://scholar.sun.ac.za

pressure and other factors of emerging adulthood, that all contribute to the experience of stress among young adults (Rozmus, Evans, Wysochansky & Mixon, 2005:27). Poor mental health is strongly related to other developmental concerns in young adults such as notably lower academic achievements, substance abuse, etc. (Patel, Fisher, Hetrick & McGorry, 2007:1302). The university environment provides unique opportunities for campus staff (academic and healthcare professionals) to impact positively on educating students about their mental health and to enable them to make more informed choices about treatments that are available for health conditions. Only 14% of the group of the study cohort that experienced stress or anxiety reported receiving assistance from the SU. The larger group of 86% of the study cohort indicated that they *did not* receive any help from the SU. Only two students reported using a SU facility for stress treatment. These facilities indicated by them were the Career Counselling Centre and the Centre for Student Counselling and Development (CSCD) on the campus.

4.3.5 Lifestyle

This section of the research questionnaire included measures for three lifestyle behaviours. Lifestyle indicators for good health that were included were: *exercise regularity* per day (exercise for at least 20-30min, for most days of the week, at a moderate intensity, in an uninterrupted way) (Whaley, 2006:133); *recreational time* taken for stress release (at least for 60min per day) (Heckscher Foundation, 2011:1) and *eating habits* (at least 3 meals per day) (CDC, 2010).

The study cohort reported *exercising regularly* at a 48% (n=135) indication. Unfortunately more reports of *not exercising* regularly were indicated among the group (52%, n=146). This reported inactivity figure is concerning. The least active people in a population generally have the highest risk of a variety of negative health outcomes. Although the minimum amount of physical activity needed to decrease this risk is not clear, increasing evidence suggests that participating in no more than 1 hour per week of moderate-intensity physical activity is associated with a lower risk of all causes of mortality and the

Stellenbosch University http://scholar.sun.ac.za

incidence of coronary heart disease (ACSM, 2008:G8-3). Population-based, prospective cohort studies, provide substantial evidence that regular physical activity protects the individual against the onset of some depression symptoms, major depressive disorders, as well as reduced symptoms of anxiety and depression (ACSM, 2008:G8-3). The higher percentage of non-exercisers could have contributed to the high figure of students experiencing anxiety and stress. Reports in several media sources as well as by researchers (Heath, 2006:75; ACSM, 2008; Hoeger & Hoeger, 2009:43; Van Niekerk, 2009:35) contends that participation in physical activity programmes reduces depression symptoms in healthy adults, as mentioned above. Strong evidence demonstrates that the physical fitness and health status of young adults are substantially enhanced by frequent physical activity and any motivational intervention aimed at encouraging physically inactive individuals to exercise more regularly, would do well to consider the role of their other life goals.

The majority of the study cohort, 84% (n=237) indicated that they did spend at least 60min per day, to relax. However, 16% (n=44) of this group did not spend enough time to relax in their daily schedule. This number could have contributed to the figures reported earlier on in this discussion, on the large number of the study cohort who experienced some anxiety and stress within the university environment. Potential outcomes of recreational experiences include increased life skills, self-confidence, enhanced fitness and health, and/or increased attention to academics (Heckscher Foundation, 2011:1). Young adult health is viewed as having physical, emotional, social, and spiritual dimensions that must be holistically addressed to ensure balance and wellbeing (Rushing & Stephens, 2011:136).

A large number, 63% (n=178) of these young adults reported consuming at least three meals per day. Another group of 103 students (37%) however reported not eating three meals a day. A large number of the study cohort reported living in SU residence and these figures could have contributed to the larger group indicating a healthier lifestyle (consuming at least three meals per day), as regular meals are provided by the SU for the students living in a SU residence or hostel.

Stellenbosch University http://scholar.sun.ac.za

The focus of this study was not primarily to establish the health status of the research cohort, or lifestyle indicators. However, the above mentioned variables contribute in establishing a health profile of the current research cohort. No detailed indications of types of exercise, types of recreation or types of meals (e.g. nutritious meals) were therefore asked in this section of the questionnaire. This study rather attempted to provide a profile of health information-seekers via different media sources with the aim to build knowledge on how health information-seeking via different mass media is associated with physical activity, a balanced lifestyle and eating habits.

4.3.6 Health risk-behaviours

According to researchers Steptoe, Wardle, Cui, Bellisle, Zotti, Baranyai & Sanderman (2002:97), lifestyles and health beliefs appear to be established early in life and in this way set a pattern for later years. It is therefore important to monitor the trends in health behaviour among young people and to understand the factors that might impact and contribute to the uptake of health-risk behaviours among young adults. A growing volume of literature shows that the substances most used by higher education students are tobacco, alcohol and cannabis (Franca, Dautzenberg, Falissard & Reynaud, 2010:170; VanKim *et al*., 2010:208), and the use of these substances lead to other risk-behaviours among young adults (including insufficient physical activity). In this research three health risk-behaviours were assessed, that of; *tobacco use*, *alcohol consumption* and *recreational drug use*.

The majority, 89% (n=250) of the research cohort indicated they did *not smoke* cigarettes. Only 11% (n=31) of the current group reported the *use of tobacco* by smoking between two to 10 cigarettes a day. In previous research conducted on the campus of the SU in 2002, Cilliers, Senekal and Kunneke (2006:235) reported on the smoking habit among students at an average of 15%, and in 2004 and 2005, a figure of 16% and 14% respectively, was reported by Van Niekerk (2009:199) for this risk-behaviour. The figures for smoking habit from the current research reflect slightly lower figures compared to other previously reported research figures for student populations, which indicated more

Stellenbosch University http://scholar.sun.ac.za

abundant tobacco use among students on the campus of the University of KwaZulu-Natal in Durban, where 51% of the student population reported smoking (Kamanzi & Adejumo, 2005:87). Elsewhere, higher rates of tobacco use (cigarette smoking) have been reported among young adults in a Native American setting (Rushing & Stephens, 2011:136). Cigarette smoking is the largest preventable cause of illness and premature death among population groups in many countries across the world (Hoeger & Hoeger, 2009:23).

Figures for alcohol use among the study cohort were in contrast, much higher to the reported figures for smoking habit, as indicated in the discussion above. A large number of the study cohort reported the *use of alcohol* at 58% (n=162), indicating that they consumed alcohol at least once a week, 38% (n=61), 18% (n=29) used alcohol twice a week and only 1% indicated using alcohol every day. Less than half of the research cohort reported not using alcohol at all at a 42% (n=119) indication.

Only 6% (n=17) of the study cohort reported using recreational drugs and of this group, 29% (n=5) used these drugs at least once a week and 6% used these drugs twice a week. Most of the study cohort 94% (n=264) abstained from using recreational drugs.

Students often overestimate the prevalence and acceptability of substance use in campus settings and will align their behaviours with these beliefs. According to Franca *et al*. (2010:169), substance use misperceptions are usually associated with individual use. Positive results to reduce substance use have been reported by these researchers for social norms interventions which focus on a particular population group.

4.3.7 Health information source (non-media)

Few studies have focussed on where and why young adults at university/college look for health information (Anker *et al*., 2011:349; Percheski & Hargittai, 2011:379). In this research, several sources of health information-seeking among first-year university students were investigated. The first section was for *health information sources (non-media)* and the

second section for *health information sources (media)*. Reports from research findings in the area of health information-seeking indicate that health information sources often complement and not replace each other in the information-seeking paradigm (Percheski & Hargittai, 2011:379).

4.3.7.1 Health information-seeking: General

A large number, 85% (n=239) of the study cohort indicated that they did have a *need* or *reason* to look for health information during the past year, and only 15% (n=42) reported *not having asked or looked* for health information at all. Figure 4.3 below, presents data indicating the relationship between *gender* and the *need* or *reason* to look for health information as indicated by the study cohort (N=281).

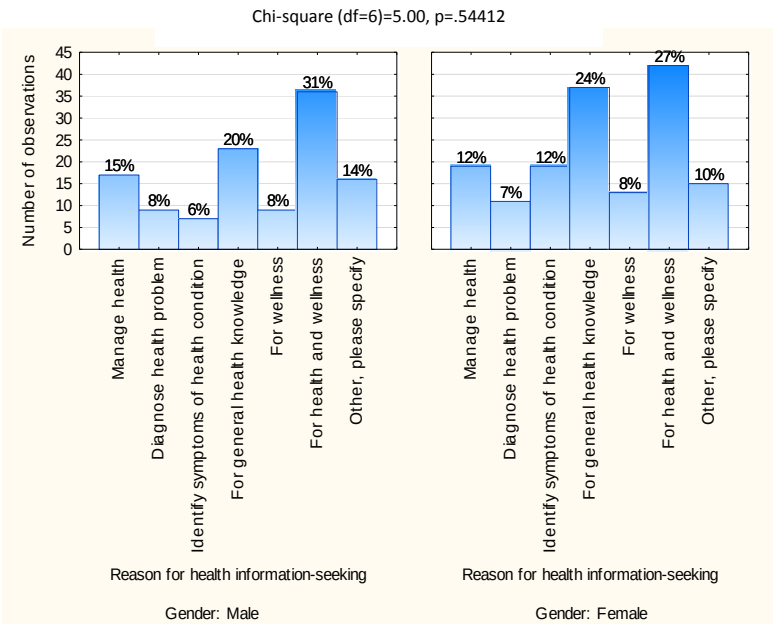

Figure 4.3: The relationship between gender and the need/reason for health information-seeking among the study cohort (N=281).

Of the 239 students who asked about or needed to look for health information, the main *reasons* why they engaged in health information-seeking was to find information for *health and wellness* management 28%, (n=78); 21% (n=60) for information on *general health* issues (which

Stellenbosch University http://scholar.sun.ac.za

motivated them to look for information); 13% (n=36) wanted to *manage their health* through the information obtained; 9% (n=26) wanted to *identify the symptoms* of a health condition; 7% (n=20) wanted to *diagnose a health condition* and a further 3% (n=8) wanted to know more about *disease prevention*. A group of 11% (n=31) of the study cohort had "other" reasons for wanting to find health information. No statistically significant indication of (p=0.54) was found for this research variable in the comparison between gender and the need/reason to ask or look for health information.

The primary *types/topics* of health information that the study cohort asked about or sought information on, was: 23% (n=65) for *fitness* information; 20% (n=57) for *general health* information; 14% (n=40) for *diet and weight loss* information; 11% (n=30) for information on *nutrition*; 11% (n=30) looking for information on a *specific condition*; 6% (n=17) wanted to know more about *lifestyle management*; 5% (n=15) indicated that they wanted to know more about *stress management*; 1% (n=4) looked for *recreational information* and another 8% (n=22) indicating looking for a *variety of other health topics*.

In figure 4.4 on the following page, a further set of data is presented indicating the relationship between *gender* and the *types of health topics* accessed by the study cohort (N=281). There was a significant difference indicated (p=0.00) in a comparison between gender and the type of health information sought by the respective groups.

Researchers Beaudoin & Hong (2011:587) report non-significant effects of usage of media information on a series of health behaviours. However the current study indicated that 57% (n=159) of the research cohort *did have* a *behaviour change* as a result of the health information-seeking process. The other group, 43% (n=122), indicated no change in their health behaviour after asking or looking for health information during the past year.

Stellenbosch University http://scholar.sun.ac.za

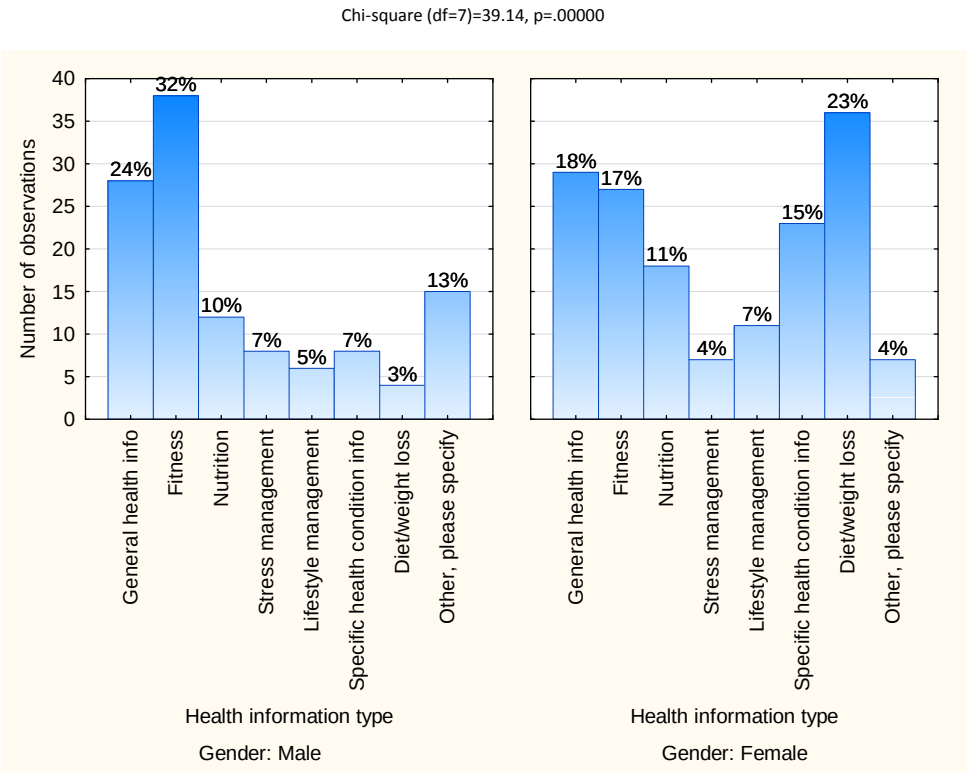

Figure 4.4: The relationship between gender and the types of health topics accessed by the study cohort (N=281).

4.3.7.2 Health information source: Home/family

The role of interpersonal communication as a source of information and communicating about health, treatments thereof and health prevention practices, is well established (Kreps & Thornton, 1992; Brashers *et al*., 2002:260; Dutta-Bergman, 2004a:276). Literature confirms that individuals often gain information about health issues from those in their interpersonal networks (Neuhauser & Kreps, 2010:12). The current research cohort indicated that in this category, they received most of their health information from their *mother*, 60%; 24% indicated their *farther* as an information source; 20% indicated receiving information from *another family member*; 18% respectively for a *brother*, *sister* and *grandmother* that provided them with health information; 5% for an *aunt* as information source and only 2% respectively for a *grandfather* and *uncle* as information source within the family circle. According to Dutta-Bergman

Stellenbosch University http://scholar.sun.ac.za

(2004a:276), individuals who learn health information from interpersonal networks, are more likely to have a strong health orientation.

4.3.7.3 Health information source: School

Results from this section of the research questionnaire (requiring an indication of where or from whom within their educational environment, school), they received the most information on health during the past year, the study cohort indicated that most of their health information was provided through a *specific school subject* (37%), with information provided *in class* (32%), by a *specific teacher* (22%), and with a further 15% indicating receiving health information in *other areas* of the school environment. A group of 4% of the cohort indicated gaining health knowledge provided by *guest speakers* visiting their school. Thaver and Kamal (2010:1073) also report a figure of 29% for teachers being the most important health information source within the school setting.

4.3.7.4 Health information source: Friends/peers

Family and friends often serve as the most popular resources for identifying health symptoms, determining possible health treatments and making lifestyle changes (Percheski & Hargittai, 2011:379). The research cohort reported receiving health information from a *female friend* at a 60% indication and 37% received this information from a *male friend. Other categories of friends* were indicated by 8% of the cohort as information source and 5% indicated *a friend at work* as a health information source.

4.3.7.5 Health information source: Healthcare professionals

Professional health communication channels usually provide the public with information on diagnoses of disease, facts on specific diseases, methods to correct lifestyle, creating awareness on health prevention issues and providing information on new advances in medicine (Miranda *et al*., 2008:40). In literature, healthcare professionals such as doctors and nurses are often indicated as primary health information sources. This is reported

Stellenbosch University http://scholar.sun.ac.za

in a study conducted by Thaver and Kamal (2010:1073), where this particular source of health information was indicated at a 30% level. In the current research, the *family doctor* was indicated as the primary health information source at a 56% indication. *Other healthcare professionals* (27%) were indicated as the second most used information source, with a *specialist doctor* at 8%, *nurses* at 7%, *biokineticists* at 5% and *physiotherapists* at a 3% indication.

4.3.7.6 Health information source: Stellenbosch University

Within the university environment 30% of the study cohort indicated that they received or found the health information they needed from *other sources*. These *other* sources that were indicated were: a biokineticist, books, internet, friends (in residence), private doctor practice, from a pharmacy, etc. A total of 23% indicated that they did however receive valuable health information *during lectures*, health information from the *student health services* at a 19% indication, 10% from the *gymnasium instructor*, 8% from a *specific lecturer*, 7% from the information provided through the *SU Intranet* and only 6% indicated finding information in the *SU library*. A group of 5% of the study cohort indicated receiving information from their *sport coach*.

4.3.8 Health information source (media)

The wide variety of media communication channels available may differ in the extent to which they serve as primary health information sources for different segments of a population (Dutta-Bergman, 2004a:284), but recent literature indicates that the media may have become the most important source of health information for the general public (Mudur, in Schwitzer *et al*., 2005:0577). These various media sources could reduce some of the inequalities in health information-provision that have been experienced in the past, as this information, that was previously available and accessible only through

healthcare professionals, can now be presented to the public at large through larger networks and corporations.

4.3.8.1 Health information source: Media preference

The study cohort reported the *Internet* (66%) as their primary media source to search/look for health information as well as using the *Internet through their cell phones* to access health information at a 19% indication. More traditional media sources such as *magazines* were indicated as the second most used source for health information at a 43% indication, *books* the third most preferred health information source at 21%, the use of *television* as media source at 17%, 6% used a *newspaper* for health information and 3% indicated listening to the *radio* and finding their health information through this source. Eight percent (8%) of the study cohort indicated *not using any media source* at all to obtain health information.

Figure 4.5 below, presents data on media source preference indicated among the study cohort (N=281).

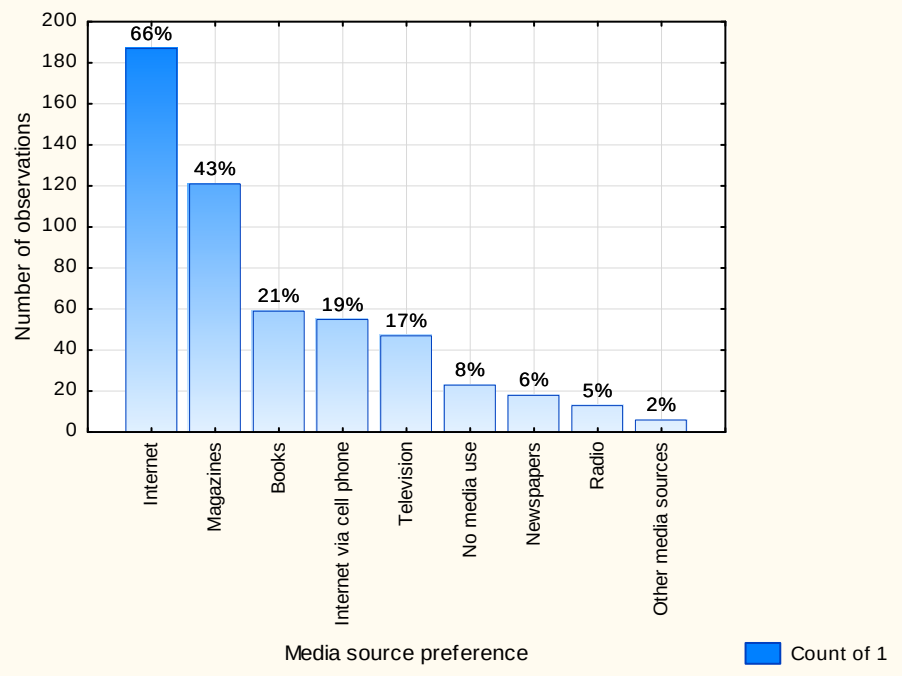

Figure 4.5: Media preference for health information-seeking indicated by the study cohort (N=281).

Stellenbosch University http://scholar.sun.ac.za

Data from the current study provide interesting findings regarding a comparison between a credibility indication and the media sources the study cohort used for health information provision during the past year. A group of 79% of the study cohort indicated that health information provided in magazines is credible, yet for a group of 21%, this was not so. No significant indication (p=0.10) was found between the group who indicated using magazines as health information source and the credibility of this media source.

Regarding *ethnicity* and the use of *various media sources/types* for health information provision, data from the study indicates no significant difference (p=0.59) between ethnicity and the reading of a preferred magazine for health information; ethnicity and television viewing for health information (p=0.50); ethnicity and Internet use via a cell phone to obtain health information (p=0.69); ethnicity and the use of books (p=0.50) as well as for ethnicity and Internet use as health information source (p=0.30).

A new variable not yet seen reported in recent literature on health information seeking, is the use of a Medical Aid Fund magazine. The current study cohort reported retrieving health information from the magazine provided by their parents' Medical Aid, at a 17% indication. However, the majority of the group, 83% (n=233) did not access this magazine for its health information. The magazine from this category most often used for health information was indicated as the *Discovery* magazine at a 17.8 % indication, followed by *GEMS* magazine at 1.1%.

4.3.8.2 Health information source: Printed media – Magazine(s)

Consumers obtain information about health from a variety of media sources and they may have a preference for a specific source (Heuberger & Ivanitskaya, 2011:176). Relationships do exists among information sources and the individual characteristics of people, and it is predicted that this will influence how people seek health information and from what source (Dutta-Bergman, 2004a; Heuberger & Ivanitskaya, 2011; Potter, 2011). A

Stellenbosch University http://scholar.sun.ac.za

group of 44% of the current study cohort reported using *magazines* as a health information source. The magazine most often read by this group was indicated as *Men's Health,* at a 6.0% indication. From this group, 86% reported reading this magazine *once a month* and 90% deemed the information provided in this magazine as *credible*. The largest group, 32% thought the information was *very good*, 19% indicated that the information quality was *excellent*, 29% indicated that it was *good* and only 20% of the group felt that the information was *reasonable*. Most of these students, 93% read the *paper copy* of this magazine with only 7% indicating reading the Internet *online* copy.

The second most read magazine by the study cohort was indicated as the *Huisgenoot,* a weekly Afrikaans magazine at a 5.7% indication. Of this group, 88% read this magazine at least *once a month*, with only 10% reading it *every week.* The majority of the group, 79% thought that the health information in this magazine was *credible* and that the quality was *good* (31%). A group of 86% of the study cohort read the *paper copy* of the magazine, with only 14% reading the magazine *online.*

Figure 4.6 on the following page, presents another set of data on the comparison between the most preferred magazine read and ethnicity among the study cohort. The largest section of the study cohort (56%) (ethnicity: white), indicated not using magazines as their primary source of health information, as well as the group (ethnicity: coloured) (60%), whereas the group (ethnicity: black), did however use magazines for health information provision at a 52% indication. No statistical significant difference (p=0.59) was found for this comparison between ethnicity and the use of magazines as health information source.

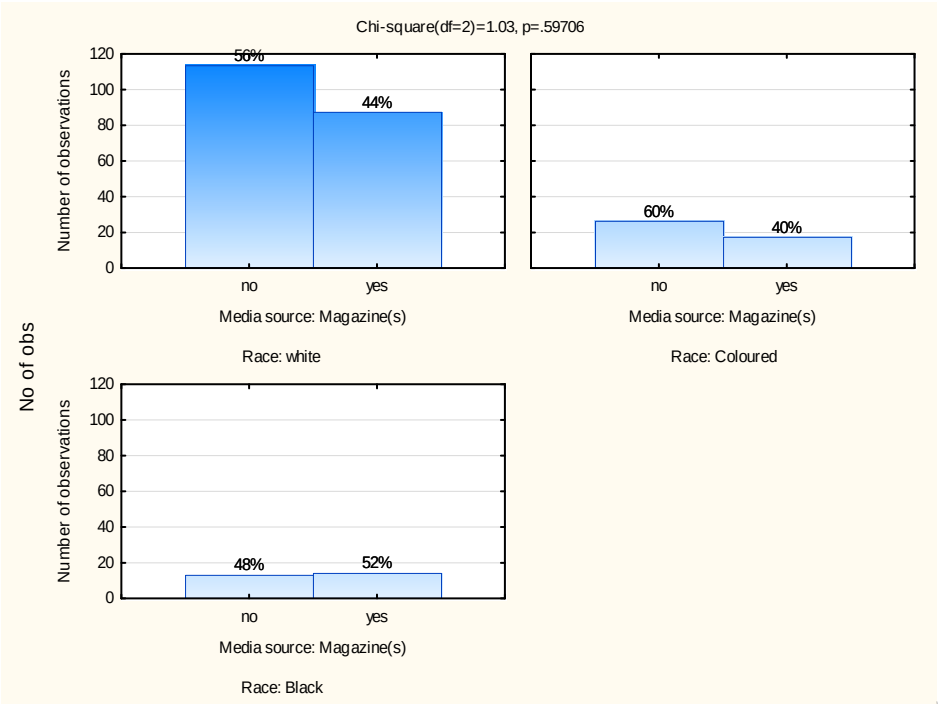

Figure 4.6: Indication of ethnicity and preferred magazine use as health information source among the study cohort (N=281).

From the research data comparisons, a further statistically significant indication (p=0.00) was found for gender and preferred magazine use as health information source, indicated in figure 4.7 below.

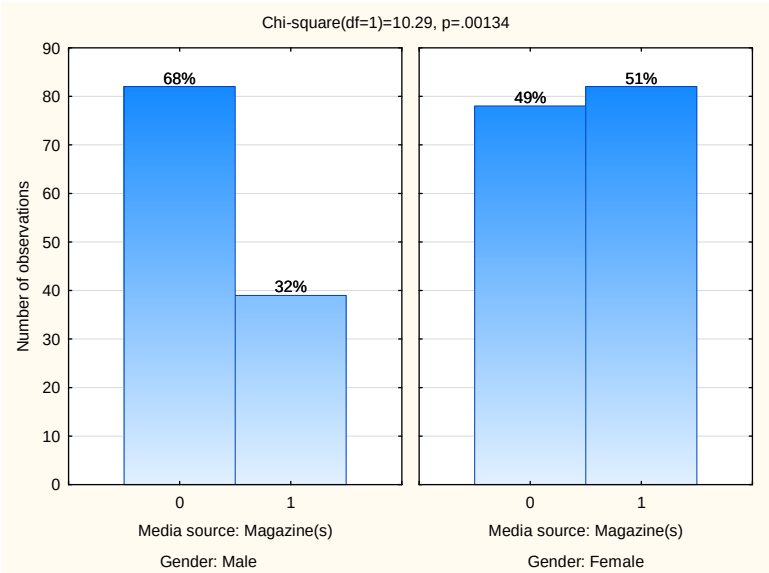

Figure 4.7: Indication of gender and preferred magazine use as health information source among the study cohort (N=281).

Stellenbosch University http://scholar.sun.ac.za

No statistically significant (p=0.68) indications were found between gender and Internet access use via cell phones to obtain health information; between gender and television viewing (p=0.16); between gender and Internet use (p=0.25) as well as for gender and the use of books as health information source (p=0.31).

4.3.8.3 Health information source: Printed media – Newspaper(s)

Newspapers are classified as information-oriented media and are filled not only with news, but also carry entertainment, information, education and advertisements (Turow, 2009:299). Literature reveals that people do not always read a whole newspaper, but read the newspapers-sections that have a direct connection with their personal interests. In the context of the current research, it is interesting to note that among young adults, reading a newspaper to find health information was rated very low at a 6.0% indication. *Die Burger,* an Afrikaans daily newspaper, was the most read (6.0%) newspaper among the study cohort. *Rapport,* a Sunday, weekly newspaper, was indicated as second most read at 1.06%. A variety of other newspapers such as the *Cape Times, Sunday Times* and *Beeld* indicated at 0.71%. *The Star, Daily Voice, Daily Sun, Rapport, Eikestadnuus, Cape Argus, Volksblad, Sowetan* and *Die Matie,* were consulted by the study cohort at an average of 0.35%.

Of this group who did read newspapers, 39% read their first chosen newspaper *every day*, 50% read the newspaper *once a week* and 11% indicated reading a newspaper *once a month*. The *credibility* of health information from this media source was rated high at a 78% indication, but 22% however did not think so. The largest group, 44% thought the quality of the information provided was *good*, 22% indicated that it was *excellent*, 22% also thought the information was *reasonable*. Only 11% deemed the information as *poor*. The *paper copy* of these newspapers was still the most popular format to read and was indicated by 89% of the study cohort, with only 11% reading the *online* version.

Stellenbosch University http://scholar.sun.ac.za

The above reported figures for newspapers being used as health information source, are much lower than other recently reported statistics in literature. Newspaper usage for health information-seeking was indicated at 31 % by respondents in a study conducted by Thaver and Kamal (2010:1073) and at 69% reported by Beaudoin and Hong (2011:587).

4.3.8.3 Health information source: Broadcasting media – Radio

Radio as a media source is seen more as an entertainment-oriented source of information provision. When asked specifically whether the current study cohort used radio as a health information source, 62% indicated that they did *not*, and the other group of 38%, *did* however take note of the health information provided by this media source. Communication through this media source is delivered over mass electronic communication networks, in various formats and attracts very specific kinds of listeners (Turow, 2009:435). The consumption of information through this source is seen as a more passive act (listening), where the messages and programmes are short lived and informational (Dutta-Bergmann, 2004a:279). Statistics from the current research indicate a very low percentage (3%) of the use of radio as health information source. Most of the study cohort who indicated that they listened to the radio, reported listening to the radio-station *5FM* at a 3.2% indication and *KFM* as the second most listened to radio station at 1.4%. Other radio stations used by the study cohort were *Good Hope FM, Heart FM, RSG, Mhlobo Wenene, MFM, Cape Talk* and *CCFM* at a 0.35% indication. Of the group who used their radios, 85% listened to their radio *every day*, 77% thought the information was *credible*, 62% deemed the quality of the information as reasonable and 15% thought it was of *good quality.*

Stamm *et al.* (2003:144) also report low figures for radio as media source used for health information. Only 10% of respondents in that particular research received health information from the radio. In a study conducted by Heggen *et al.* (2009) in West-Africa, 25% of the respondents reported listening to the radio, implicating that in rural areas people have more

Stellenbosch University http://scholar.sun.ac.za

access to radio than most other types of media and confirms that radio has the ability to attract listeners in every demographic group (Turow, 2009:432).

4.3.8.4 Health information source: Visual media – Television

The primary focus of television broadcasting was initially more entertainment-oriented but has recently been changing rapidly to include education and information provision as well. According to Dutta-Bergmann (2004a:278), learning from television about health issues is more of a result of serendipitous learning rather than goal-directed learning. This report by Dutta-Bergmann is contradictory to other survey research which indicates that many Americans get most of their health news and information from television (Schwitzer *et al*., 2005:0577). The current research conducted at Stellenbosch University among young adults on the university campus, indicate that only 17% of the research cohort used television for obtaining health information. Of this group, 40% used television for health information *every week,* 38% *every month* and 21% *every day.* The television channel most often accessed was *TV3* at 4.3% and *MNET 101* (a DStv channel) second most viewed at 3.9%. For their first choice of television channel, 87% of the study cohort indicated that they thought that the information was *credible* and 45% deemed it of *good* quality. Other television channels often viewed by the study cohort were; *DStv 180, SABC 1, DStv 124, DStv 111* and *DStv 110*. The television programmes most often viewed for health information included: *Hello Doctor,* 2.5%; *Carte Blanche,* 2.1%; *Oprah*, 2.1%; *Dr. OZ,* 1.8% and *Grey's Anatomy*, *The Biggest Loser*, *Super Size v/s Super Skinny*, *Medical Miracles*, *Untold stories of the ER*, *Celebrity Health*, *House, CSI* and *morning exercise programmes* at an average of 0.4%.

In contrast to the above mentioned lower statistics reported on television as a health information source, Thaver and Kamal (2010:1073) indicate that a group of late adolescents in Pakistan reported television as the major media source for providing them with information about health issues at 56%.

Stellenbosch University http://scholar.sun.ac.za

This same figure of 56% is reported for television as source of health information by Beaudoin and Hong (2011:587) confirming the media source preference among certain population sub-groups.

4.3.8.4 Health information source: New media – Internet

The use of media technologies are increasingly imbedded in the lives of young adults. Surveys conducted by the Pew Internet and American Life Project during 2009, indicate that 93% of late teens and young adults in the USA use the Internet for information provision (Rushing & Stephens, 2011:136). Reinfeld-Kirkman *et al*. (2010:422) and Beaudoin and Hong (2011:586) also report that the Internet is often consulted for health information by young adults and report that individuals with tertiary education, sought health information at approximately twice the rate through this source as people in other education categories.

The tendency of high statistical figures for the use of the Internet as health information source among young adults is confirmed by the current research. Altogether 66% of the research cohort reported using the *Internet* for finding health information. They also reported using the Internet at least *every week* at a 23% indication, 56% reported using this media source *every month* and 21% used the Internet *every day* for access to health information. Most of this group, 17% indicated using the search-engine *Google* to gain access to health information by typing in keywords or questions and only 1.4% used *Yahoo.* Information from the web search-engine most often used, a group of 88% of the Internet-users reported that they deemed the information as *trustworthy* and 18% indicated that it was, according to their opinion of *excellent* quality, 30% thought it was *very good*, 29% indicated the quality as *good* and only 4% thought that the information provided on the Internet web-site was *poor*. The most accessed web-site was indicated as *health24.com*. at a 7.8% indication. Other web-sites often used for health information was indicated as; *health4men.co.za, bodybuilding.com, health24.com, webMD.com, Healthy Living, Men's Health* online web-site, *Sports Illustrated, Fitness online,* Addidas

Stellenbosch University http://scholar.sun.ac.za

Training, Wikipedia.org, Shape magazine web-site, the *Weigh Less* web-site and *PubMed* and *Medline* academic web-sites. Most of the study cohort indicated using the web search-engines by accessing it with the use of questions to find specific health websites.

4.3.8.5 Health information source: New media – Cell phones

The higher level of Internet use reported by the study cohort, in comparison to other media sources, also generated information on a wide spectrum of online activity through devices such as the use of cell phones for access to health information. According to Rushing and Stephens (2011:135), cell phone use has increased during the past five years and rates of up to 75% use among young adults in the USA have been reported. The current research indicates that 7.8% of research cohort used *Google* on their cell phone to access health information, 5.3% used an *internet browser* function and 1.4% reported the use of the *Facebook* function. Other internet functions used via the cell phone to access health information were; *Twitter*, *webmd*, *health.com*, *Men's Health* web-site, *Wikipedia, healthscout, Yahoo* and *MXit.* The group also indicated using *text messages* to friends and family. The use of the above mentioned cell phone functions to access health information were indicated at levels of 38% for use *every month*, 36% for use *every day* and 25% for *weekly use*. Most of these cell phone users, 80% thought that the information was *credible* and 36% deemed it of *good* quality, 25% as *very good* and 15% as being of *excellent* quality.

According to several researchers (Neuhauser & Kreps, 2010:14; Gowen 2011:1) in the field of health and the management thereof, the potential of cell phones and PDAs to promote health and wellbeing as well as for health information-seeking, has not yet been fully explored.

4.3.8.6 Health information source: Other media sources

Health information providers across the world are expanding options of communication to incorporate a wider range of non-health disciplines, such

Stellenbosch University http://scholar.sun.ac.za

as local schools, councils, commercial laboratories and libraries (Smith & Duman, 2009:261). High quality health information provision for the public at large has a key role to play in the future of health management, at individual and commercial levels. In this context it is interesting to note that 43% of the current research cohort indicated finding health information through *brochures*, 33% through *books,* 14% on *posters* and *billboards* and 24% for *other* sources.

Dutta-Bergman (2004b:42) argues that alternative, and especially *new media* channels do not simply replace the older media channels, instead they merely augment or compliment the media usage behaviours of audience members.

4.3.9 Health information needs

Young adulthood is a time of transition from adolescence to adulthood, a stage that encompasses many life changes including the need for adaptations to a new lifestyle and new living environments (ERIC Thesaurus, 2001:1) These life changes can either have a positive or negative influence on their health and well-being (Taylor *et al*., 2009:255). This "window-of-time", between ±18-25 years of age, could be a valuable period in which to reach young adults with credible health information, especially within a university setting. When asked about the *health information needs* the current research cohort had, especially with regard to *health communication provision*, the group indicated a preference for receiving health information through their *local university newspaper* (Die Matie), with a 37% indication and also through information provided in the *local campus magazine* (Matieland), at a 35% indication. They would however like to have credible health information provided on a *specific health web page* for the university (37%), with more health information available on the *SU Intranet* (25%), and also through specific *SU health brochures* made available on campus (23%). *Posters* on campus, providing key health information messages, could reach a possible target group of 20% of young adults. The study cohort also indicated that health information provided by the local campus *radio station* (Matie Radio: MFM) could be a valuable

Stellenbosch University http://scholar.sun.ac.za

source of information provision at a 9% indication. Health information provided at *academic departmental* level and through some *other* sources were indicated at an average of 8% and 7% respectively.

Young adults on the campus of the SU, who responded to the research questionnaire, expressed a need to use an *information source/format* that was *easily accessible* to them, to provide them with health information on a *regular base*. For this, the study cohort indicated that the *Internet* was *most accessible* to them at a 66% indication, information via *e-mail* at a 59% indication, 27% wanted information provided through the *SU Intranet* and 24% would not mind receiving regular health information *via SMS* to their *cell phones*.

4.3.10 Assistance with health management and -improvement

Health orientation refers to the extent to which an individual is concerned about health, is willing to look for information on health, and where it has emerged as a critical concept in the explanation of the person's health behaviour (Dutta-Bergman, 2004a:275). In this context the current study cohort expressed a need to be *assisted* and showed *interest in* the areas of *improving their health* at a 39% indication. However, the larger group of young adults (61%) from the study cohort, indicated they felt that they were "in good health", and *not needing any assistance* to manage their health. These were the answers for a dichotomous *Yes* and *No* question on whether they needed assistance to improve or manage their health. Interest in health or a health topic is triggered by a motivation within an individual and will subsequently lead to an active engagement in cognitions and behaviours related to health in general (Dutta-Bergman, 2004a:275). Health communication messages can be of great value and are therefore essential for promoting behaviour change among individuals and groups. These health communication needs, as expressed by the study cohort, are indicated in the following section and categorised in table 4.3 on the following page.

Stellenbosch University http://scholar.sun.ac.za

4.3.11 Health information and health communication needs

If successfully produced, health communication messages can increase knowledge and awareness of a health condition, a health problem, health needs, influence perceptions which may lead to behaviour change, increase the demand for health services, and inform the decision-making of an individual (Heggen *et al*., 2009:46). An extensive range of health information needs were expressed by the current study cohort, ranging from suggestions of health topics they would like more information on, information on specific health conditions, ways in which they would prefer to receive regular health messages and information and suggestions of posters, brochures and seminars through which information could be provided to create awareness on health issues. Table 4.3 below, and continued on the following two pages, present these health communication needs and suggestions as indicated by the study cohort.

Table 4.3: Health information and health communication needs expressed by the study cohort (N=281).

Type of health information / communication needed	Percentage of response indication	Health communication and health information topics
• **Specific health conditions** ⇨	2.8% 1.5%	✓Stress & anxiety: handling stress and general information (e.g. during exams, etc.) ✓ Contact details of an "on call" psychiatrist for support – telephone conversations
	0.7%	✓Asthma: treatment
	0.3%	✓Sinus: treatment
	0.3%	✓Sport injuries: information & treatment
	1.8%	✓Weight management: information
	1.5%	✓Cardiac problems: information
	1.5%	✓ Specific conditions: information – disease awareness
	1.4%	✓ Sexually transmitted diseases (STD's): information
	1.4%	✓ Addiction: information & guidance
	0.3%	✓ Concentration: information on general focus
	0.3%	✓ Flu: general info & prevention
	0.3%	✓ Hearing/ears: problems & treatment
	0.3%	✓ Back problems: information

Table 4.3: Health information and health communication needs expressed by the study cohort (continued).

• **Specific health conditions** ⇨	0.7%	✓ Irritable bowel syndrome: info, diets & treatment
	0.3%	✓ Dermatological issues: info & treatment
	0.3%	✓ Vaccines: general info
	0.3%	✓ Sight/eyes: info & treatment
• **Source through which to provide health information to students** ⇨	5.3% 0.3% 0.3% 0.3%	- E-mail: short, weekly messages on health topics - Community leader: interpersonal communication - Tygerberg campus: better health info on campus - SU Health Blog: regular info & communication on health
	1.8%	- SMS: short, daily, weekly messages
	3.6%	- *mymaties*: regular health messages
	2.1%	- SU Magazine: regular health articles
	7,1%	- SU Health Website: regular relevant health info provided; easy access is important
	1.5%	- Health campaigns: regular mass mobilisation & awareness
	3.9%	- Posters: on campus with key health info - awareness
	2.1%	- SU Newspaper: regular column on health issues
	6.4%	- SU Student Health Services: general info; location info; accessibility; interpersonal communication
• **Health topics suggested** ⇨	12.4%	➢ Healthy diets: realistic information that works and how to start and continue with it
	11.3%	➢ Physical fitness: contact details of person(s) to provide advice and credible information; how to exercise
	11.0%	➢ Exercise: information on types of exercise and how to do the exercises; exercise plans; free exercise plans
	0.7%	➢ Medicine: info on where to find the cheapest medicine
	5.7%	➢ Advice on finding credible health info sources
	2.8%	➢ Info on food in SU residences
	1.8%	➢ Food preparation for students living in private accommodation
	1.8%	➢ Mental wellness: info & discussions
	2.8%	➢ General student support on campus: info; where, who?
	2.8%	➢ Health info: knowledgeable people who can provide answers to questions immediately and regularly; easily accessible health info

Table 4.3: Health information and health communication needs expressed by the study cohort (continued).

• **Health topics suggested** ⇨	7.8%	➢ SU Student Health Services: regular news on health issues; contact details; procedures of visits; "Happy-hour" speak with Drs, free of charge
	3.6%	➢ Seminars: regular discussion sessions on relevant health topics; creating an awareness
	3.9%	➢ Posters on campus indicating key health messages
	3.9%	➢ Brochures to be handed out on campus with info on health topics
	2.5%	➢ Library: special links provided to health books
	10.6%	➢ SU Gymnasium: brochures on how to exercise and use the different gymnasium equipment/machines in the correct way
	4.2%	➢ Regular messages on "breakouts" of health conditions and contagious diseases on campus
	1.5%	➢ Time management & assistance: info &discussions
	2.1%	➢ Lifestyle choices & management: info & discussions; substance use & implications
	2.8%	➢ Health facilities on SU campus & Stellenbosch: info on location and services; procedure of visits
	3.2%	➢ Academic pressure: how to plan and handle this in the 1st year
	0.3%	➢ Safety: Info on how to reduce fear of attacks
	1.8%	➢ Nutritional value of foods: info; espescially on food provided on campus (Neelsie)
	5.3%	➢ Sport: info on types of sport presented at the SU, clubs etc. to increase fitness levels
	4.2%	➢ Health info: rating system to provide info on most credible sources; subscription free health info web sites

4.4 CONCLUSION

This is the first South African survey of exploratory nature, which has examined the relationship between the different sources that provide young adults with health information (non-media and media) and the indication of a behaviour change as a result of this health information-seeking process.

Health information sources are diverse, and from the current results, it has been confirmed that interpersonal communication is still an important information medium

Stellenbosch University http://scholar.sun.ac.za

through which young adults receive their health information. The concept of an ecological context to health communication and its effects are therefore supported by these results, still placing the interrelations between people and their environments as an important construct to consider. These people and places-based factors operate both locally and exert influence in a variety of ways over the behaviour and health of people in that one location as well as also more distally, where these places have the potential to influence people's behaviour and health over large geographical regions.

Overall, the use of media sources and related technology was exceptionally common and diverse among the study cohort, mirroring patterns of media use reported in literature for other young adult groups around the world. The indication of cell phone use to access the Internet for health information, has created a renewed awareness of the importance of media technologies and text messaging services through cell phones and PDAs. The mobility, speed and ubiquity of these devices have given rise to new strategies for connecting people to health information and health management. Research in this area of health communication has shown promising results (Rushing & Stephens, 2011:137).

People in society are not merely passive recipients of media information and messages. They respond to content provided by the media based on their personal backgrounds, interests, level of education and interpersonal relationships. The results from this research also support the theory of effect-studies in communication (the media), where the impact of the provision of certain types of information, presented through the media, have on people's thinking and behaviour. It was encouraging to note that a behaviour change as result of the health information-seeking process was reported for this group and this indication confirms the importance of credible, accessible health information provision to the public at large.

The data suggests that technology-based health information provision could be effectively used to reach young adults on a university campus, as a high percentage of the study cohort indicated a need to find health information. Variations in media use and health topics accessed, by age, gender and ethnicity, suggest that different approaches would be better to reach some segments of a population than others.

Stellenbosch University http://scholar.sun.ac.za

Understanding the reasons behind individual differences in health information-behaviour is essential for the further development of tailored information services that could assist young adults with managing their health and lifestyle in a more positive way. A better understanding of mass media access, use and preference of health information sources among young adults on university campuses, would aid the development of communication strategies designed to increase knowledge and promote health and lifestyle behaviour changes.

Stellenbosch University http://scholar.sun.ac.za

CHAPTER 5

SUMMARY AND RECOMMENDATIONS

5.1 INTRODUCTION

Health information-seeking has been depicted as a dynamic and complex construct that includes the purposive acquisition of information from selected information carriers (Beaudoin & Hong, 2011:587), as well as the process of sorting through external health information to determine what is useful and what is not. In this regard, the current research attempted to acquire information on health information-seeking practices among young adults on a university campus and address how information-seeking can lead to health outcomes (these outcomes being influenced by socio-psychological steps, which include attention, cognition, and development of attitudes and behaviours). Research in the area of health information-seeking have revealed certain models explaining why people use different channels or sources when seeking information as well as the exploration of the outcomes of this information-seeking process (Johnson, Case, Andrews, Allard & Johnson, 2006:569; Chaffee & Schleuder, 1983:77; Katz, Blumler & Gurevitch, 1973 in Beaudoin & Hong, 2011:587). Within this context, it is reported that people are motivated in different ways to seek health information as well being differently affected by the health information-seeking process. This issue of effects, brought about by the information-seeking process which utilizes information provided by the media, and the measure of its effectiveness, still remains inadequately researched. By understanding the motivational construct and effects construct of health information-seeking, contributions to the health communication process can be tailored to be more effective within population sub-groups and within different environments.

The health of students at tertiary educational institutions (e.g. university or college) is a matter of increasing concern (Cilliers *et al*., 2006:234; Van Niekerk, 2009:218) and needs to be researched, investigated and improved through an interdisciplinary approach, addressing the multiple constructs of health status. Health research has

Stellenbosch University http://scholar.sun.ac.za

relatively neglected the young adult population and researchers confirm that information concerning the health needs (health communication) and health problems of young adults are still inadequate. Student health research has also indicated that health problems at this life stage may influence student attrition, particularly of first-year students.

All formats of health communication research is seen as vital to the future in the management of health in society, and in the context of the current research, contributing to the body of knowledge on student health and its related constructs. Health information is readily available to all consumers in modern society as provided by various sources (media and non-media). Society today have increasing opportunities to choose from which information sources and especially which media and aspects of media they will attend to and which they choose to learn from. The various media sources available today provide different opportunities for learning about health and influencing health behaviours.

Research on health-promotion suggests that professionals in higher education should conduct population-based assessments of students' health status, influences and needs, as a critical indicator of evidence-based practice. Data from the current research shows the feasibility of addressing health communication needs among young adults, as this offers hope in an attempt to improve health and lifestyle choices among this population group.

5.2 RESULTS AND RELATED RECOMMENDATIONS

This research survey was successful in obtaining the first empirical data that has been reported in South Africa on the various sources of health information accessed by young adults for health information. It has also elucidated the reasons for and types of health topics in this health information-seeking process, young adults' use of media technologies, their media preferences, and the importance of its complimentary variables, such as health- and media literacy.

It was important to establish the health status of the research cohort to provide insight and background on possible motivational drives for health information-seeking.

Stellenbosch University http://scholar.sun.ac.za

Although an average of good health status was reported by the study cohort, data indicated that this group of young adults are at risk of developing poor health behaviours that could influence their current and future health. The mean of the BMI kg/m² for the current study cohort was 23.1 kg/m². This figure is at the higher end of the BMI kg/m² continuum, and indicates that the lifestyle of the study cohort is at risk. These indications should not be ignored, but addressed by specific interactive health interventions within the university environment.

Demographic data reveals diverse areas of descent for the group of students, diverse language use and ethnicity. Although the majority of the research cohort was from the Western Cape region in South Africa and spoke Afrikaans, a large percentage of this group was not and spoke other languages. In this context it is important to acknowledge the *people* and *places* framework that influences health behaviour. Any health interventions or health communication efforts undertaken by university staff, should take into consideration the fact of audience segmentation, which is very important and allows for the creation of health messages that are designed for reaching specific groups of individuals. It will ultimately make the messages more relevant and provide the basis for selection of media, community, organisational or interpersonal channels most appropriate for reaching the targeted student population.

The health status of the study cohort did have a positive influence on health information- seeking and this also contributed to the health behaviour change indicated by the majority of the group. Health communication messages are essential for promoting behaviour change among individuals and groups and if successfully produced, can increase knowledge and awareness of a health problem, influence perceptions which may lead to behaviour change, increase demand for health services and inform decision making. Credible sources of health information provision exist and could further be expanded. Healthcare professionals and university administrators should direct their population groups to such credible information sources and channels.

A large number of the study cohort reported a need and indicated a reason for seeking health information. This fact has revealed the importance of responsible and credible health information provision, by all sources (media and non-media) involved in this

Stellenbosch University http://scholar.sun.ac.za

paradigm. Health news and information is believed to be critical to the advancement of public health and the elimination of disparities in health access and its outcomes.

The majority of this group of students expressed a need to find general information on health and wellness in order to manage their health. Motivation triggers an individual's interest in health or a health topic, subsequently leading to an active engagement in cognitions and behaviours related to health in general, or a specific health topic. Identification of the most appropriate channels of communication, based on availability, level of education and geographical location of population sub-groups will have an effect on the successes of health information provision.

Reported data on the lifestyle of the study cohort revealed a large percentage of inactivity among the group as well as a large percentage of the group also indicating a need to find information on fitness (among both genders) and healthy diets. These facts have created an impression of an inherent need to change health behaviour that has emerged among a certain percentage of the young adults, indicating that they are aware of the importance of a healthy lifestyle. This conclusion may be presumptuous. However, in this context, it remains important to provide opportunities on campus, where information is made available, free of charge, to the student population at large on health and fitness facts. The primary focus for achieving health-related goals among population groups have been on prescribing diet and exercise for general health improvements. The benefits of physical activity in reducing the physiological and psychological responses to stress are well-established. The university environment is an ideal place in which regular seminars could be presented on healthy eating habits and fitness. Knowledge is readily available within the academic environment. It will however need specific efforts by SU staff to address these health communication needs among students.

A large number of the study cohort indicated experiencing some stress and anxiety. The positive effect of exercise as a stress release and long-term stress management method is not marketed or advocated enough among students on the SU campus (Van Niekerk, 2009:207). The current study cohort represented a very small percentage of the total student population of the Stellenbosch University (SU) and therefore leaves a large underutilised student population that could benefit from the services provided by

Stellenbosch University http://scholar.sun.ac.za

related SU academic departments as well as the SU Gymnasium and the Sports Medical and Rehabilitation Centre to assist with the stressors of university life.

Health information sources that emerged from the current study, which was indicated as relevant, were those within the family structure. Family often serve as popular resources for identifying health symptoms, determining possible treatments and making lifestyle changes. The importance of the health information-chain, influenced by the home environment, the educational level of individuals within this environment, as well as the information provision through the media, should therefore be acknowledged.

The current research has revealed that the media are an important health information source, with the largest percentage of the research cohort indicating using the Internet for health information provision, by directly accessing health websites using the *Google* search engine (most preferred), or using their cell phones to access the Internet. As society moves toward finding evidence-based medicine and health information, health providers, health educators and health-care consumers must acquire not only basic health-information literacy skills, but also more advanced health-seeking competencies. Students within the university environment should be given the opportunity (specific courses, seminars or information sessions) to improve their health literacy and media literacy skills. Through gaining critical analysis and viewing skills, media literacy is believed to lead not only to greater understanding of content and information provided through the media, but may also result in some personal changes. Research data indicates that many young adults/students lack important competencies and knowledge that may limit their ability to seek health information and make informed health choices.

Data from the current research indicated that the more traditional media source, magazines, was the second most used media source for providing health information to the study cohort. Magazines are actively oriented, require cognitive involvement, provide in-depth coverage and directions to additional information, have a long shelf life and also have archival qualities, which make them a valuable source of information. Magazine editors should be made aware of the findings of this exploratory research in order for them to focus on providing more regular and credible information on health and wellness issues that target young adults.

Stellenbosch University http://scholar.sun.ac.za

The use of magazines provided by Medical Aids is an underutilised source of health information as indicated by the research data. The administrators of these medical aid funds as well as the editors of these types of magazines should do well in rethinking how to reach a younger population group with the valuable health information provided in their magazines.

Results from the present survey support the importance of empirical assessment of health communication efforts. The current research cohort indicated a need to receive regular health information through their local university newspaper (e.g. a health column; fitness tips in the sport-section, etc.), as well as regular health information provided in their "on campus" student magazine, as these printed media are made freely available to all registered students on campus. A large number of these students also indicated the need to receive health information, on a regular basis via brochures also made freely available on campus. Financial constraints were indicated as one of the stressors contributing to anxiety experienced by the study cohort. The SU could utilise its expert academic knowledge and find sponsors to create informative brochures that provide information on key health issues and conditions and present them to all students, free of charge. The SU would do well to acknowledge this health communication need among its student population.

An extensive range of health information needs were expressed by the study cohort. These needs and suggestions ranged from specific health conditions they would like to receive credible and easily accessible information on, to the most convenient sources through which health communication should take place. Further suggestions on health topics were extensive, and found to be repeating a pattern for information on health and fitness, healthy diets to follow and exercise programmes to follow. These topics were all earlier reported when asked about the primary health topics asked about and accessed during the past year. An active effort from management and staff at the SU will be needed to disseminate these health information needs and make them happen.

The findings from this research demonstrate that health information-seeking among young adults is a prevalent behaviour. Very specific practices and uses have been reported, but it is the health communication needs that stand out and which should be addressed. It would be sad to report the same results for recommendations made by the current research, as for previous research efforts undertaken on the campus of the SU,

Stellenbosch University http://scholar.sun.ac.za

concerning the health of its student population. Cilliers *et al.* (2006:241) and Van Niekerk (2009:218) report that very little improvement has occurred at Stellenbosch University in this regard, emphasising a need for some form of intervention, assisting young adults with health communication efforts, improving their health information-seeking skills in an effort to address their health and lifestyle management skills.

5.3 LIMITATIONS

This study had several limitations that should be acknowledged:

- The results from this study represent research data for one target group of students from Stellenbosch University in the Western Cape Province of South Africa. This is only one of the research universities in the Western Cape and in South Africa, and data can therefore not be generalised to all groups of young adults as well as be representative for other university campuses in South Africa. Additional research that is designed more broadly will be needed to better understand the media use, media influence and media preferences in the health information-seeking realm, within other university settings and among other student groups.
- The use of cross-sectional survey data, obtained from a group of undergraduate university students as a research sample, is a limitation, as this group is not typical of the public at large.
- The research survey questionnaire was designed and constructed for the purpose of this study and sections thereof have not previously been validated. Continued use of this survey instrument, could in future, resolve this matter.
- The simplicity of the questions in the survey questionnaire may have reduced the bias of variability in interpretation.
- The use of the web-based survey method of data capturing relies on self-report and results may be prone to response bias.
- This study provides a unique window on some health information-seeking behaviours among young adults at a single point in 2011, and it is possible that such practices may vary over time. Along with some technological advances and public reliance on mass media versus other sources of information provision, single time-frame reporting of data could be restrictive.

Stellenbosch University http://scholar.sun.ac.za

5.4 RESEARCH CONTRIBUTION

Only a few internationally published studies have reported on the use of health communication in the media and its effects with regard to health issues and concerns among student populations. This study is the first research on this topic in South Africa. With the data collected and information provided through this study, more effective strategies could be designed to assist young adults in their quest to manage and improve their health and lifestyle, especially within a university environment. These strategies could provide the beginning of essential and more effective movements toward addressing the ongoing unique health needs reported among young adults.

This study contributes to the health communication knowledge in South Africa, which includes the health information-seeking construct (sources through which students find their health information and what their preferences of sources are; media and non-media).

Further relevance is also found from the information on what types of students are more likely to seek health information via different mass media, what the topics were that they mostly needed information on and how the act of information-seeking changed their health behaviour. Important health communication needs were identified as well as needs regarding health management on campus. This information could provide a basis for the design of useful opportunities in targeting messages to reach a population sub-group (students) within a specific environment.

Research such as this and with the data provided by this particular study undertaken, could document trends in mass media use for informing people on health issues.

5.5 CONCLUSION AND REMAINING CHALLENGES

This study supports other literature suggesting that future research designs need to seek and uncover novel findings in the area of health information-seeking and its outcomes. To meet the needs of young adults, age- and gender-appropriate health information should be made available through a variety of information channels. With continued research, understanding the media technology use of population sub-groups such as

Stellenbosch University http://scholar.sun.ac.za

young adults, technology based interventions can be designed to support, guide and assist with the management of healthy behaviours and improvement of lifestyle choices. This can be done while considering the cultural and background differences among such a population group of students. If designed well, multimedia technologies and interventions could provide these young adults with new avenues, more effective strategies and credible resources, to access age- and gender-appropriate health information. In this process it could encourage health-related conversations, spread health messages, and create more open communication avenues that can be used among a variety of role players within healthcare systems. To effectively change health behaviour among young adults, especially on a university campus, technology-based information provision must address the core needs, risk- and protective factors that are associated with desirable health outcomes for this group. The health messages and information provided should be tailored to meet the specific health needs and communication preferences of these users, and strive to foster frequent and repeated use of these more credible health information sources.

Further research is still needed, on a continuing base, in order to keep up to date with the media and technology advances and to monitor and identify the most appropriate technologies, health information-seeking patterns and preferences among population sub-groups. This information would be useful in the quest to inform intervention strategies and health management programmes, as well as the implementation and sustainability thereof in specific settings such as on a university campus. The findings reported here will be relevant to those administrators and health-care workers and professionals at the student health services, devising media content for health communication regarding health and lifestyle issues.

Although rarely employed, longitudinal research designs could be of value in tracking the health information-seeking behaviours of a single group of individuals over time, providing valuable information on the influence that the changing media landscape and technological advances of a "modern world" has on health information-seeking and health information-provision. Exploration of the relationship between information-seekers' pre-disposing characteristics, health information-seeking behaviours and associated outcomes, will continue to be worthwhile endeavours for future researchers. Empirically reported information on some other rarely reported measures of the health

Stellenbosch University http://scholar.sun.ac.za

information-seeking process are also needed. These could include establishing the reasons for health information-seeking, the intentions to seek health information and the barriers that are encountered to health information-seeking, which could provide for a greater depth in understanding the health-information-seeking process and its outcomes.

Individual differences in health information behaviour are important to further explore through research. It remains important to reveal the role of health information-seeking and its complimenting variables in the management of health among population groups. Health information-seeking does not occur in a social vacuum. The social milieus where individuals actively search for information are worthwhile to consider. A group such as a student population who uses the media for information provision would discuss and share what they have learned about health and initiate the social transmission of health information. This interpersonal communication, through all the avenues provided by the media and technology, today play an important role in the ways that information is sought and interpretations shared in a health behaviour-change process.

To compete for the young adults' time and attention, the design of multimedia health interventions or health management programmes will need to reflect this group's media behaviours and preferences.

Stellenbosch University http://scholar.sun.ac.za

LIST OF REFERENCES

ACHA: AMERICAN COLLEGE HEALTH ASSOCIATION. 2006. *American College Health Association: National college health assessment (ACHA-NCHA) web summary.* Retrieved 15 October 2011 from the World Wide Web: http://www.acha-ncha.org/data_highlights.html.2006.

ACHA-NCHA: American College Health Association - National College Health Assessment. 2009. Reference Group Executive Summary, Spring 2008. Baltimore: American College Health Association; 2008.

ACSM: American College of Sport Medicine. 2008. Physical Activity Guidelines Advisory Committee Report. Washington, DC: US. US Department of Health and Human Services, 2008.

Ajzen, I. 2002(a). Residual effects of past on later behaviour: habituation and reasoned action perspectives. *Personal and Psychological Review,* 6:107-122.

Ajzen, I. 2002(b). The Theory of Planned Behaviour/Reasoned Action. *Theorieënoverzicht TCW,* University of Twente. Retrieved 28 June 2011 from the World Wide Web: http://www.utwente.nl/cw/theorieenoverzicht/Theory%20clusters/Health%20Communication.

Anker, A.E.; Reinhart, A.M. & Feeley, T.H. 2011. Health information seeking: A review of measures and methods. *Patient Education and Counselling,* 82:346-354.

Babbie, E. & Mouton, J. 2009. *The practice of social research.* California:Wadsworth & Cape Town: Oxford Press Southern Africa (Pty) Ltd.

Beacom, A.M. & Newman, S.J. 2010. Communicating health information to disadvantaged populations. *Family and Community Health,* 33(2):152-162.

Beaudoin, C.E. & Hong, T. 2011. Health information-seeking, diet and physical activity: An empirical assessment by medium and critical demographics. *International Journal of Medical Informatics,* 80:586-595.

Stellenbosch University http://scholar.sun.ac.za

Becker, M.H. & Rosenstock, I.M. 1984. Compliance with medical advice. In Steptoe, A. & Mathews, A. (ed.). *Health Care and Human Behaviour.* London: Academic Press.

Bertrand, J.T. & Anhang, R. 2006. The effectiveness of mass media in changing HIV/AIDS-related behaviour among young people in developing countries. *World Health Organisation Technical Report Service,* 938:205-241; discussion: 317-341.

Boehm, S.; Selves, E.J.; Raleigh, E.; Ronis, D.; Butler, P.M. & Jacobs, M. 1993. College student's perception of vulnerability/susceptibility and desire for health information. *Patient Education and Counselling,* 21:77-87.

Bradley, P. & Herrin, J. 2004. Development and validation of an instrument to measure knowledge of evidence-based practice and searching skills. *Medicine Education Online,* 9(5):1-7.

Brashers, D.E.; Goldsmith, D.J. & Hsieh, E. 2002. Information seeking and avoiding in health contexts. *Human Communication Research,* 28:258-271.

Brodie, M.; Kjellson, N; Hoff, T. & Parker, M. 1999. Perceptions of Latinos, African Americans and Whites on media as health information source. *The Howard Journal of Communications,* 10:147-167.

Brown, J.D. & Knight, J.L. 2006. Media literacy has the potential to improve adolescents health. *Journal of Adolescent Health,* 39:459-460.

Brown, J.D. & Witherspoon, E.M. 2002. The mass media and American adolescents health. *Journal of Adolescent Health,* 31:153-170.

Callaghan, P.; Khalil, E. & Morres, I. 2010. A prospective evaluation of the Transtheoretical Model of Change applied to exercise in young people. *International Journal of Nursing Studies,* 47:3-12.

CCL: Canadian Council on Learning. 2007. *Health literacy in Canada: Initial results from the International Adult Literacy and Skills Survey 2007.* Canada: Ottowa, Canadian Council on Learning.

Stellenbosch University http://scholar.sun.ac.za

CDC: Centers for Disease Control and Prevention. 2010. Introducing the next generation of 5 a day. CDC, Atlanta: GA.

Carducci, A.; Alfani, S.; Sassi, M.; Cinini, A. & Calamusa, A. 2011. Mass media health information: Quantitative and qualitative analysis of daily press coverage and its relation with public perception. *Patient Education and Counselling,* 82:475-478.

Carlsson, M. 2000. Cancer patients seeking information from sources outside the health care system. *Support Care Centre,* 8:453-457.

Castrén, J.; Huttunen, T. & Kunttu, K. 2008. Users and non-users of web-based health advice service among Finnish university students – chronic conditions and self-reported health status. *BMC Medical Informatics and Decision Making,* 8(8):1472-6947.

Chaffee, S.H. & Schleuder, J. 1986. Measurement and effects of attention to media news. *Human Communication Research,* 13(1):76-107.

Cilliers, J.; Senekal, M. & Kunneke, E. 2006. The association between the body mass index of first year female university students and their weight-related perceptions and practices, psychological health, physical activity and other health indicators. *Public Health Nutrition,* 9(2): 234-243.

Cohen, D.; Scribner, R. & Farley, T. 2000. A structural model of health behaviour: A pragmatic approach to explain influence and influence health behaviours at population level. *Preventative Medicine,* 30:146-154.

Concise Oxford Dictionary of Current English. 1972. London: Oxford University Press.

Cotten, S.R. & Gupta, S.S. 2004. Characteristics of online and offline health information seekers and factors that discriminate between them. *Social Science & Medicine,* 59:1795-1806.

Dempsey, A.R.; Johnson, S.S. & Westhoff, C.L. 2011. Predicting oral contraceptive continuation using the Transtheoretical Model of Health Behaviour Change. *Perspectives on Sexual and Reproductive Health,* 43(1):23-29.

Dictionary.com. 2011. *Young adult*. Retrieved 29 June 2011 from the World Wide Web: Dictionary.com.

Dutta-Bergman, M.J. 2004(a). Primary sources of Health Information: Comparisons in the Domain of Health Attitudes, Health Cognitions and Health Behaviours. *Health Communication,* 16(3):273-278.

Dutta-Bergman, M.J. 2004(b). Complimentarity in consumption of news types across traditional and new media. *Journal of Broadcast Electronics,* 48:41-60.

Du Plooy, G.M. 1997. *Introduction to Communication: Course Book 2 – Communication Research.* Cape Town: Juta & Co. Ltd.

ERIC: Educational Resources Information Center. 2011. *Young adult*. *Thesaurus of Descriptors.* Westport: The Oryx Press. Retrieved 23 June 2011 from the World Wide Web: Hyperlink http://www.oryxpress.com.

Ek, S. & Heinström, J. 2011. Monitoring or avoiding health information – the relation to inner inclination and health status. *Health Information and Libraries Journal,* 28:200-209.

Escoffery, C.; Miner, K.R.; Adame, D.D.; Butler, S.; McCormick, L & Mendell, E. 2005. Internet use for health information among college students. *Journal of American College Health,* 53(4):183-188.

Eysenbach, G. & Kohler, C. 2002. How do consumers search for and appraise health information on the World Wide Web? Qualitative study using focus groups, usability tests and in-depth interviews. *British Medical Journal,* 9:573-577.

Fletcher, D. 2010. Facebook: Friends without borders. *Time*, May 2010:14-20.

Fletcher, P.C.; Bryden, P.J.; Schneider, M.A.; Dawson, K.A. & Vandermeer, A. 2007. Health issues and service utilization of university students: Experiences, practices & perceptions of students, staff and faculty. *College Student Journal,* 41(2):482-493.

Fourie, P.J. 2007. *Media Studies: Media History, Media and Society.* 2nd Edition. Cape Town: Juta & Co. Ltd.

Stellenbosch University http://scholar.sun.ac.za

Fox, S. & Rainie, L. 2008. *The online health care revolution: How the web helps Americans take better care of themselves.* Washington, DC: Pew Internet and American Life Project.

Franca, L.R.; Dautzenberg, B.; Falissard, B. & Reynaud, M. 2010. Peer substance use overestimation among French university students: a cross-sectional survey. *BMC Public Health,* 10: 169-179.

Garcia-Cosavalente, H.P.; Wood, L.E. & Obregon, R. 2010. Health information seeking behaviour among rural and urban Peruvians: variations in information resource access and preferences. *Information Development,* 26(1):37-45.

Glanz, K.; Rimer, B.K. & Lewis, F.M. 2002. *Health Behavior and Health Education.* (3rd ed.). San Francisco: Jossey-Bass.

Gollop, C. 1997. Health information-seeking behaviour and older African American women. *Bulletin of the Medical Library Association,* 85:141-146.

Gowen, L.K. 2011. Facts about young adults, mental health and online information seeking. Research and Training Center for Pathways to Positive Futures. Portland State University.

Graham, M.E. 2002. Health beliefs and self breast examination in black women. *Journal of Cultural Diversity,* 9(2):49-54.

Gray, N.J.; Klein, J.D.; Noyce, P.R.; Sesselberg, T.S. & Cantrill, J. 2005. Health information-seeking behaviour in adolescence: the place of the Internet. *Social Science Medicine,* 60:1467-1478.

Grilli, R.; Ramsay, C. & Minozzi, S. 2009. Mass media interventions: effects on health services utilisation. *Cochrane Database of Systematic Reviews,* 2002, Issue 1. Art. No.: CD000389. DOI: 10.1002/14651858.CD000389. The Cochrane Collaboration: John Wiley & Sons, Ltd.

Gustafson, E.; Dellve, L.; Edlund, M. & Hagberg, M. 2003. The use of information technology among young adults – experience, attitudes and health beliefs. *Applied Ergonomics,* 34:565-570.

Stellenbosch University http://scholar.sun.ac.za

Hay, J.; Coups, E.J.; Ford, J. & DiBonaventura, M. 2009. Exposure to mass media health information, skin cancer beliefs and sun protection behaviours in a United States probability sample. *Journal of the American Academy of Dermatology,* 61(5):783-792.

Heath, G.W. 2006. A behavioural approach to prescribing physical activity for health and fitness. In FRONTERA, W. R. *Exercise in Rehabilitation Medicine,* (2nd Edition), Champaign: Human Kinetics.

Heggen, A.E.; Valerio, M.A.; Thoar, G.G.; Rodgers, A.F.; King, J.D.; Kur, L.W.; Becknell, S. & Emerson, P.M. 2009. Examining Media Habits: implications for health promotion programs among the Toposa in Southern Sudan. *International Health,* 1:45-52.

Heckscher Foundation. 2011. United States of America: New York. Retrieved 14 October 2011 from the World Wide Web: Hyperlink http://www.heckscherfoundation.

Heuberger, R.A. & Ivanitskaya, L. 2011. Preferred sources of nutrition information: Contrasts between younger and older adults. *Journal of Intergenerational Relationships,* 9:176-190.

Hobbs, R. 1998. The seven great debates in the media literacy movement. *Journal of Communication,* 48:16-32.

Hochbaum, G.M. 1958. *Public Participation in Medical Screening Programs: A Socio-psychological Study* (Public Health Service Publication No. 572). Washington DC: Government Printing Office.

Hoeger, W.W.K. & Hoeger, S.A. 2009. *Lifetime Physical Fitness and Wellness.* Australia: Wadsworth Cengage Learning.

Hornik, R. 2002. *Public Health Communication: Evidence for Behaviour Change.* Hillsdale, New Jersey: Lawrence Earlbaum.

Hovell, M.F.; Mewborn, ; Randle, & Fowler-Johnson, 1985. Risk of excess weight gain in university women: A three-year community controlled analysis. *Addictive Behaviour,* 10:15-28.

Stellenbosch University http://scholar.sun.ac.za

Husén, T. & Postlethwaite, T.N. 1994. *The International Encyclopaedia of Education.* Oxford: Elsevier Science Ltd.

Ikoja-Odongo, J.R. & Ocholla, D.N. 2004. Information needs and information seeking behaviour by informal sector small businesses in Uganda. *LIBRI,* 54: 54-66.

Ivakhnenko, G.A. 2007. The health of college students in Moscow. *Russian Education and Society,* 49(5):19-25.

Ivanitskaya, L.; O'Boyle, I. & Casey, A. 2006. Health Information Literacy and Competencies of Information Age students: Results from the interactive online Research Readiness Self-Assessment (RRSA). *Journal of Medical Internet Research,* 8(2):1-16. (eHealth Journal, April-June 2006).

Jepson, R.G.; Harris, F.M.; Platt, S. & Tannahill, C. 2010. The effectiveness of interventions to change six health behaviours: a review of reviews. *BMC Public Health,* 10:538-552.

Johnson, S. 2010. In praise of oversharing. *Time,* May 31:21.

Johnson, J.D.E.; Case, D.O.; Andrews, J.; Allard, S.L. & Johnson, N.E. 2006. Fields and pathways: contrasting and complimentary views of information seeking. *Information Processing and Management,* 42:569-582.

Kamanzi, D. & Adejumo, O. 2005. Knowledge and practices of smoking among students in a South African university residence. *Africa Journal of Nursing and Midwifery,* 7(2):76-88.

Kreps, G.L. & Thornton, B.C. 1992. *Health Communication Theory & Practice.* Illinois: Waveland Press.

Kummervold, P.E.; Chronaki, C.E; Lausen, B.; Prokosch, H; Rasmussen, J.; Santana, S.; Staniszewski, A. & Wangberg, S. C. 2008. eHealth Trends in Europe 2005-2007: A Population-based survey. *Journal of Medical Internet Research,*10(4):42-50.

Kwan, M.Y.W.; Arbour-Nicitopoulos, K.P.; Lowe, D.; Taman, S. & Faulkner, G.E.J. 2010(a). Student reception, sources and believability of health-related information. *Journal of American College Health,* 58(6):555-562.

Stellenbosch University http://scholar.sun.ac.za

Kwan, M.Y.W.; Bray, S.R. & Ginis, K.A. 2010(b). Predicting physical activity of first-year university students: An application of the Theory of Planned Behaviour. *Journal of American College Health,* 58(1):45-52.

Leslie, E.; Sparling, P.B. & Owen, N. 2001. University campus settings and the promotion of physical activity in young adults: Lessons from research in Australia and the USA. *Health Education,* 101(3):116-125.

Lipnickey, S.C. 1986. The potential for formulating a healthy lifestyle: An assessment of health instruction and the university students. *Evaluation of the Health Professional,* 9:487-506.

Maibach, E.W.; Abroms, L. & Marosits, M. 2007. Communication and marketing as tools to cultivate the public's health: A proposed "peoples and places" framework. *BMC Public Health,* 7:88-102.

McQuail, D. 2009. *McQuail's Mass Communication Theory*. (4th ed.). London: SAGE Publications Ltd.

MD: Merriam-Webster's Medical Dictionary. 2007. Merriam-Webster, Inc. Retrieved 28 June 2011 from the World Wide Web: Dictionary.com website.

Miranda, G.F.; Vercellesi, L.; Pozzi, E. & Bruno, F. 2008. Improving health communication: Supporting the practice of health communication. *Health Information and Libraries Journal,* 26:39-46.

Mitchell, E. 1997. The changing epidemiology of SIDS following the national risk reduction campaigns. *Paediatric Pulmonology Supplement,* 16:117-119.

NASPE: National Association for Sport and Physical Education. 2007. *College/University physical activity instruction programs: A critical piece in the education of young adults.* Position Paper from NASPE, May 2007. RESTON, VA: Author.

NCI: National Cancer Institute. Health information national trends survey. 2011. Retrieved 20 May 2011 from the World Wide Web: http://hints.cancer.gov/.

Neuhauser, L. & Kreps, G.L. 2010. eHealth communication and behaviour change: promise and performance. *Social Semiotics,* 20(1):9-27.

Stellenbosch University http://scholar.sun.ac.za

Niederdeppe, J.; Hornik, R.C.; Kelly, B.J.; Frosch, D.L.; Romantan, A. & Stevens, R.S. 2007. Examining the dimensions of cancer-related information-seeking and scanning behaviour. *Health Communication,* 22:153-167.

Noar, S. 2006. A 10-year retrospective of research in health mass-media campaigns: Where do we go from here? *Journal of Health Communication,* 11:21-42.

Njoku, I. 2004. The information needs and information seeking behaviour of fisherman in Lagos State, Nigeria. *International Information and Library Review,* 36:297-307.

OED: Oxford English Dictionary. 2011. *Media*. London: Oxford University Press. Retrieved 28 June 2011 form the World Wide Web: Dictionary.com.

O'Shaughnessy, M. & Stadler, J. 2002. *Media and Society: An introduction.* (2nd ed.). Melbourne: Oxford University Press.

Pailliolet, A. & Mosenthal, P.B. (Eds.). 2001. *Reconceptualising literacy in the media age.* Oxford: Elsevier Science Ltd.

Patel, V.; Fisher, A.J.; Hetrick, S. & McGorry, P. 2007. Mental health of young people: a global public-health challenge. *The Lancet,* 369:1302-1312.

Percheski, C. & Hargittai, E. 2011. Health information-seeking in the Digital Age. *Journal of American College Health,* 59(5):379-386.

Potter, W.J. 2011. *Media Literacy* (5th ed.). California: SAGE Publications, Inc.

Reinfeld-Kirkman, N.; Kalucy, E. & Roeger, L. 2010. The relationship between self-reported health status and the increasing likelihood of South Australians seeking Internet health information. *Australian and New Zealand Journal of Public Health,* 34(4):422-426.

Rimer, B.K. & Glassman, B. 1999. Is there a use for tailored print communications in cancer risk communication? *Journal of the National Cancer Institute,* 25:140-148.

Rollnick, S.; Mason, P. & Butler, C. 1999. *Health Behaviour Change: A Guide for Practioners.* Edinburgh: Churchill Livingstone.

Stellenbosch University http://scholar.sun.ac.za

Rozmus, C.L.; Evans, R.E.; Wysochansky, M. & Mixon, D. 2005. An Analysis of Health Promotion and Risk Behaviors of Freshman College Students in a Rural Southern Setting. *Journal of Paediatric Nursing,* 20(1):25-33.

Rushing, S.C. & Stephens, D. 2011. Use of media technologies by native American teens and young adults in the Pacific Northwest: Exploring their utility for designing culturally appropriate technology-based health interventions. *Journal of Primary Prevention,* 32:135-145.

Schwitzer, G.; Mudur,G.; Henry, D.; Wilson, A.; Goozner, M.; Simbra, M.; Sweet, M. & Baverstock, K.A. 2005. What are the roles and responsibilities of the media in disseminating health information? *The PLoS Medicine Debate,* 2(7):0576-0582.

Sly, D.F.; Hopkins, R.S. & Trapido, E.R. 2001. Influence of a counter advertising media campaign on initiation of smoking: the Florida "truth" campaign. *American Journal of Public Health,* 91:233-238.

Smith, S. & Duman, M. 2009. The state of consumer health information: an overview. *Health Information and Libraries Journal,* 26:260-278.

Snyder, L. & Hamilton, M. 2002. A Meta-analysis of US health campaigns on behaviour: Emphasize enforcement, exposure and new information and beware the secular trend. In *Public Health Communication: Evidence for Behaviour Change.* Hillsdale, New Jersey: Lawrence Earlbaum.

Statsoft. 2011. *Statistica for Windows: General conventions and statistics.* Tilsa, OK: Statsoft.

Stamm, K.; Williams, J.W.; Noël, P.H. & Rubin, R. 2003. Helping journalists get it right. *Journal of General Internal Medicine,* 18:138-145.

Steptoe, A.; Wardle, J.; Cui, W.; Bellisle, F.; Zotti, A.; Baranyai, R. & Sanderman, R. 2002. Trends in smoking, diet, physical exercise and attitudes toward health in European University students from 13 countries, 1990-2000. *Preventative Medicine,* 35:97-104.

Stellenbosch University http://scholar.sun.ac.za

Stock, C.; Kücük, N.; Miseviciene, I.; Habil, D.; Guillén-Grima, F.; Petkeviciene, J.; Aguinaga-Ontoso, I. & Krämer, A. 2003. Differences in health complaints among university students from three European countries. *Preventative Medicine,* 37:535-543.

Suggs, S. 2006. A 10-year retrospective of research in new technologies for health communication. *Journal of Health Communication,* 2006:61-74.

Tallim, J. 2011. Media Awareness Network (MNet). Ottowa: Canada. Retrieved 21 June 2011 from the World Wide Web: http://www.mediaawarenessnetwork.

Taylor, J.P.; McCarthy, M.J.; Herbert, R.J. & Smith, P.B. 2009. A comprehensive profile of health risk behaviours among students at a small Canadian university. *College Student Journal,* 43(2):255-267.

Thaver, A.M. & Kamal, A. 2010. Impact of information sources on the knowledge of adolescents about hepatitis B. *Journal of the Pakistan Medical Association,* 60(12):1072-1075.

Thomas, R.K. 2006. *Health Communication.* New York: Springer Science.

Tian, Y. & Robinson, J.D. 2008. Incidental health information use and media complementarity: A comparison of senior and non-senior cancer patients. *Patient Education and Counselling,* 71:340-344.

Turow, J. 2009. *Media Today: An introduction to mass communication.* (3rd ed.). New York: Routledge.

Unalan, D.; Celikten, M.; Ozturk, A. & Senol, V. 2008. The relationship between vocational college students' smoking behaviour and self-actualisation, interpersonal support and stress management. *Social Behaviour and Personality,* 36(6):721-726.

Stellenbosch University http://scholar.sun.ac.za

Vader, A.M.; Walters, S.T.; Roudsari, B.R. & Nguyen, N. 2011, June. Where do College students get health information? Believability and use of health information services. *Health Promotion Practice,* DOI:10.1177/1524839910369995. Retrieved 21 June 2011 from the World Wide Web: http://hpp.sagepub.com/content/early/2011/01/29/1524839910369995.

Van de Vord, R. 2010. Distance students and online research: Promoting information literacy through media literacy. *Internet and Higher Education.* Retrieved 22 June 2011 from the World Wide Web: doi:10.1016/j.iheduc.2010.03.001.

VanKim, N.A.; Laska, M.N.; Ehlinger, E.; Lust, K. & Story, M. 2010. Understanding young adult physical activity, alcohol and tobacco use in community colleges and 4-year post secondary institutions: A cross-sectional analysis of epidemiological surveillance data. *BMC Public Health,* 10:208-215.

Van Leer, E.; Hapner, E.R. & Connor, N.P. 2008. Transtheoretical Model of Health Behaviour Change applied to Voice Therapy. *Journal of Voice,* 22(6):688-698.

Van Niekerk, E. 2009. Exercise preferences and expectations of young female students in a university setting. Unpublished Master of Sport Science thesis. Stellenbosch University, Stellenbosch, South Africa.

Vincent, W.J. 2005. *Statistics in Kinesiology,* Champaign: Human Kinetics.

Wallack, L. 2003. The role of mass media in creating social capital: A new direction for public health. In *Health and Social Justice: Politics, Ideology and Inequity in the Distribution of Disease.* San Francisco: Jossey-Bass.

Weaver, J.B.; Mays, D.; Weaver, S.S.; Hopkins, G.L.; Eroğlu, D. & Bernhardt, J.M. 2010. Health information-seeking behaviours, health indicators, and health risks. *American Journal of Public Health,* 100(8):1520-1525.

WED: World English Dictionary. 2011. *Audience*. Oakland: Lexico Publishing, LLC/IAC. Retrieved 23 June 2011 from the World Wide Web: Dictionary.com.

Whaley, M.H. (snr. Ed.) (2006). *ACSM's Guidelines for Exercise Testing and Prescription.* Philadelphia: Lippincott, Williams & Wilkins.

Stellenbosch University http://scholar.sun.ac.za

WHO: The World Health Organisation. 1998. *Health Promotion Glossary*. Geneva: WHO.

WHO: The World Health Organisation. 2011. *Life in the 21st Century: A vision for all.* Geneva: World Health Forum.

Wikipedia. 2011. *Media Literacy*. Retrieved 29 June 2011 from the World Wide Web: http://en.wikipedia.org.

Young Adult Development Project. 2008. Massachusetts Institute of Technology. Retrieved 29 June 2011 from the World Wide Web: http://hrweb.mit.edu/worklife/youngadult/about.html.

Stellenbosch University http://scholar.sun.ac.za

APPENDIX A

Approval document from the

Stellenbosch University Research Ethics Committee (REC)

Human Research: (Humanoria)

Stellenbosch University http://scholar.sun.ac.za

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot • your knowledge partner

Approved with Stipulations

New Application

22-Aug-2011
van Niekerk, Estelle E

Protocol #: HS585/2011

Title: **The contribution of media in the development of knowledge on health issues and lifestyle practices among young adults on a South African university campus**

Dear Estelle van Niekerk,

The **New Application** received on **18-Jul-2011**, was reviewed by Research Ethics Committee: Human Research (Humaniora) via Committee Review procedures on **28-Jul-2011**.

Please note the following information about your approved research protocol:

Protocol Approval Period: **28-Jul-2011 -27-Jul-2012**

Present Committee Members:
Fouche, Magdalena MG
Van Wyk, Berte B
De Villiers, Mare MRH
Hattingh, Johannes JP
Theron, Carl CC
Somhlaba, Ncebazakhe NZ
Viviers, Suzette S
Bitzer, Elias EM
Engelbrecht, Sidney SF
Van Zyl, Gerhard G
Van der Walt, Nicolene N

The Stipulations of your ethics approval are as follows:
1. Informed consent form (ICF): should be included in the online survey. The researcher is requested to submit an ICF.
2. Letter of institutional permission from Prof Jan Botha should be obtained and submitted to the REC.
3. The researcher is requested to supply an opt-out option at the bottom of each page of the onlinesurvey in order for participants to withdraw from the study at any given time while completing the online survey.
4. The researcher should make available an option for students who do not use media: Media Use (page 3 of the English survey).

Please remember to use your **protocol number** (**HS585/2011**) on any documents or correspondence withthe REC concerning your research protocol.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:
Please note a progress report should be submitted to the Committee before the year has expired.
The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number projects may be selected randomly for an external audit.
Translation of the consent document in the language applicable to the study participants should be submitted.

We wish you the best as you conduct your research.
If you have any questions or need further help, please contact the REC office at 0218089183.

Included Documents:
Questionnaire Afrikaans HS585/2011
Application Form HS585/2011
Questionnaire HS585/2011
Research Proposal HS585/2011

Sincerely,

Stellenbosch University http://scholar.sun.ac.za

Sidney Engelbrecht
REC Coordinator
Research Ethics Committee: Human Research (Humaniora)

Stellenbosch University http://scholar.sun.ac.za

APPENDIX B

Letter to experts: Review of research questionnaire

Stellenbosch University http://scholar.sun.ac.za

25 July 2011

Prof. R.J. Mash
Interdisciplinary Health Sciences: Division of Family Medicine
Faculty of Health Sciences
Stellenbosch University

Dear prof. Mash,

RESEARCH PROJECT:

THE CONTRIBUTION OF MEDIA IN THE DEVELOPMENT OF KNOWLEDGE ON HEALTH ISSUES AND LIFESTYLE PRACTICES AMONG YOUNG ADULTS ON A SOUTH AFRICAN UNIVERSITY CAMPUS

You have been selected as an "expert" to review a research questionnaire on the above topic.

Would you please be so kind as to read through this questionnaire and provide written feedback (on the questionnaire), on the relevance of the content, clarity of the questions and any other remarks or suggestions you would like to add, to assist the researcher.

The purpose of the research is to establish how information provided through the media and different media formats, contributed to the knowledge base of first year Stellenbosch University (SU) students, on health and lifestyle issues. The research will also try to establish what media formats students would prefer to use to access reliable health information on campus and what types of health information they would prefer.

This research will only commence after feedback from all experts on the questionnaire has been received, the questionnaire updated and approval from the Research Ethics Committee of the SU is received.

The above research project is part of the academic requirements for me. E van Niekerk, for the MPhil degree in Journalism, from the Department of Journalism at the Stellenbosch University.
Prof. George Claassen from this department will be the supervisor for the research project.

Would you be so kind as to send this questionnaire back through the SU internal post, to the Department of Journalism, by using the addressed envelope included in this package. Please try to provide feedback within a week and no later than 15 August 2011.

Thank you for your time and effort to contribute to this research project. I do appreciate it.

Kind regards

Estelle van Niekerk

Email: estellevanniekerk55@gmail.com
Tel no: 072 2529574

Prof. G. Claassen

Dept. of Journalism, Stellenbosch University

Stellenbosch University http://scholar.sun.ac.za

APPENDIX C

List of experts: Review of questionnaire

Stellenbosch University http://scholar.sun.ac.za

MPhil JOERNALISTIEK: NAVORSINGSVRAELYS - 2011: E VAN NIEKERK
MPhil JOURNALISM: RESEARCH QUESTIONNAIRE - 2011: E VAN NIEKERK

LYS VAN EKSPERTE VIR NAGAAN VAN VRAELYS
LIST OF EXPERTS FOR REVIEWING QUESTIONNAIRE

- **Prof. G. Claassen**
  Department of Journalism
  Faculty of Arts & Sciences
  Stellenbosch University
  Private Bag X1
  Matieland 7602

  Tel no: 021 808 3488
  Email: george.claassen@gmail.com

- **Prof. M. Kidd**
  Centre for Statistical Consultation (CSC)
  Stellenbosch University
  Private Bag X1
  Matieland 7602

  Office no: 2011
  Tel no: 021 8082561
  Email: mkidd@sun.ac.za

- **Dr. L. Botha**
  Department of Curriculum Studies
  Faculty of Education
  Stellenbosch University
  Private Bag X1
  Matieland 7602

  Tel no: 021 808 2293
  Email: lbot@sun.ac.za

- **Dr. M. Le Cordeur**
  Department of Curriculum Studies
  Faculty of Education
  Stellenbosch University
  Private Bag X1
  Matieland 7602

  Tel no: 021 808 2265
  Email: mlecorde@sun.ac.za

Stellenbosch University http://scholar.sun.ac.za

- **Dr. S.E. Carstens**
  Interdisciplinary Health Sciences: Department of Community Health
  Faculty of Health Sciences
  Stellenbosch University
  PO Box 19063
  Tygerberg 7505

  Tel no: 021 9389206
  Email: sec@sun.ac.za

- **Dr. De Wet Strauss**
  Department of Physiological Sciences
  Faculty of Arts & Sciences
  Stellenbosch University
  Private Bag X1
  Matieland 7602

  Office no: 2053
  Tel no: 021 8083156
  Email: jadws@sun.ac.za

- **Prof. M. Herselman**
  Attention: Dr. L. du Plessis
  Interdisciplinary Health Sciences: Department of Human Nutrition
  Faculty of Health Sciences
  Stellenbosch University
  PO Box 19063
  Tygerberg 7505

  Tel no: 021 9389175
  Email: lmdup@sun.ac.za

- **Prof. R.J. Mash**
  Interdisciplinary Health Sciences: Division of Family Medicine
  Faculty of Health Sciences
  Stellenbosch University
  PO Box 19063
  Tygerberg 7505

  Tel no: 021 9389170
  Email: rm@sun.ac.za

Stellenbosch University http://scholar.sun.ac.za

APPENDIX D

Research questionnaire:

Paper-version of the electronic questionnaire

Stellenbosch University http://scholar.sun.ac.za

ELECTRONIC SURVEY QUESTIONNAIRE: MPhil Journalism – E van Niekerk: 2011

- **Introductory message:**

Department of Journalism: Stellenbosch University
Survey: Health communication

Win a new "iPod-Touch" (8gb) (worth R2000) by completing this survey within the next 4 days!

INSTRUCTIONS:

- The questions in this survey are concerned with aspects of your **health** and **lifestyle**.
- The purpose of the survey is to establish how **information provided through the media** contributed to your knowledge regarding your health and lifestyle.
- Answer all questions as **honestly** and **completely** as possible.
- Provide one answer per question unless otherwise indicated at the particular question.

Thank you for your time to complete this survey.
We appreciate your participation!

- **Agreement and informed consent:**

I hereby agree that all information in this survey may be used for research purposes.

❍ Yes
❍ No

- **Email particulars**: Voluntary and enabled participants to win a participatory incentive prize.

- Email address (if you want to participate in the lucky draw to win a new iPod-touch!) ✐

- **SECTION A: Demographic Information**

  Please provide some personal information in the following questions for statistical purposes.

- **How old are you (age in years)?** ✐

- **What academic course at the Stellenbosch University (SU) have you enrolled for?** ✐

- **Where do you live? Home town or city?** ✐

- **In what region/province is your home town/city?** ✐

- **At what school did you matriculate?**
  (provide name of the school) ✐

- **What is your home language?** ✓

☐ Afrikaans

☐ English

☐ Xhosa

☐ Zulu

☐ Sotho

☐ German

☐ French

If "other" please specify: ✐

- **Gender?** ✓

☐ Male

☐ Female

- **Ethnicity**: **Race?**
(for statistical purposes only) ✐

- **Current residence?** ✓

☐ Parents

☐ SU student house

☐ Private student house

☐ Private student flat

Other, please specify: ✐

- **How tall are you?** (body length in meters?)

(please report as accurately as possible only providing numbers, e.g. 1.76) ✐
(do not add *m* after the numbers)

- **What is your current weight?** (how much do you weigh in kilograms?) ✐

(please report as accurately as possible only providing numbers, e.g. 62)
(do not add *kg* after the numbers)

Stellenbosch University http://scholar.sun.ac.za

- **SECTION B: Health status**

- Current Health Status

How would you describe your health status at the moment? ✓

☐ Excellent

☐ Very Good

☐ Good

☐ Reasonable

☐ Bad

☐ Very Bad

- Do you suffer from any of the following health conditions?
Indicate where applicable: ✓

☐ Asthma ☐ Cardiac problems ☐ Neurological (nervous system) problems

☐ Back (lower back) problems ☐ High cholesterol ☐ Recreational drug problems

☐ Diabetes ☐ High blood pressure ☐ Sinus problems

☐ Over weight ☐ Low blood pressure ☐ STD's (sexual transmitted disease)

☐ Under weight ☐ Musculo-skeletal problems ☐ HIV/AIDS?

☐ Stress/anxiety ☐ Hearing (ear) problems ☐ None

☐ Vision (eye) problems ☐ Metabolic/digestive problems

Other, please specify: ✐

- Do you use any medication? ✓

❍ Yes

❍ No

- For what health condition(s) do you use medication?

Name condition: ✐

Stellenbosch University http://scholar.sun.ac.za

- **What medication do you use for the above mentioned health conditions?**

Name of type of medication: ✐

- **Do you currently experience any anxiety or stress?** ✓

❍ Yes

❍ No

- **In your opinion, what causes this anxiety and stress?**

Indicate where applicable: ✓

☐ Academic pressure ☐ Financial pressure

☐ Time management ☐ Accommodation problems

☐ Health problems ☐ Family problems

☐ Personal problems ☐ Transport problems

☐ Adaptation to SU life - problems

Other, please specify: ✐

- **Do you receive any treatment or medication for the anxiety and stress?** ✓

❍ Yes

❍ No

- **What type of treatment/medication do you receive/use to manage this anxiety and stress?**

Indicate where applicable: ✓

☐ Psychotherapy

☐ Private consultation with a healthcare professional

☐ Medication

Other, please specify: ✐

- **Do you receive treatment or assistance from the SU for your anxiety/stress problems?** ✓

❍ Yes

❍ No

- **At what centre or where on the SU campus do you receive this treatment?**

Name place or centre: ✐

- **SECTION C: Lifestyle and health-risk factors**

  Please provide us with brief information on your lifestyle in the following questions.

- **Exercise: Do you exercise regularly?**
  (indicate whether you exercise at least 3x per week, for 30min or longer, uninterrupted) ✓

❍ **Yes**

❍ **No**

- **Recreation: Do you spend time to relax regularly?**
  (indicate whether you relax for at least 60min per day) ✓

❍ **Yes**

❍ **No**

- **Eating habits: Do you at least eat three nutritious meals a day?** ✓

❍ Yes

❍ No

- **Tobacco use: Do you currently smoke cigarettes?** ✓

❍ Yes

❍ No

- **How many cigarettes do you smoke a day?**
(indicate number of cigarettes per day) ✐

- **Alcohol use: Do you currently use alcoholic beverages?** ✓

❍ Yes

❍ No

- **How often do you use/drink alcohol?** ✓

☐ Every day

☐ Once a week

☐ Twice a week

Other, please specify: ✐

- **Drug use: Do you currently use any recreational drugs?** ✓

❍ Yes

❍ No

- **How often do you use recreational drugs?** ✓

☐ Once a day

☐ Once a week

☐ Twice a week

Other, please specify: ✐

- **SECTION D: Sources of health information-provision (non-media).**

  Please provide us briefly with information on the sources/ways through which you have obtained information on health and lifestyle issues during the past year.

- Have you asked/looked for health information during the last year? ✓

❍ Yes

❍ No

- What was the primary reason why you asked/looked for health information during the past year? ✓

☐ Manage health

☐ Diagnose health problem

☐ Identify symptoms of health condition

☐ Info on disease prevention

☐ For general health knowledge

☐ For wellness info

☐ For health and wellness info

Other, please specify: ✐

- What was the primary type/topic of health information that you asked about or looked for during the past year?

☐ General health info ☐ Lifestyle management

☐ Fitness ☐ Specific health condition info

☐ Nutrition ☐ Diet/weight loss

☐ Recreation ☐ Stress management

Other, please specify: ✐

- **After seeking health information and finding this information, did your health behaviour change?**

❍ Yes

❍ No

- **Health information source: Home/family**

From whom did you most often learn something about health during the past year? ✓

☐ Mother ☐ Father ☐ Guardian

☐ Grandmother ☐ Grandfather ☐ Aunt

☐ Brother ☐ Sister ☐ Uncle

Other, please specify: ✐

- **Health information source: School**

From whom or where did you most often receive information on health during the last year at school? ✓

☐ In class? ☐ Specific teacher?

☐ Specific subject? ☐ Guest speaker at school?

Other, please specify: ✐

- **Health information source: Friends/Peers**

From which friend did you most often obtain health information during the past year? ✓

☐ Personal friend: Female

☐ Personal friend: Male

☐ Friend at work

Other, please specify: ✐

- **Health information source: Healthcare professional**

Who did you most often consult to provide you with information on health? ✓

☐ General practioner: Private doctor ☐ Biokineticist

☐ Doctor: Specialist ☐ Nurse

☐ Physiotherapist

Other, please specify: ✐

- **Health information source: Stellenbosch University**

From whom or where did you most often obtain information on health at the SU in the past year? ✓

☐ In class ☐ Specific lecturer

☐ Student Health Services ☐ Gymnasium: Instructor

☐ Sport coach ☐ SU Library

☐ SU Intranet health information

Other, please specify: ✐

- **SECTION E: Sources of health information-provision (media).**

  Please provide us briefly with information about the <u>media sources</u> you used to <u>obtain health information</u> during the last year.

- Which <u>media</u> sources do you use to obtain health information? ✓

☐ Magazines ☐ Internet

☐ Newspaper ☐ Internet via cell phone

☐ Radio ☐ Books

☐ Television ☐ None

Other, please specify: ✐

- Health information source - Printed Media: Magazine(s)

Which magazines do you read most often? ✓

Name of the magazine?	How regularly do you read this magazine?		Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information in this magazine?	Do you read the paper copy of this magazine or the Internet online version?
✓ Most often read:	✓ Every day		❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable	❍ Paper copy
✓ 2nd most often read:	✓ Every week		❍ No	❑ Poor	❍ Internet copy
	✓ Every month				

- Have you ever obtained health information through your parent's Medical Aid Fund magazine?

❍ Yes

❍ No

- Which Medical Aid Fund magazine did you read? ✐

(name of the Medical Aid)

- Health information source - Printed Media: Newspapers

Which newspaper do you read most often? ✓

Name of the newspaper?	How regularly do you read this newspaper?		Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information in this newspaper?	Do you read the paper copy of this newspaper or the Internet online version?
✓ Most often read:	✓ Every day		❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable	❍ Paper copy
✓ 2nd most often read:	✓ Every week		❍ No	❑ Poor	❍ Internet copy
	✓ Every month				

- Health information source – Radio

What radio station do you most often listen to? ✓

Name of the Radio station?	How regularly do you listen to this radio station?		Do you use this radio station for health information?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information on this radio station?
✓ Most often listened to:	✓ Every day		❍ Yes	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ 2nd most often listened to:	✓ Every week		❍ No	❍ No	
	✓ Every month				

- Health information source - Television:

Which TV channels and programmes do you most often use or look at? ✓

TV channel name? (e.g. DSTV 101; TV 2 et.)	What programme on this TV channel do you use for health info? Name?	How regularly do you view this TV programme?		Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information on this TV programme?
✓ TV channel most used:		✓ Every day		❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ TV channel 2nd most used:		✓ Every week		❍ No	
		✓ Every month			

- Health information source - Internet:

Which Internet web pages do you most often use for health information? ✓

Internet web page name?	How regularly do you use this web page?		Do you use this web page for health information?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of the health information on this Web page?
✓ Most often used:	✓ Every day		❍ Yes	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ 2nd most often used:	✓ Every week		❍ No	❍ No	
	✓ Every month				

- Health information source - Access to Internet through cell phone:
Which Internet function on your cell phone do you most often use to obtain health information? ✓

Cell phone function name?	How regularly do you use this cell phone function?		Do you use this cell phone function for health information?	Do you think that the health information through this source is credible?	According to your opinion, what is the quality of health information through this function?
✓ Cell phone function most often used:	✓ Every day		❍ Yes	❍ Yes	❑ Excellent ❑ Very good ❑ Good ❑ Reasonable ❑ Poor
✓ 2nd most often used:	✓ Every week		❍ No	❍ No	
	✓ Every month				

- Are there any <u>other media sources</u> that you access for health information? ✓

☐ Books

☐ Posters

☐ Brochures

Other, please specify: ✐

- What OTHER source(s), <u>not media</u>, do you use to obtain health information that you have not indicated in the questions on the previous pages? ✐

- **SECTION F: Health information needs**
  Please provide us with information on your <u>health information needs</u>.

- What health topic/condition do you most often <u>need</u> information on? ✐

- What health topic/condition do you 2nd most seek information on? ✐

- Please indicate how you would prefer to receive information on health and lifestyle issues on the Stellenbosch University campus.

Preference of source? ✓

☐ SU Magazine: *Matieland*

☐ SU Newspaper: *Die Matie*

☐ Specific SU health brochure

☐ Posters on campus

☐ Specific SU health web page

☐ SU Campus radio

☐ SU Intranet health information

☐ Departmental

Other, please specify: ✐

- Which media source/format is most accessible to you? ✓
(through which to regularly receive information on health and lifestyle issues on the SU campus)

☐ Internet?

☐ SU Intranet?

☐ Email?

☐ SMS to cell phone?

Other, please specify: ✐

- Do you need assistance to improve/manage your health and lifestyle issues? ✓

❍ Yes

❍ No

- What health communication needs do you have? ✐
(on the SU campus)

Stellenbosch University http://scholar.sun.ac.za

- Provide at least one health communication need that you have, that would help you with finding credible information on health, or assist you with managing your health. ✐

Thank you for your cooperation with this survey!

Good luck with the lucky draw to win that new iPod-touch!