

**SOCIAL CAPITAL AND WATERPIPE SMOKING IN A
SOUTH AFRICAN UNIVERSITY**

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DECLARATION

I declare that this thesis is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Arts in Psychology (by coursework and research report) in the Department of Psychology, School of Human and Community Development, at the University of the Witwatersrand. It has not been submitted for any other degree or examination at this, or any other institution.

Signed:

Date:

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CHAPTER 1: LITERATURE REVIEW

1.1 Introduction

The current chapter reviews the body of academic literature that framed this thesis, key research gaps, justification for the research, as well as the aims and objectives. The aim of this research was to examine what cognitive and structural bonding social capital factors contributed towards the understanding of WPS behaviors. The rationale behind this research was to draw attention to the importance of linking mainstream health psychology approaches (a field within psychology that understands the psychological influences of how people maintain healthy behaviors, through the testing of theories) and social factors, in designing more holistic interventions, for reducing WPS.

1.2 Waterpipe Smoking Prevalence

Currently, tobacco smoking is one of the most important, preventable causes of death in the world (Klein, 2008). Tobacco use kills millions of people each year and is a global epidemic, resulting in 4.9 million deaths a year globally and may increase to 10 million within the next 20 years (Smith-Simone, Maziak, Ward, & Eissenberg, 2008). One method of smoking tobacco is the centuries old waterpipe (also known as hookah, shisha, nargile and hubble-bubble), originating from the Eastern Mediterranean Region (EMR). One hundred million people smoke waterpipe daily, worldwide (Gatrad, 2007). This practice is surpassing cigarette smoking amongst youngsters (18-24 years) globally as well. (Maziak, Ward, Soweid, & Eissenberg, 2004). According to waterpipe smokers, the media, social trends and the introduction of maassel (a specially prepared tobacco with a sweetened taste and aromatic

smoke that is used in WPS) the waterpipe's popularity has increased tremendously (Rastam, Ward, Eissenberg, & Maziak, 2004).

Current waterpipe smoking prevalence of some adolescent populations is approximately 30% in Beirut, Lebanon; 33% in Karachi, Pakistan and 10-20% in the U.S.(Maziak, Eissenberg, & Ward, 2005). Studies have also reported a 50% lifetime prevalence rate and 20% past 30 day use rate among first year college students at Virginia Commonwealth University (Maziak et al., 2004). Another survey conducted in Beirut universities showed that 21.1% of students reported current waterpipe use in 2001 whereby there was an increased to 28.3% in 2002 (Hammal, Mock, Ward, Eissenberg, & Maziak, 2008). In Israel, a study of 388 Jewish, middle and high school students found that 41% smoked waterpipe and 33% smoked every weekend. In the USA, dozens of hookah bars have opened which are becoming increasingly popular among college students and young adults. This shows how far this method of tobacco use has spread (Knishkowsky & Amitai, 2005). Only a few studies have investigated tobacco smoking in the form of a waterpipe. Those few studies that have been conducted are mostly from the EMR and broad generalization cannot be made to South Africa.

The available data for South African WPS trends have showed that physiological nicotine dependence was the highest scoring category across gender, with males displaying more physiological nicotine dependence than females. Specifically, these individuals smoked more than seven times per week (Desai, 2012). A 2008 study conducted among undergraduate students from two South African medical schools reported prevalence rates of 43.5% and 18.6% of “ever” and “current” waterpipe use respectively (Naidoo, 2013). Furthermore, a

2009 study conducted at a secondary school serving a disadvantaged community, close to central Johannesburg, demonstrated an astonishingly high prevalence rate of 60% of WPS. The study also revealed substantial rates of concurrent marijuana and alcohol use during WPS sessions (15% and 10% respectively) (Combrink et al., 2010). These studies demonstrate that WPS is popular in South Africa, especially among university students, and is a behaviour that has warranted further investigation.

1.3 Adverse Health Effects of WPS

Evidence has shown that waterpipe smoking has adverse health effects including pulmonary disease, lung cancer and coronary heart disease (Hammal et al., 2008). High concentrations of nicotine, carbon monoxide and heavy metals have been found in waterpipe smoke (Knishkowsky & Amitai, 2005). Nicotine is a stimulant drug. It affects mood and performance, reducing hunger and increases the metabolism (Salameh, Waked, & Aoun, 2008).

The amount of harmful, addictive elements in waterpipe smoke is influenced by puffing patterns, waterpipe size, and the type of tobacco and charcoal used. A recent review showed that the absorption rate of nicotine from daily use of waterpipe is equivalent to smoking 10 cigarettes a day (Eissenberg & Shihadeh, 2009). Comparisons of nicotine intake from a 45 - minute smoking session of flavoured tobacco, with four eight puff smoking bouts of cigarettes in a 2.5h period, showed that plasma nicotine levels were about three times higher for waterpipe (60ng/ml), compared to cigarettes (16.33ng/ml). The waterpipe smoke served as a nicotine delivery system, by demonstrating elevated heart rate changes and urinary cotinine level; a useful marker for nicotine absorption (Neergaard, Singh, Job, &

Montgomery, 2007). A small waterpipe can produce substantially greater carbon monoxide (CO) levels (1.36%-1.46 %), whereas a large waterpipe produces comparable CO levels relative to a cigarette, (0.38%-0.41%) which is harmful to the central nervous system. Thus, waterpipe use can deliver the same or greater doses of the dependence producing drug, nicotine (Maziak et al., 2005).

Dependence or addiction is defined as a behaviour over which an individual has impaired control, with harmful consequences (West, 2001). Individuals recognize it as a behaviour that is harmful, but cannot stop engaging in the behaviour when they try to do so. Dependence involves initial exposure to a stimulus, followed by behaviours seeking to repeat the experience. Dependence becomes established after repeating the behaviour stimulus sequence a number of times. The severity of dependence may change over time (West, 2001). Nicotine doses in the body result in chemical addiction of WPS, even with intermittent use (Maziak, 2008).

Furthermore, adolescents often mix the tobacco with marijuana or replace the water in the bowl with alcoholic beverages, further implicating their health (Knishkowsky & Amitai, 2005). In addition, infectious diseases are encountered from pipe sharing (Hammal et al., 2008). Nearby non-smokers are also exposed to the toxins found in waterpipe smoke through a considerable amount of particles, known as a cardio-respiratory hazard, which is emitted by waterpipe smokers into the surrounding air (Hammal et al., 2008). Due to these adverse health effects, as well as the few studies investigating WPS in a South African context, more studies are also needed to identify social factors contributing towards the adverse health

effects in WPS, among South African university students, i as this may be of use in designing future policy and cessation programs to successfully reduce WPS.

1.4 The Social Dimensions of Health

Mainstream health psychology is a field within psychology that understands the psychological influences on how people maintain healthy behaviours, why they become ill and their response to becoming ill. These issues are studied and interventions are developed to help people stay healthy and prevent illness in the future (Prilleltensky & Prilleltensky, 2003). Mainstream health psychology relies heavily on the development and testing of theories that predict health and illness related behavior, and to control such behavior through the application of such theories (Crossley, 2008). This follows the underlying approach of the biopsychosocial model, which assumes “reciprocal and dynamic interactions between different levels of the human system, from the biochemical, to the psychological, to the sociocultural” (Crossley, 2008, P.g 22). However, according to critical health psychologists, mainstream health psychology has inadequately adopted the biopsychosocial model. Here, the biological, social and psychological factors are presented as multiple, hypothetical concepts that are fragmented, rather than integrated (Campbell, 2001). For instance, theories tend to describe predictive factors of smoking contributing towards behavior with an assumption that these dimensions of behavior may be quantified using questionnaire measures such as "perceived susceptibility", "perceived costs" and "perceived barriers" (Crossley, 2008). These theories encourage reductionism by objectifying people's experiences into simplistic coding devices that facilitate the testing of particular theories or models (Crossley, 2008).

Mainstream health psychology may treat complex behaviour, such as WPS, as technical problems that can be managed by various forms of intervention and control (Crossley, 2008). One way in which this was done was by targeting beliefs that predict unhealthy behaviours and attempting to change them accordingly (Crossley, 2008). For instance, in South Africa, only prevalence, knowledge and attitudes of WPS among secondary school students by Combrink et al (2010), and university students by Naidoo (2013) have been investigated in an attempt to change these behaviours through individualistic interventions. These studies further recommended that education on the negative health effects will reduce WPS, as many people are under the misconception that the waterpipe is not harmful (Combrink et al., 2010), (Naidoo, 2013). Furthermore, interventions that used health psychology theories through mass media programs, campaigns and medical interventions, that continue to be used to influence cigarette smoking cessation, is being used on WPS cessation, to influence smoking related knowledge, attitudes and behaviour, to inform the public of the negative health consequences of WPS, and to try to encourage individual behaviour change through quitting (Campbell, 2001). This may be done through posters, warning labels and influencing tobacco policy to ban WPS in public areas. This approach in health psychology is far too simplistic and fails to take adequate account of the complexity of WPS dynamics and dimensions of the human experience, and are also guilty in objectifying and depersonalising participants (Crossley, 2008). Although there is some truth in these narrowly designed interventions, there is data that suggest that this is far from the whole story.

Empirical findings suggest that aspects of the social environment may have an effect on health. The social environment affects individual health related behavior through a number of causal mechanisms, by shaping norms, enforcing social control, constraining individual

choice and enabling people to participate in particular behaviors (Lindström, 2008).

According to the Hammal study (2008), participants claimed that “it is very difficult to stay away from the ambiance of nargile (waterpipe). Whenever you go for entertainment, there is always a nargile” (Maziak, Ward & Eissenberg, 2007, Pg. 7). According to Maziak (2005), participants also claimed that “it went from something fun I did each week, to each day, to 5 - 6 times a day. It became an addiction, or, I think I’m addicted to the social aspect of hookah” (Maziak, Ward & Eissenberg, 2007, Pg. 8). These claims made by participants emphasise the social aspects of WPS that may facilitate adverse health outcomes. Furthermore, according to Naidoo (2013), 54% of student participants at WITS University, South Africa claim to smoke for the social ambiance. People have been shown to continue to use the waterpipe, despite the knowledge of the harmful effects, and are unable to quit, despite wanting to (Salameh et al., 2008). Although a majority of individuals in the study by Ward et al. (2005) had stated that quitting is not difficult, 59% of individuals who attempted to quit in the past year, for an average duration of three months, had resumed (Lindström, 2008). These results may have implications for smoking prevention and cessation efforts that only focus on individual behavioural change, through mass media campaigns on the harmful effects of WPS. For instance, although the Medical Research Council has made an effort to educate students of the adverse health effects of WPS by placing posters around university campuses from 2010 (Appendix E), the social aspect of WPS may still trump the messages of WPS being harmful to them, with students claiming to smoke to socialise, despite knowledge of the harmful effects (Carey, 2009). Thus, the limited performance of medical interventions and media campaigns in smoking cessation (Szreter & Woolcock, 2004), has raised questions about the structure and networks of groups, and the behavior of people within that structure, as being more interesting (Lomas, 1998). Everyday experiences such as the way WPS groups are organised, the extent to which interaction is encouraged in a group and the degree to

which one associates with each other, is an important determinant of WPS health. It will be useful to investigate how students perceive such WPS interventions that they may have encountered, and examine the implications of such interventions in reducing WPS in these participants, by considering a more social approach in reducing WPS.

Social capital provides a shift away from the individualistic health related information approach (such as posters, school lessons and television programs), and moves towards a community development perspective which involves the representation and participation of local people in health promotional interventions (Hyypä, 2010). This is a useful concept as it is related to other disciplines such as social psychology and mainstream health psychology.

It can be argued that many prominent theories of behaviour within health psychology research include a social influence (DiClemente, Crosby, & Kegler, 2009). Some of these prominent theories include social network theory, primary socialisation theory, social cognitive theory, theory of reasoned action, social norms theory, the health belief model, protection motivation theory, the theory of reasoned action and the health action processes approach (Crossley, 2008). All these theories have the underlying commonality that behaviour is the product of information obtained from social interactions, interpreted differently by the individual and other parties involved (DiClemente et al., 2009). For instance, social network theory states that a person's position within a social system has an influence on behaviour. The theory of reasoned action use social networks to refer to the social embeddedness of individuals as well as the benefits or costs of social support (Poortinga, 2006). While these theories may demonstrate the importance of social networks

on people's health, they are limited in investigating the contextual effects on behaviour (Poortinga, 2006). Moreover, the psycho-social measures are also seen as a property of individuals. Little is known about the psycho-social and community level processes of WPS, whereby participation and representation may have negative health consequences (Campbell, 2001). Thus, there is a large investment committed to alleviating ill health through individual intervention, ignoring the everyday experiences (common smoking groups and areas, usual smoking habits etc.) and interaction of waterpipe smokers, which may influence health outcomes (Lomas, 1998). Although, it can be seen that social influence is a recognised concern for many popular psycho-social and health psychology theories, there still remains a need to better integrate these psycho-social theories to a broader understanding of social networks and contexts (DiClemente et al., 2009). Individual level prevention efforts need to be complemented with community level approaches (Dutta-Bergman, 2004). Even though many established theories emphasise the impact of social networks and social norms as driving behaviour, social capital researchers argue that health behaviours may be determined by "collectively negotiated identities rather than by individual rational choice" (Dutta – Bergman, 2004, P3). The communitarian perspective offers a shift from traditional individual based approaches, whereby emphasises is placed on the power of the community in development and maintenance of certain behaviours, best expressed through the concept of social capital (Dutta-Bergman, 2004).

This multidisciplinary concept of social capital serves as a bridging tool in the field of health promotion, especially in our understanding of the link between health and social relations (Muntaner, Lynch, & Smith, 2000). Social capital provides a useful starting point for conceptualising those features of WPS groups that most likely facilitate negative health behaviour and outcomes. WPS is typically practiced in groups and is the centre of social

activity, bringing people to sit together and spend time in conversation (Knishkowsky & Amitai, 2005). It creates a sense of togetherness (Hammal et al., 2008). Most waterpipe smokers started smoking as part of socializing and continue to find waterpipe smoking a social activity (Hammal et al., 2008). Cues specific to waterpipe use such as the social ambience and smell can also enforce the social and behavioural component of dependence, facilitating smokers into a deeper addiction. Thus, the social environment may affect individual health related behavior through a number of causal mechanisms, by shaping norms, including or not excluding people to participate in particular behaviors and enforcing social control (Lindström, 2008). Social capital, therefore, may be a useful way to understand how these connections may be linked to population health, especially in WPS (Muntaner et al., 2000).

1.5 Social Capital: Definition and Dimensions

Public health and epidemiological research practice needs to move forward, through realizing the importance of social systems to health, through the use of social capital from a community perspective, to inform future interventions of reducing WPS (Lomas, 1998).

People are not unrelated individuals whose patterns of connections can be ignored (Muntaner et al., 2000). In the case of health behavior, identifying the nature and extent of the impact of social relationships is veritable across the social sciences (Szreter & Woolcock, 2004).

Although the use of social capital is recent, recognizing social systems as integral to health is not new to public health (Lomas, 1998). Social scientists such as sociologists and community psychologists have long been studying ideas related to social capital, such as social cohesion and community (Edmondson, 2003). Thus, social capital is a useful concept, which emphasizes an important set of resources, inherent in relationships, networks, associations

and norms, all of which have been lacking priority in the health literature (Szreter & Woolcock, 2004).

There are a number of definitions of social capital theory that draw upon the seminal work of Putnam (1995) and Coleman (1986). While there is no standard definition of social capital, this paper uses the term social capital to refer to the degree of connectedness and the quality of social relations that may affect health outcomes, in this case, adverse health effects in waterpipe smoking social groups (Harpham, Grant, & Thomas, 2002). Social capital is a complex, latent construct with several dimensions. The social group can take the form of an organization or small community, in this case, social groups within the university (Daniel Kim, 2008). The structural component includes the extent and intensity of associational links or activity. Norms, values and exclusion are more cognitive aspects of social capital (Edmondson, 2003). At the simplest level, these components can be characterized as what people "do" (structural) and what people feel (cognitive) in terms of social relations (Harpham et al., 2002). Furthermore, maintaining already established relationships that are similar by WPS is known as the process of bonding. Bonding is inward looking and involves relationships and networks of trust and reciprocity that reinforce bonds and connections within groups (Reynolds, 2007). Like most scholars, Putnam (1995) defines social capital as a combination of these aspects (Whitley, 2008). Although social capital is characterized by other concepts such as bridging social capital (heterogeneous and outward looking connections that include people across social groups), norms of reciprocity, participation and trust (Harpham et al., 2002), this study will focus on bonding in structural and cognitive aspects of social capital. Bonding social capital within communities may be a health liability. Bonding is based on networks that are similar to each other in terms of certain characteristics

and demographic factors such as ethnicity, education and/ or age (Ferlander, 2007). The way in which these homogenous networks exert negative health outcomes is of particular interest in this study. Bridging social capital may be based on heterogenous and outward – looking connections that focus on people across social groups (Ferlander, 2007). heterogeneity. Thus, understanding the characteristics of bonding social capital in WPS is the first step in reducing WPS. The key to improving health may lie in one's ability to access resources outside their immediate social milieu such as bridging social capital. Bridging social capital should be the focus of future studies (Kawachi, Subramanian, & Kim, 2008).

Social capital has been recognised as an important determinant of health but has not been thoroughly investigated in WPS. According to a study conducted in Syria, waterpipe smokers reported that their smoking restricted their friendships such that relationships with friends, who were not waterpipe smokers, grew worse. Waterpipe smokers found themselves socializing almost exclusively with other waterpipe smokers (Hammal et al., 2008), which have indicated some form of structural bonding social capital, but has not been thoroughly and formally investigated. Previous studies have shown that, by association with friends who smoke, attitudes favourable to smoking are acquired and the individuals who were non-smokers selected friends who do not smoke (Ennett & Bauman, 1993). Previous research has also indicated that adolescents (14-20 years) are under social pressure to take up tobacco smoking (Stewart-Knox et al., 2005). However, the role of peer influence alone in smoking initiation has been exaggerated in these studies and as a result peer pressure has been the focus of cessation programs (Arnett, 2007). For instance, in a study by Stewart-Knox et al (2005), qualitative interviews were conducted on children (aged 11 - 12 years) in economically deprived areas of Northern Ireland with follow up studies on two occasions, 3

years later. This data suggested that, although peers influenced smoking uptake, this does not occur through direct persuasion, but rather as an individual striving to conform to the normative behaviour of which they identify with. In - group favouritism was shown in the sharing of cigarettes with negative stereotyping of the out- group members (Stewart-Knox et al., 2005). Studies like this ignore the range of cognitive factors that lead to selection and exclusion within the smoking context that may allow for initiation and / or prolonged WPS (Arnett, 2007). Thus, the social is important in improving health that cannot be reduced to a simplistic, individualistic approach to health research and intervention (Szreter & Woolcock, 2004). By drawing on the theory advanced by R. Putnam (2001) the structural and cognitive aspects of social capital is useful to explore how elements of social capital contribute to adverse health effects in WPS (Reynolds, 2007). In doing so, these factors may assist in designing more holistic interventions that take into consideration social factors within the social environment, for reducing WPS among university students.

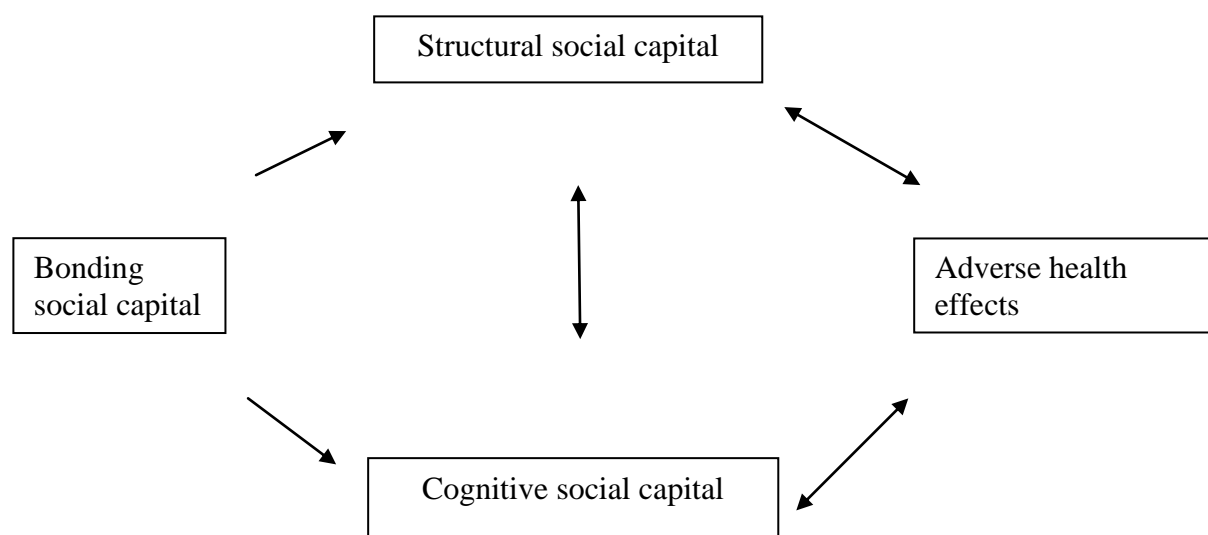


Figure 1: Conceptual model of social capital theory (Harpham, 2008)

Arguments could be made that narrowly designed media campaigns targeting individual behaviour change, have some influence in informing people of the dangers of WPS, but future interventions need to consider a more holistic view of group and social influences of WPS among university students. The social experience of participants smoking the waterpipe may have a bearing on health and wellbeing, where social aspects trump the adverse health effects of WPS, learned through educational interventions (Whitley, 2008). This study will further explore how these interventions have been received by participants that continue to smoke the waterpipe, despite knowledge of the harmful effects of WPS from educational interventions that they have been exposed to. This will help understand the need to explore a more holistic perspective of WPS, by incorporating social factors at the communitarian level into future interventions. Although studies claim that WPS is a social event, there have been no studies to date that explores the link between health and the social experience of participants, smoking a waterpipe.

Social capital in the context of health can help to critically explore the sources of connections among different individuals and groups i.e. what determines who gets connected to whom and to understand how the health relevant aspects of the connections among individuals and groups can be changed to improve public health (Muntaner et al., 2000). The concept of the social is used not to downplay the importance of biology or the physical environment (both of which are also shaped by the social), but to raise the importance of social relations and social structures. These collective social practices reflect a way of understanding behaviours as regular, social behaviours, common to groups at the intersection of the social structure that manifest in specific places, which is accounted for in this study, addressing the gaps of previous studies (Poland et al., 2006). This study will explore factors of cognitive and structural bonding social capital through the way social relations and

interactions influence permeability and mobility of WPS groups. These include hygiene, social setting and group homogeneity, playing a salient role in influencing group behavior by becoming closed and inward looking, reinforcing bonding structural social capital. Cognitive social capital may reinforce bonding amongst WPS groups as seen through the use of exclusion criteria in the form of gender and contact, influencing health outcomes of individuals involved in exercising social control within these groups (see Figure 1). Thus, the idea of the way individuals and groups are connected can be important for public health and addresses important gaps within the current policy and intervention literature, providing a more holistic perspective of WPS behavior by intersecting health issues with important social factors (Muntaner et al., 2000). The implication would then be for health promoters to invest more energy into developing programs and policies that take into consideration the social dimensions within the broader context of the university, that social capital may have to offer.

Although the progress in public health studies analysing social capital as a health determinant has been popular, Macinko and Starfield (2001), only found 10 articles on social capital within the public health literature in 2001 (Macinko & Starfield, 2001). Kawachi, Kim, Coutts and Subramanian (2004), found 50 papers published on this subject a year later (Kawachi, Kim, Coutts, & Subramanian, 2004; Muntaner et al., 2000). In the first six years of the 21st century, a ratio of less than two qualitative peer reviewed papers on social capital and any aspect of human health have been published annually, compared to the large amount of quantitative studies on the same topic (Whitley, 2008). **Furthermore, none have focused on the downside of social capital.** One of the criticisms pointing to social capital interventions is that most research has focused on the benefits of social capital. Social capital can also result in negative health effects. Most studies would assume that if a community had

poor outcomes such as crime and disease, it was due to the lack of social capital (Field, 2005). However, Portes (1998) drew attention to the downside of social capital which included “exclusion of outsiders, excess claims on group members, restrictions on individual freedom and downward levelling norms” (Portes 1998, Pg. 15). Evidence for this can be found in studies exploring the spread of disease such as HIV and drug use through patterns of restricted social networks (Field, 2005). These negative aspects have hardly been explored even in quantitative literature (Whitley, 2008). Qualitative research addresses these gaps by providing a more in-depth and rich account of the negative consequences of social capital amongst WPS groups. Thus, qualitative research could be the way to address some of the gaps in the literature, and may illuminate the applicability of negative social capital in relation to WPS.

Social scientists have long relied on qualitative research to investigate the social world (Harpham, 2008). One of the strengths of qualitative research, especially when applied to social capital is that it allows for a richer, and more in-depth, empirical exploration of concepts and ideas. Unlike most quantitative research, qualitative methods rely on open rather than closed questioning. Resulting data is a product of an interaction between the researcher and participants (Whitley, 2008). In a Canadian study by Roskin and Aveyard (2009), waterpipe smokers were interviewed in waterpipe cafes and their homes and found that waterpipe smokers smoke to socialise without any considerations of the dangers of WPS. Another similar qualitative study conducted by Nakkash, Khalil, and Afifi (2011) in Lebanon, used focus groups to identify factors contributing to WPS, such as availability and affordability. Although these studies have used qualitative methods to investigate factors

associated with WPS in more detail, no studies to date investigated social capital and WPS using qualitative methods.

1.6 Summary of Gaps in the Literature

Although current WPS interventions have had some effect in creating awareness of the dangers of WPS, these interventions alone may have not succeeded in reducing WPS amongst university students, despite them knowing the harmful effects of WPS. Since WPS is seen to be a social event, a more holistic perspective of reducing WPS through the investigation of social factors in WPS, need to be incorporated into future interventions, such as emphasizing the influence of the collective group and social connections on individual smoking behavior. Thus, this study will address important gaps in the current literature of WPS interventions, where individualistic interventions that participants have encountered on WPS will be explored, followed by addressing the gaps within these interventions by providing a more holistic view of WPS through the use of social capital. One of the early criticisms of the public health literature on social capital has been that researchers have tended to neglect its damaging effects, which this study investigates further, filling the gaps in the social capital literature.

Both aspects (cognitive and structural) of social capital can help identify the specific components of social capital that contribute towards the understanding of how social capital can harm the health of individuals (Daniel Kim, 2008). In order to capture a more comprehensive understanding of social capital in a university context, qualitative methods seem particularly well suited. Qualitative methods can answer questions of social capital in

this context, which are exploratory in nature and that deal with understanding the social processes, traditions of social groups and the value of WPS from the youth's (18 – 25 years old) perspective (Abraído-Lanza, Armbrister, Flórez, & Aguirre, 2006). Furthermore, WPS studies have mainly been conducted in the US and Middle East, such as Syria, Lebanon, Israel and Pakistan. These studies have mostly focused on prevalence and attitudes of WPS (Maziak, 2008). Thus, broad generalization about the EMR and the US population cannot be made to South Africa. This study will contribute towards the understanding of the social dimensions of WPS in a South African population, which is useful for intervention development.

1.7 Research Questions

1. How has exposure to previous WPS campaigns and/or interventions influenced participant's behavior towards WPS?
2. What is the association between structural factors and bonding social capital among university students in relation to WPS?
3. What is the association between cognitive factors and bonding social capital among university students in relation to WPS?

CHAPTER 2: METHODOLOGY

2.1 Introduction

The current chapter presents the qualitative methodology used to answer the research questions; presented at the end of chapter one. Furthermore, this chapter explains the procedures used for obtaining and analysing the data used in this study. The results will be of importance in public health and smoking cessation programs, while paying attention to student's use of social capital in WPS, relating to negative health outcomes in a university setting.

2.2 Study Design

This study followed a qualitative, cross - sectional design. One of the strengths of qualitative research, especially when applied to social capital, is that it allows for a richer and more in-depth, empirical exploration of concepts and ideas (Whitley, 2008). This research used the abductive approach, in which the data and theoretical ideas were played off against each other in a creative and developmental process. This paradigm lies between inductive and deductive reasoning. Abductive reasoning draws out abstractions from the data to formulate a new hypothesis that can be tested against other observations and cases (Atkinson, Delamont, & Coffey, 2004). Thus, the data was interpreted and reinterpreted in light of an emerging theory and as a result, themes were developed (Blaikie, 2009).

2.3 Sample and Sampling

This study's sample consisted of youth (aged, 18 – 25 years, N= 19) at a South African University in Gauteng, South Africa. This target population was chosen due to the increasing popularity of WPS, seen in university campuses. This study consisted of students across disciplines at the post graduate and undergraduate level at the University of Witwatersrand (WITS), in South Africa.

Purposeful, criterion sampling was the strategy used for purposefully selecting information rich cases for focus groups (Patton, 1990). Criterion sampling aimed to study all cases that met an important predetermined criterion. The important predetermined criterion for this study was: a group of students seen to be gathered around, and smoking a waterpipe upon observation, outdoors in the recreational areas of WITS University. This criterion was selected as WPS groups are usually seen to be smoking in a circle with the waterpipe placed at the centre of the group, allowing for easy sharing of the pipe. WPS at this university usually took place outdoors in the smoking sections of the university, such as on the lawns outside lecture rooms or recreational places on concrete tables placed outdoors throughout the university. The WPS groups at the campus are also usually seen to be smoking between lectures, during lunch breaks as well as after lectures, in the afternoons. Although there were many WPS groups seen around the campus, three focus groups were selected by the researcher. These focus groups were selected as they were seen to meet the important predetermined criterion mentioned above, as well as seen to be sitting in a structured (a circle around the waterpipe), peaceful, outdoor setting with more than three participants in a group. According to the researcher, these groups were also seen to best represent the smoking groups generally seen at the university.

Since WPS is usually seen to be a group activity, with people seen to be sitting around a waterpipe, focus groups allowed for a quick and convenient way to collect data from several people at the same time, as they were. In focus groups, people were also encouraged to talk to one another by exchanging and commenting on each other's points of view and experiences, rather than the researcher asking for a person to respond to a question individually in turn (Kitzinger, 1995). Three focus groups, which consisted of 4-8 participants in each, were conducted. More specifically, focus group one consisted of seven participants (1 Indian female and 5 Indian Males and 1 Asian male), of which one male Indian participant left the focus group and two more Indian males joined towards the end. These participants were all in first year studying the same course. Focus group two consisted of six participants (2 Indian females and 3 males of which two were White and one was Indian. All participants in this focus group studied the same course at first year level, except for one participant who was studying a different course to the rest of the participants at second year level. Focus group three consisted of six participants (2 Indian females and 4 Indian males), studying different courses at the university at various levels. The students in this group have been attending university for at least two years, and at most six years. There was also evidence of homogeneity in the groups, for people to capitalise on their shared experiences. Friends related to each other's comments to incidences in their shared, daily lives and the data was a product of the researcher and participants. However, less control was placed on these groups as participants would enter and exit the groups freely.

2.4 Focus Group Interview Guide

Focus groups were conducted with the students using a semi - structured focus group guide (See appendix C). Questions were compiled by the researcher, based on the literature and

social capital theory constructs, in order to obtain the focus group interview data. Examples of questions include: In which groups do you smoke waterpipe the most and why? How often do you smoke waterpipe in these groups? Do you think waterpipe smoking is harmful? In what ways do you think it is/ is not harmful?

2.5 Procedure

Ethics clearance and permission was obtained from the necessary authorities at WITS University (explained in more detail below). Students who appeared to meet the predetermined criterion of smoking a waterpipe upon observation, in the outdoor recreational places of the campus, were approached by the researcher. The researcher asked these potential participants if they would be interested in participating in this study. The participants received a participant information sheet (Appendix A), which expanded on the nature and purpose of the research and requested their participation, informed the participants of their rights regarding participation, including the voluntary nature thereof, their right to withdraw, the duration of the interview (approximately 30 minutes) and the lack of benefit available to either the researcher or the participant. The participants were then provided with an informed consent form (Appendix B), and were asked to provide the researcher with their written informed consent to participate and their written consent to having the interviews audio recorded. With permission through a consent form, the focus group commenced immediately, outdoors, and was facilitated by myself, the researcher. All focus groups took place on the lawns outside lecture halls, where these focus groups were found to be smoking a waterpipe. All groups were found in the same location, but spread out. The focus group commenced outdoors, immediately upon agreement, for convenience, for both participants and the researcher.

The interviewer used a semi - structured interview schedule to guide the interview (Appendix C). Participants typically sat on the grass. A voice recorder was placed in a position where the participants could be recorded clearly. Any of the participant responses that needed clarification or elaboration were addressed through probing or follow up questions such as: “Can you tell me more?”, “What do you mean?”, “I don’t understand?” Once the interview was done, participants were thanked for their time and participation. They were also reminded that they could have access to the full report or a one page summary of the results of the study, should they request it from the researcher via email. The participants were also given cupcakes upon completion of the interview. Each focus group was approximately 30 - 40 minutes and was audio recorded. All focus group interviews were conducted in one day, on a Friday afternoon, as waterpipe smoking seemed to be most popular at this time of day, upon observation.

On completion of the interviews, the audio-recordings were transcribed in full in a word document by the researcher using a modified Jeffersonian method (Potter & Wetherell, 1987). Focus groups were audio recorded, allowing the researcher to refer back to study conversations and observable activities that were possibly missed, as well as focus on the actual details which occurred. This is an advantage because audio records can be replayed; transcriptions were improved and remain to be a public record for the scientific community. The interview transcripts were assigned an identity code based on the interview number (one, two or three). The transcripts yielded a total of 69 pages. Research participants were assigned a random alphabetical letter to ensure confidentiality. Moreover, the participant’s names were not mentioned in the research report or transcripts, as they were replaced by pseudonyms. The audio recordings and transcripts were shared between the researcher and supervisor. The

audio recordings were also saved on password guarded MP3 files on the researcher's private computer. The data were analysed using a thematic content analysis (Patton, 1990), before being presented in the research report. The transcripts were read to identify key themes and were highlighted and assigned a descriptive code. The highlighted extracts were then analysed for patterns and explanations on how the descriptive codes fit together.

2.6 Data Analysis

The data was analysed using thematic content analysis (Patton, 1990). Thematic content analysis is a method for identifying, analysing and reporting patterns (themes) in the data (Patton, 1990). The recorded focus group interviews were transcribed and analysed through the development and assignment of themes, where the researcher looked for patterns and contrasts (Green, 2006). Initial codes were generated from the data. The codes were combined to form themes. The themes were refined and named. Owing to the focus of this research, the researcher analyzed the data with a focused coding method, searching for the specific problem areas identified by the literature as well as other themes as they occurred (Green, 2006).

2.7 Ethical Considerations

Participation was granted by the Human Research Ethics Committee of WITS University to carry out the study (Protocol number: MPSYCH/13/012 IH; Appendix D). Individuals were invited to participate in the study. Informed consent (Appendix B) was requested from all participants taking part in the study and participant information sheets (Appendix A) were also given to them. All potential participants were informed of the nature of the study and the

purpose of the research. In addition, participants were provided with the researchers email address if any questions regarding the research arose. The Quit Line number was also provided to participants on the information sheets.

The participant information sheet provided information regarding the nature of the study and information relevant to participation. Participants received an explanation of all ethical considerations at the beginning of the study by the researcher verbally. The study was on voluntary basis, whereby all individuals had the right to withdraw at any time during the data collection procedure. All results and conclusions were made on the group of individuals as a whole, which did not reveal any information regarding a particular person. Confidentiality was considered to a certain extent, where all collected data was only viewed by the researcher and supervisor. Once the data had been analysed, the results were made available to the Department of Psychology at WITS University and was available to participants in summary form, should they request it. Participants who participated in focus groups received a small compensation in the form of refreshments. No deception occurred as all participants were informed of the aims, rationale and nature of the study and were promised feedback on the study. No risk or harm to participation occurred. Original raw data was kept safely and has become the property of WITS University, which will only be destroyed after a time frame of five years.

CHAPTER 3: RESULTS

3.1 Introduction

This study is set out to support the argument that health perceptions alone, through individualist interventions, may not aid in the reduction of WPS, but rather, social capital can provide a more holistic view on WPS behavior, which is much more useful when designing future interventions to reduce WPS. Furthermore, this qualitative study attempted to understand WPS by investigating cognitive and structural factors influencing bonding social capital in WPS groups that may attribute to adverse health effects. Some of these factors may be the permeability and mobility of people between WPS groups in different social and recreational settings and conditions of exclusion such as gender and contact that WPS groups may have adopted. The following transcription symbols are defined as:

A-S	Participant e.g. Participant A or Participant S
R	Interviewer
=	interrupted speech by another speaker
(0.8)	pause duration such as 0.8 second pause
(())	inaudible speech

3.2 Exposure to previous WPS campaigns and/ or interventions that may have influenced participant's behavior towards WPS

Although there have been numerous health interventions to reduce WPS such as education in schools, posters at the university (Appendix E) and TV shows, people continue to smoke the waterpipe despite knowledge of the dangers of WPS smoking, as evident in extracts 1 – 3

below. What was particularly interesting in these extracts was the way in which people accounted for their smoking behaviour by comparing it to cigarette smoking in extract 1 and 2. In extract 3, participants recognized WPS as problematic in young children only, not in themselves. Thus, health campaigns and interventions on the dangers of WPS alone can be useful, but is limited as people continue to smoke the waterpipe, despite knowledge of the harmful effects of WPS as analysed in the following extracts.

Extract 1

R: You're asthmatic. Um so when you first started smoking the pipe, what information did you know about the hubble?

L: I think we had quite a lot of information cause our school we always had to write like essays and there were comprehensions about the dangers of hookah smoking and that sort of stuff.

G: We knew everything ya. But we really didn't see it as being bad. Bad is cigarettes. That's what we thought of as being bad.

L: Ya

G: I mean this was just a social event that you just go around and =

H: = but doesn't the same go for social smoking like cigarettes

G: Mmm probably

L: Ya but for me like a cigarette when you do it it like burns and it's intense. It's not enjoyable

G: Ya

H: And then you know cause you've tried it

L: Ya this tastes nice like you know you put a flavor in. Tastes nice

G: [(nervous laugh)] ya actually it does taste nice. It's like fun. Okay not fun but it's like a chilled thing to do

K: It's like something to do when you just have nothing else to do

L: Get stimulated

G: Ya like when you don't know what to do

J: Man there's too much admin putting this thing together

[(all laugh)]

The previous question in the interview directed to the group was, “How old were you when you started smoking the pipe.” The participants claimed to have smoked at the age of sixteen, at a house party, except for participant H, who claimed that the only reason that he did not smoke was due to his asthma. Accounts made by participants in a follow up question, “so when you first started smoking the pipe, what information did you know about the Hubble”? is presented in the above extract.

Participant H, the non - smoker of the group, claimed that he does not smoke due to his asthma, but still spends time with people who do smoke the waterpipe. This may be due to the close connections he has with these people that extended beyond waterpipe smoking. Due to his “friends” smoking, this may suggest that this participant would have engaged in WPS, had he not had a personal health condition that may be aggravated by smoking, perhaps being influenced by the close connections he has with people who do smoke the waterpipe.

Participant G and L, who came from the same school, positioned themselves together when answering the interviewer’s question. The interviewer’s question assumed that one’s knowledge and information of WPS has changed over time, from when they first started smoking. The interviewer also assumed that the participants have encountered some form of intervention on the dangers of WPS during their time smoking, in order to assess the effectiveness of these interventions. Participant L answered the question by stating that his school was responsible for educating students about the harmful effects of WPS, through essays and comprehensions. These two participants want to appear as if they are not completely ignorant of the “dangers of hookah smoking”. Although these educational interventions have been successful in informing students of the dangers of WPS, this may

have also stimulated one's curiosity and may have led to experimentation with WPS, for one's own experience. There is evidence that the participants actual experience of smoking a waterpipe was not bad, compared to their experience with cigarette smoking through their claims of the waterpipe being tasty and fun as opposed to cigarette smoking being intense and burning.

In extract 1, despite the education provided through interventions placed in school on the dangers of WPS, Participant G justified her smoking behaviour by comparing WPS to something stigmatized and bad, such as cigarette smoking. She further associated WPS to being a social event, an activity that occurred 'randomly' and 'innocently', versus cigarette smoking to be an individual, planned addiction. However, Participant H, who did not participate in any form of smoking, challenged G by placing social cigarette and social WPS, in the same category. There was discomfort in this statement in G's silent agreement, "mmm probably." Unhappy about this conclusion, participant L categorized cigarette smoking as unpleasant, versus WPS being pleasant and tasty. G, in agreement, and nervous laughter, stated that it's not as bad as cigarette smoking as evident in her claim, "it's a chilled thing to do." WPS was further categorized as a random activity used to pass time, not used to relieved one's addiction. Participant L and G agreed with participant K. Participant J remarked that, although it may be a "chilled thing to do," it requires a lot of effort or "admin" in putting waterpipe together. The participants seemed to agree, through their laughter at J's statement, making it seem that participants understood the contradiction, in that, although participants who smoke claimed that WPS occurs randomly, to pass the time, and not an addiction, participants still go through a lot of effort in planning and putting the waterpipe together for the group to smoke. Thus, this extract demonstrated how the social aspects of WPS, such as it

being “fun”, “a chilled thing to do” and a “social event”, were emphasised by these participants as a motivation to smoking the waterpipe over the dangers of WPS. It was evident that the social experience of participants smoking the waterpipe may have a bearing on their smoking habits, where social aspects trump the adverse health effects of WPS learned through educational interventions.

Extract 2

- R: I think we may have answered the question but did you trust what was being said about the pipe by other people? And why or why not?
- K: (0.8) When people tell me it's bad and it will give me lung cancer I think they being a bit (0.2)
- L: Over dramatic
- K: Ya. Like when people say negative things about it, I don't believe it.
- R: Why don't you believe it?
- K: Cause I've be been smoking for so long and me and my cousins we've been smoking for years and nothing's ever ever happened to us we don't become addicted um
- L: And I mean your parents don't have health problems and they've been smoking
- K: Ya so it's I don't know. And people say it's worse than cigarettes and stuff and I know people who have been smoking cigarettes for like two years and they already like deteriorating and coughing and getting addicted and all these things
- J: Deteriorating [(laughs)]
- R: And and you guys?
- L: I mean in our brains I think we process that we knew the facts essentially from like all the work we did but not that I didn't trust or believe it, but that, I don't know. It just never clicked
- G: It's more like everyone was doing it as well and like nothing happened to them so nothing will happen to us. It was like that
- L: Ya

This extract comes from participants still accounting for what information they knew about WPS, from the same focus group depicted in extract 1. Participant K trusted that the waterpipe was not harmful, due to it being introduced to her by family upon initiation. A TV campaign on WPS had later changed her family's perception of WPS, but she still claimed to continue smoking the waterpipe, despite knowing the bad effects of WPS. The interviewer moved onto the next question as stated in the above extract, "...did you trust what was being said about the pipe by other people?" which was further analysed.

The interviewer's question assumed that the information received about WPS was attributed to other people, influencing each other to smoke the waterpipe. Participant K tended to ignore the information about adverse health effects of WPS, and justified her reason for ignoring this information as being over dramatic or exaggerated. It seemed that participant K tended to attribute negative messages of WPS to those condemning WPS, such as the negative health effects etc. By ignoring those messages and labelling them as negative, participant K may only select message about WPS that are in line to her current practice of WPS, and not allowing those perceived "negative" message to enter the group and affect her smoking habits. Thus, there was evidence that WPS groups may block out information about WPS that may be "negative" to them, and groups may not be well informed of the health issues associated with WPS. They also selected messages to believe based on personal experience. Participant K does this by stating that she and her cousins have smoked for years. This was contradictory to her conclusion of not being addicted or not perceiving her smoking habits as addiction. She also associated herself with her group of cousins, to avoid individual accounts of addicted smoking behaviour. Participant L mentions K's parents for smoking the waterpipe, again shifting away from taking responsibility of her own smoking behaviour.

Parents support WPS behaviour versus cigarette smoking. Parents, who are older and perhaps been smoking for longer, were claimed to not have health problems either, making WPS more acceptable and viewed as a positive activity, containing no side effects. Although information about the dangers of WPS were claimed as being over dramatic, participant K goes on to contrast WPS to cigarette smoking by over exaggerating the negative side effects of cigarette smoking. She stated that the side effects were evident in a short space of time such as deterioration, addiction and coughing, in order for WPS to appear as less harming and good. This over exaggeration of cigarette smoking is confirmed by Participant J, laughing at K's claim of cigarette smoking being deteriorating.

Participant L claimed that, although interventions were placed in school, this did not prevent him from smoking the waterpipe. G justifies this by stating that "everyone was doing it", making the waterpipe seem acceptable and realistic in their side effects upon the participant's own observation, attributing interventions placed in schools seem dramatic and unrealistic. Participants in the group have the same views about WPS, in that the negative effects were over exaggerate. Since the participants were sceptical that WPS is harmful, WPS groups were not well informed of the adverse health effects of WPS due to the members blocking out this information. Thus, interventions need to target collective influences on WPS, rather than individual behavioural change. These tightly closed groups may collectively influence the individual to initiate and further prolong smoking, ignoring the adverse health effects of WPS. These collective influences could be useful in designing future intervention, which had been previously ignored.

Extract 3

- N: It's not taboo but it's like they want the government is trying to get people to cut down cause there's posters all over Wits
- P: They sell these things at Spar bra what do you mean
- N: No but like they they've regulated it a lot like when they saw it was a problem amongst the youth
- S: Ya I mean like on Carte Blanch
- N: Ya exactly
- S: When they had that hookah thing =
- P: = They trying to get people to stop
- S: My parents were going wild after that
- P: You see we told our parents that it's okay but then =
- Q: = ya
- R: What exactly was on Carte Blanch
- Q: It was long ago they just spoke about the smoke content being worse than cigarettes
- O: Ya that's when people found out that actually hookah is bad
- N: You see because it became an epidemic. Like when we started
- M: Oh I remember in school they one going on about it as well
- Q: Because these like thirteen year olds smoking now and twelve year olds smoking so it became =
- S: = ya ya
- N: And their parents are like encouraging them whereas our parents don't encourage us they accept it
- Q: Ya
- N: Their parents will take them to buy their first hookah. Like I've seen it personally
- R: So do you think it is a problem
- P: Ya it is a problem
- Q: Ya
- N: Ya it is. At that age it is a problem. You can't be doing that to a twelve year old
- S: It's so subjective though like what you do is it a problem?
- P: Yasis you too clever for us huh

M: It is subjective I think
S: It is subjective because it's not a problem for us but it's a problem if a twelve year old is smoking
O: Ya it's like the age limit on drinking you know if a twelve year old is drinking it's bad
S: Ya
N: You see some parents will feel okay to give their children alcohol where some wont
R: And um well what is the legal age for smoking
N: Sixteen
P: Sixteen ya

This extract was taken from the context of how information about the waterpipe has changed over time. The question directed to the group was “did you trust what was being said about hookah smoking by other people like the bad things and the good things and why?”

Participant N previously claimed that South Africa experiences more taboo with WPS, compared to Saudi Arabia. The comparison to Saudi Arabia may be due to the waterpipe originating from Middle Eastern countries, and it being part of their culture for many years, making it more acceptable to smoke there. In contrast, South Africa had only recently been introduced to WPS, making this activity seem unknown and dangerous, with the government regulating it. Although there have been interventions put in place through posters at the university, P recognizes that WPS products are still easily available in supermarkets as well, such as Spar, which is contradictory to the government regulating smoking behaviour. Furthermore, the way in which WPS started to be regulated, followed a TV show call Carte Blanch, which demonstrated the dangers of WPS. Participants recognized this as an intervention to reduce WPS. The intervention was successful in also educating parents about

the dangerous effects of WPS, as accounted for in Participant S's claim, "my parents were going wild after that." Parents reacted in this way, as this was contradictory to their belief of WPS, as not being harmful for their children.

What was most interesting was the way in which this intervention was received by these waterpipe smokers, and how they accounted for their smoking, despite knowing the dangers of WPS from Carte Blanch. Although the participants realised the rise of the waterpipe's popularity, the participants shifted the problem of WPS to "thirteen" and "twelve year olds smoking." Participants also attributed problematic smoking behaviour to parents. These people also have their parents encouraging children to smoke versus the participant's parents that don't encourage it, but also do not prohibit WPS by accepting it. These accounts have been made by participants, to make their WPS behaviour seem unproblematic, by comparing themselves to smoking children who have bad parents, versus them being portrayed as good, mature people who have good, understanding parents.

Thus, participant N only recognized WPS as being problematic in young children, evident in participant N's account, "At that age it's a problem." Although participant S realized the conflict of WPS in children versus university students, presented in the interviewers question, "so do you think it's a problem," evident in his claim, "it's so subjective though." Participant S stated that it's not a problem for them, but it is a problem for children, perhaps due to their age and maturity which again, placed these participants as good people as opposed to twelve year olds smoking the waterpipe, in the presence of the interviewer. The analogy of under aged drinking, provided by Participant Q, made the participants of the group, again seem like

mature and responsible people. Participant S builds onto Q's claim, attributing under aged drinking to parents. The interviewer recognized this and asked the group what the legal age for smoking was, where all participants incorrectly stated that it was sixteen, considering that most participants mentioned that they were sixteen when they first started smoking the waterpipe, earlier in the interview. The legal age for smoking in South Africa is eighteen (Department of South Africa, 2014). Thus, narrowly designed media campaigns targeting individual behavioural change, have some influence in informing people of the dangers of WPS, but future interventions need to consider a more holistic view of group and social influences among university students receiving information to reduce WPS.

3.3 The Association between Structural Factors and Bonding Social Capital in Relation to WPS

Structural bonding social capital in the context of health can help critically explore the nature of connections among different individuals and groups i.e. what determines who gets connected to whom and to understand how the health relevant aspects of the connections among individuals and groups, can be changed to improve public health (Lundborg, 2005). This may be achieved by exploring the mobility and permeability of WPS groups. Aspects of structural bonding social capital are demonstrated in extracts 4 -7. These extracts show interesting features of the way in which the participants attribute their frequent smoking behavior to groups collectively influencing each other to smoke, as well as how factors of hygiene, homogenous group composition and the type of organizational setting, play a role in the way social relations and interactions influence permeability and mobility of WPS groups. More specifically, extract 4 highlights WPS group mobility and permeability within different social settings. Extract 5 emphasizes how hygiene and context play a salient role in

influencing group behavior. In extract 6 & 7, homogeneity is emphasized in influencing mobility and permeability and the way people move between homogenous WPS groups, within different social settings.

Extract 4

- L: No like I've smoked hookah pipe before at like only at a house party or something like that but I don't plan it in my day when I'm going to smoke
- R: Okay um so today was a day that you just happen to smoke together, In which groups do you smoke pipe the most?
- K: I think I would have to say =
- R: = and where and when?
- J: Socials
- K: Ya like whenever we go out especially when I go out with my cousins cause we all the same age like if we go to each other's houses or if we go to Lusito land or if we go to a club even we always smoke pipe before or while we there
- R: Hmm so campus and social settings
- K: Ya
- R: And you guys? Is it the same?
- H: I don't smoke
- R: You don't smoke?
- J: [(Laughs)] observers
- L: Um I don't smoke that often like if there's one around I will but not really that much. Dani Input?
- G: Same here no only if it's around

Before this extract, participants were responding to how often they see each other and smoke waterpipe together. The participants clarified how they were connected to each other first. Participants K, H, L and G study the same course. Participants G and L previously went to

the same school and Participant J studies a different course, but makes contact with Participant K at least once a week. They further claimed that they gathered for the first time as a group, to smoke a waterpipe. Participant K stated that she smokes at the other recreational sites of the campus, such as the Matrix, almost every day. She claimed to have been smoking since she was in Grade eight, and was something that came naturally. Building onto Participant K's accounts, the interviewer asked the group to comment on whether they started smoking recently, or for a long period of time, which was where this extract came from, and participant L began to respond.

The interviewer's question attributed to WPS groups and does not single out a particular person for taking responsibility in their own smoking behavior. The group members categorized themselves as frequent, intermittent and non- smokers. This was evident in the way in which participants accounted for their smoking behavior. Participant L emphasized that smoking the waterpipe occurred haphazardly, by only smoking "if there's one around" and, "not planning it in my day". Participant G also positioned herself with L. These accounts may indicate that these participants may want to come across as people who are not addicted to WPS in the presence of the interviewer. Participant H also singled himself out from the group of smokers, to appear as being different and the type of person who is good, as opposed to the frequent waterpipe smokers in the group. A small amount of tension seemed to arise as Participant H singled himself out of the group, seen through Participant J's remark of "observers", making the non- smokers of the group seem like the type of people who may observe or judge the smokers of the group.

The way in which frequent smoking behavior was described, was carefully accounted for by Participant K and J, where J's claim of socials were further unpacked by K. K stated that, socials in the WPS context were recreational locations such as a "club", "Lusito land" or "each other's houses" and smoking "especially with "my cousins" suggested that participant K mostly associated herself with this particular WPS group and are considered to be mobile as they smoke in various social settings. These social settings where gatherings take place may be planned or unplanned.

Participant K associated herself with a group; that being her cousins, when describing her smoking behavior, particularly in her use of the pronoun "we", to avoid singling herself out from a group. Thus, frequent waterpipe smokers may emphasize influences of the collective group, on individual smoking behavior. Her account further demonstrated that this WPS group collectively, moved to various social settings and collectively influenced each other to smoke the waterpipe. Thus, WPS may be attributed to being a contextual phenomenon that is dependent on a combination of the organizational setting and the relations and interactions between individuals and groups of individuals, rather than these characteristics in isolation.

Extract 5

R: Okay um do you allow other people who you've never met before to smoke with you?

J: No

K: Hmm it depends where it is. Like if I'm at my cousin's house and there's somebody there then at least I know they know them so it will be fine but like if I'm at a strange place like the Rand Show or Lusito Land or something then no

[(All laugh)]

H: The rand show

R: And what about campus?

J: You'll meet them the next day

L: Like say you know you at the Matrix and some random comes up to you

K: (0.8) I don't think I would

R: Why not?

G: Unless they friends of a friend right. ya

K: Ya unless they like a friend of a friend and they somebody that I know
but

L: And you've seen them before

K: Because like we share a pipe like between us like I don't know them,
their personal hygiene like I don't know them at all

L: Ya

R: So do you guys put filters on the pipe when you smoking amongst each
other?

K: Not like this no but when we go out to like if we like at Lusito land
or something we will use a filter

R: Okay um =

K: = cause it's just like that dirty vibe odor. You just feel dirty to do
things

[(All laugh)]

R: So it's quite a like a close group then of just you guys

J: Mmm

L: Ya

R: And your friends of friends

K: Aah I'm like that I don't know about them

R: So I can't be like hey

K: Hmm

J: Eish

R: I have herpes

[(All laugh)]

K: Ya but what we've done is I don't know if you were talking I don't
know what that pvc pipe thing is you were talking about

J: Oh ya

K: But what me and my cousins have done because there has been a lot of times where we go out and people ask to smoke with us. It's like a plastic pipe thing. It it's not these ones that we smoke with

J: It's like a fish tank hose

K: So if we go out. Ya. So if we go out and somebody else is smoking with us, when we go home we'll actually cut the tip off and then just carry on smoking. I think it's just us though

H: That's mean

K: I know but its just

H: I'm addicted

K: I guess it's the way we are we feel like dirty to do that

R: Okay and you are the same. No outsiders

L: No. You don't know what other people have been doing with their mouths. Don't wanna touch it. I'm just thinking you have to interact with other people

K: Ya

L: Because I'm gonna touch it then the next person

K: Ya you feel bad to like tell them no so

J: I don't

K: Ya you just

L: [(Laughs)] no no

R: Cause it is a social thing at the end of the day so

K: Mm

R: People are gonna be socializing people are gonna be coming to the group so it is difficult I suppose to say no to someone

L: Ya

K: But I think like at a place like campus everybody has that idea that you don't share pipe like that's why you'll see all these different groups around smoking pipe but it will never be one big group around it

L: Ya. Even if it's like two people here and two people there

K: Cause people. It's like an understanding

J: (()) in one big group. How long will you wait for the pull

K: No no but it's like an understanding people know that it's not that

people don't like sharing

Before the above extract, participants were previously discussing whether they think WPS is a drug and falls into the same category as marijuana. They came to the consensus that WPS was calming and had no change in any physical state, versus other drugs. The interviewer brought the focus group back to the questions on the interview schedule and asked the group, “do you allow other people who you’ve never met before, smoke with you?” Here, the nature of WPS group mobility and permeability were highlighted within different social settings.

WPS groups were not completely closed in their mobility, but were semi permeable in allowing individuals to enter and to exit these groups. Furthermore, perceptions of hygiene played a salient role in influencing group behavior. It was also evident that the WPS groups adopted certain behaviors towards people classified into types of strangers they may encounter, such as the “random” versus the “friend of a friend”, according to the social setting. The WPS group became a lot more closed in large, unfamiliar social settings that may be subjected to many “randoms” versus a small intimate setting such as somebody’s “house”, where the WPS group were a lot more open to smoking with strangers. Participant K seemed to take responsibility in answering the interviewer’s question as she was earlier identified as a frequent waterpipe smoker in the group. Participant K highlighted the role of context in her account, “it depends where it is”. Context seemed to play an important role in the permeability of the smoking group in all social settings, from a familiar place such as “my cousin’s house” to an unfamiliar, “strange place” like “Lusito Land” or the “Rand Show”. Participant K further highlighted how smoking behavior changed, from being at her “cousin’s house” to smoking in a “strange place”. Participant H, who earlier identified himself as a

non- smoker, made a remark of “the Rand Show” in the background, emphasizing his surprise at K’s choice of smoking location. This indicated that Participant K smoked in locations where one would not expect WPS to occur, further indicating this participant’s addiction to WPS.

Furthermore, a house setting may be seen as closed and selective in which only certain people were allowed to enter this location from the start. People who were allowed to enter this setting followed the criteria that one needs to know at least someone to be allowed into the house. The WPS groups were then a lot more relaxed in allowing people, whom they have never met before, to smoke with them. This important criteria also applied to unfamiliar settings such as the “Rand Show” or “Lusito Land”, however, these locations may be a lot more open and susceptible to people with unknown personal hygiene, as evident in participant K’s response to using a filter when smoking in Lusito Land, because she felt dirty if she did not. Hygiene seemed to play a more salient role in behavior change, rather than the other health effects associated with WPS, such as respiratory disease. Participant K may have been using hygiene as an acceptable excuse for excluding people from entering a smoking group. This may be due the acute and visible effects bad hygiene may have on a person, as opposed to the effects of respiratory disease occurring much later. Thus, WPS groups became a lot stricter in allowing people they have never met before, smoke waterpipe with them, due to unknown personal hygiene, reinforcing structural bonding social capital.

On the other hand, campus was a unique setting, as emphasized by the interviewer singling out this location in the question directed to the group. Participant J’s claim of, “You’ll meet

them the next day” implied that letting people who one has never met before, smoke with them may initially be “random”, but contact through smoking a waterpipe together, may encourage further contact in the future. Participant L further expanded on the interviewer’s question by providing K with a scenario, before aligning herself with any participants in the group. Although campus, and more specifically, the Matrix, a recreational student center where students gather and were seen to smoke waterpipe, was limited to students of the university, it was not as selective as being in a house setting but not too much of a “strange place” either. Furthermore, “a random” in Participant L’s question to participant K, may be an individual who has never had contact with any members of the group, and group members have no prior knowledge of this individual either, classifying this individual as a complete stranger and outsider to the group. The pause before Participant K’s response may have indicated some level of discomfort in her response of excluding people from the group, but this discomfort was backed up by Participant G and L in their claims, “unless they a friend of a friend” and “you’ve seen them before”. A “friend of a friend” may imply that contact and knowledge of the person to a certain degree was established, by having contact with at least one member in the WPS group.

Furthermore, Participant K claimed that filters were not used amongst members of the group. Filters in this context, were used as a protection barrier against STD’s and may also symbolize exclusion against “random” people encountered in unfamiliar settings, such as Lusito Land. The statement of the group being closed and allowing only “friends of friends” to enter, was challenged by the interviewer, by placing the group in a scenario, where the interviewer would approach the WPS group. Here, there was a level of discomfort in refusing the interviewer to smoke in Participant K and J’s reaction, “Hmmm” and “Eish”. The

interviewer jokingly stated “I have herpes”, which is short for herpes (potential oral infection encountered through sharing a pipe), to indicate that people were not upfront about having STD’s when they approached a group. Here, Participant K and J change their alignment from not allowing strangers to smoke in the group, by providing accounts of how they would deal with strangers entering the group, without directly dismissing them. This conflict in the group was resolved by K in her claim that her group cuts the end of the pipe. Participant H, the non-smoker of the group identified these actions as “mean” and excluding of people. The interviewer may have seen the discomfort arising again in Participant K and asked the rest of the group to side with her in not allowing outsiders to enter the group.

Although L sided with K in preventing strangers from entering the WPS group, he also recognized the conflict in doing so, as evident in his claim, “I’m just thinking you have to interact with other people”. Participant K understood this dilemma by stating “you feel bad to tell them no,” which supported the claim of discomfort in excluding people by directly dismissing them, but excluding them through the use of filters and cutting off the ends of the pipe. Although J stated that he did not feel bad in excluding people, this was contradictory to his reaction earlier, when the interviewer posed a scenario for wanting to enter the group to smoke.

Participant L was in agreement with the interviewer’s conclusion of the difficulty in excluding people, due to WPS being a social activity. Participant K seemed to be uncomfortable with the conclusion made by the interviewer and further justified why excluding people was not viewed as a bad thing. She did this by shifting the focus to all WPS

groups on campus, and claimed that all groups have come to a consensus in excluding people, evident in her claim, “everybody has that idea”. By doing this, she has made herself to be a good person who was following the rules of WPS, as suggested in her claim, “it’s like an understanding”, without seeming like she was a bad person, by being the only one not sharing the waterpipe and excluding individuals from the group. Participant K continued to support her claim by stating that she wouldn’t approach an unfamiliar group of waterpipe smokers, and L agreed with her by stating that it would be awkward, in the transcript not indicated above. Thus, the organizational setting influences the degree of permeability and interactions of the WPS group, making WPS groups more inward looking and restricted in unknown social settings versus known, intimate social settings, reinforcing bonding structural social capital on WPS health outcomes.

Extract 6

R: It’s like a group discussion. So um in which groups do you smoke pipe the most and why

M: It’s only this group

P: Ya we don’t =

S: = But it’s not all of us that are here

M: Ya

S: Some people have gone home. This is like =

Q: = Half our group

S: Ya

R: So is this the group that you only smoke hookah in

N: No

P: No we have other groups

Q: A lot more

N: Where ever the pipe goes

O: Oh I don’t

M: This is the only group I smoke in

O: I ya this =
P: = Sometimes I smoke at home by myself =
S: = But the thing is right like the question you directing it to the group right but each person has like a different answer like for instance Paresh over here only smokes with this group whereas like Mo and I we smoke with other groups as well. We have other friends outside of Wits
P: But it's true
N: We have friends in common
S: Ya
N: And Vikesh also
S: Ya and Vikesh as well so like

The participants earlier accounted for their smoking frequency in the interview, by stating that the group collectively smoked at least once a week at the university. Participant N questioned whether the interviewer was conducting a waterpipe survey, with the interviewer stating it to be a group discussion. The nature of the social connections facilitating WPS addiction was accounted for by these participants through mobility and permeability of the WPS group.

The interviewer's question was assuming that WPS occurred in groups as evident in the question directed to the participants, as opposed to asking the group for individual accounts of smoking. This may be due to the observation that WPS at the university was seen to be a shared, group activity. N's account of group's forming around "wherever the pipe goes" also suggested that groups are mobile to various settings. Participants M and O were the females of the group and claimed to only smoke with this particular WPS group, versus the males of the group moving between various WPS groups, to different locations, as highlighted in

Participant S's account "we have other friends outside of WITS." Participant N's account, "we have friends in common", also suggested that the groups in which individuals move between, were not completely unfamiliar and are homogenous. Thus, waterpipe smokers are mobile between other WPS groups and groups tend to be permeable to individuals who are familiar and homogenous. Moreover, having access to various WPS groups may also facilitate addiction, and adverse health effects associated with WPS.

P's account of singling himself out by saying he was not part of a group and smokes alone, was interrupted by S, who dismissed his individual smoking account and placed individuals as belonging to a group or many groups, to possibly avoid taking individual responsibility for their smoking behavior. What was also interesting in this extract was how participants were particularly vague in telling the interviewer who smokes with whom. Perhaps, by revealing these particulars, individuals may be at risk for being exposed as bad, frequent and addicted smokers. They may also seem like closed, tight knit groups, excluding people from their WPS group. With the risk of potentially being exposed, Participant S took responsibility in answering the question by positioning individuals, particularly the males of the group, as being part of a single group or part of many groups, to possibly avoid being singled out as a victim of bad, smoking behavior. Consensus was reached for going with a group on account of smoking, without revealing any specific connections among waterpipe smokers. An interesting pattern that emerged from these extracts was that males seemed to belong to many WPS groups, whereas the females in the focus groups were part of a single WPS group. This may be due to males being more addicted to the waterpipe than females, evident in earlier accounts of the interview, made about individual smoking frequency. Here, the males claimed to smoke almost every day, whereas the females claimed to smoke occasionally.

These closed connections among similar WPS groups may allow easy access to a waterpipe, and facilitate nicotine dependence among individuals.

Extract 7

- R: Okay cool. And then um so in which groups do you smoke pipe the most and why?
- B: What do you mean which groups?
- A: Groups as in?
- R: As in um just this friendship group?
- D: Ya
- A: Ya
- R: Or do you smoke pipe elsewhere?
- C: No just here =
- A: = Well it depends. As long as we with friends then we smoke
- D: Well not random strangers
- C: As long as we on this group. Ya like as long as we with these people.
- R: So outside of Wits do you ever smoke?
- D: Ya but if we meet up with us? Or we meet with friends then we'll smoke
- A: ya
- R: So it's always the same people
- A: It's the same group of friends
- C: Ya
- D: Basically
- B: Most of the time

Earlier in the interview, participants in this focus group all claimed to smoke waterpipe in response to the interviewer's question of, "how often do you see each other and smoke?"

They further broke down their smoking frequency as either frequent or occasional.

Participants A and D claimed to smoke together every day, whereas Participants B and C

claimed to smoke occasionally. The context of this extract comes from the interviewer's follow up question, "...in which groups do you smoke pipe the most and why?" Like extract 6, this extract demonstrated aspects of permeability and mobility by looking at the group composition and the way people move between homogenous WPS groups, within different social settings outside the university as well.

The participants were possibly purposefully vague in answering the interviewer's question, and may have wanted to appear good in the presence of the interviewer, by asking for clues on how to answer the question. By clarifying Participant A and B's query about smoking groups, the interviewer answered the question by suggesting that smoking occurs in groups of friends, which is approved by Participant A and D. Furthermore, bonding social capital may be based on homogenous and inward looking connections that include people that are similar in terms of race, age and/ or education. This was evident, here when the interviewer made an assumption that smoking occurs collectively in friendship circles that were inward looking, and exclude people who were not friends from the group. Considering that this particular focus group consisted of only Indian participants of the same age, taking the same classes; friends, in this context, may be defined as contact with homogenous peers in terms of race, age and / or education, as observed in the composition of this WPS group, collectively influencing each other to smoke when together. This was contrasted to smoking with "random strangers" by participant D, who may be individuals who are seen as being different to the group members in terms of demographic characteristics. The interviewer further questioned if these people are mobile to different locations, versus a group of friends whom they only smoke with at the university. Participant A stated that "as long as we with friends

then we smoke”, which suggested that WPS is influenced by peers or friends within, as well as outside the university setting.

The interviewer went on to assume that smoking took place in different friendship groups in different locations. Participant C, who was the only female in the group, was seen to belong to only this WPS group, whereas participants A, D and B were males and were seen to belong to a number of WPS groups, and may have exerted most of the control over who was allowed to enter these WPS groups, due to their frequent smoking behavior as identified earlier by participants in the interview. The male participants further suggested that the group members are mobile in their smoking, as participants collectively explain that they smoked as long as they with friends. WPS groups were also permeable to friends rather than strangers. Smoking also took place in other social settings as long as some members of the group were present within these settings, as evident in Participant D’s remark “basically”. B stated that most of the time, he smoked with the same people in different settings which may suggest that he was part of other smoking groups as well, and that the structure of the group was not always constant. Thus, this extract emphasized that individuals, more specifically males, tended to be mobile between WPS groups within and outside the university. Due to their frequent smoking, they tended to socialize almost exclusively with other waterpipe smokers and move in and out of WPS groups. These waterpipe smokers who were labeled as friends, tended to be homogenous, in terms of demographic characteristics. Being in the company of friends, resulted in WPS in these groups. These individuals and groups were also mobile to different settings, as long as the basic structure of the friendship group was maintained. Moreover, establishing these social connections through the mobility and permeability between

homogenous WPS group members may facilitate nicotine dependence among individual waterpipe smokers.

3.4 The Association between Cognitive Factors and Bonding Social Capital in Relation to WPS

The social environment may affect individual health related behavior through a number of causal mechanisms, by shaping norms, enabling or not enabling people to participate in particular behaviors and enforcing social control. Since WPS is an activity that requires one to share a pipe between people, allowing people to enter a WPS group requires a system. The way in which people are excluded from joining a WPS group is highlighted in extracts 8 – 10, where prior contact and gender play a role in setting out conditions of exclusion. Cognitive bonding Social capital, along with the structural aspects, is a useful way to understand how these connections may be linked to population health, especially in WPS.

Extract 8

- R: So do you allow people you've never met before to smoke pipe with you
- A: Well a friend of them
- D: If you bring a good friend then. Like if Shakes brings his good friend then ya ok cause Shakes trusts him so we trust each other
- E: ya
- D: But then if someone says ey bra can we pull then we like suspicious now like aah
- B: Its dead it's dead
- A: Pipes dead
- R: Why why do you not allow?
- E: Cause if they have like STD's
- B: Cause its awkward. It's not like

E: Ya but you never know like =
B: = It's like going to a club and asking someone to buy you a beer, like unless you a chick that's a different story
D: Ahh you do that though
[(All laugh)]
R: So it's sort of like a closed thing
D: Ya
R: And you can only get in through bridges of people
A: Well it depends like just say I met you and we started talking and we became friends then we'd been fine if you smoke whenever. So it'll be fine if you like know the person then it's all right
R: It's like an initiation like I've been initiated
B: So even if you come tomorrow you can smoke
A: Ya like even though we don't know you like well well personally or something
E: Bra don't you carry those things? Those things you put on the end?
A: Filters?
E: Ya
A: Ya well. Some days we'll be like okay take the filter we sick so we don't want to get them =
E: = Right oh

The context of this interview came from the participants previously clarifying that they gathered to play a card game called Thani, rather than coming together to smoke a waterpipe, and that waterpipes haphazardly appears to be present in these settings. A follow up question of whether they allow people they have never met before to smoke with them was directed to the participants, where the above extract is further analyzed. This extract demonstrates that, in order to enter WPS groups, individuals were classified as being a “friend of a friend” or “random”, depending on what criteria this individual may meet at the point of contact with the WPS group. People may enter a WPS group on condition that the person knows at least

one group member within the WPS group, classifying them as a “friend of a friend”, as opposed to being a complete stranger with no previous contact with the group, and its members, classifying them as “random”. One may also transcend from being in the “random” category to being a friend of a friend, prior to smoking by following certain criteria. These classifications may have been adopted by WPS groups to protect themselves against STD’s encountered from pipe sharing, as well as to avoid unwanted company. The way in which participants accounted for these claims, is further analyzed.

A person who was a stranger to the group and did not meet the condition of being a “friend of a friend,” defined by the group as one who has had contact with any group member, prior to smoking, led the group to behave in a way that excluded these people from the group, by stating that the pipe was dead or not lit up for smoking use, without directly dismissing and offending these people. These people were tied to being suspicious in Participant D’s remark, which was further expanded as the possibility of these people having STD’s, as well as avoiding unwanted company by stating that “it’s awkward,” as opposed to being a “friend of a friend”, where one is assumed not to have any STD’s and may be good company. Once again, hygiene played a salient excuse for excluding people from the group, without the discomfort of excluding people, due to unwanted company.

Conditions of inclusion may also be extended to being female. This was apparent in Participant B’s statement of, “unless you a chick that’s a different story”. Just like WPS, a female asking for an alcoholic drink from a male, had an alternative agenda, as opposed to a male asking another male for a drink. Thus, conditions of exclusion seemed to be gendered,

especially in male waterpipe smoking groups, where females were chosen by the group to enter, depending on the social benefit that the group members gained from this.

The permeability of the group was further questioned by the interviewer where contact, as an important condition of exclusion, emerged. The claim made by Participant A in, “well it depends”, stated that certain inclusion criteria needed to be met in order to smoke in the group. The criteria of contact in the form of a conversation prior to smoking, may allow people to go from being a “random”, to being a friend. Once this initial criteria had been met, this individual had permission to enter a particular smoking group, evident in participant B’s claim, “So even if you come tomorrow you can smoke”. By also being allowed to enter the smoking group, one can get to know the person “well personally” through prolonged smoking sessions, provided that initial contact was made prior to smoking. This condition may also contribute to precautions taken by the smoking group against adverse health effects from pipe sharing, and a way to develop trust in individuals that one would smoke with.

Participant E mentioned the use of filters in connection with smoking with strangers.

However, Participant A changed the direction of the conversation. He attributed filters in this group to only be used amongst each other in extreme cases, such as if a person in the group was sick, as opposed to using them on a regular basis amongst each other, or when smoking with “randoms” or even “friends of friends”. Thus, there was evidence in how the group exercised social control over who was excluded from the group. There was evidence that the group was quite restrictive in allowing people to smoke with them and use STD contraction as a valid excuse for excluding people. What was interesting was that even though the group claimed to smoke with people they do not know well personally, their actions in not smoking

with filters, demonstrated that the group was not entirely concerned about hygiene, but more about how a member added social value to the group in terms of friendship and company. Thus, cognitive bonding social capital was evident in the way the group was restricted in allowing people to smoke and excluded people who did not meet rules of exclusion such as contact and/ or gender.

Extract 9

R: Okay um so in what other ways do you think it's harmful to you?

N: Nothing besides our lungs

P: I think lung wise. Does it damage your lungs?

O: Ya

M: Ya it does

N: It tightens your lungs. That's all I think it's our lungs

P: K maybe we can get like herpes and stuff

M: No but we all like =

P: = We all safe here

N: But you see we don't we don't let outsiders come and smoke

O: We don't let strangers come

M: Ya

R: So you don't trust anyone else

N: Ya

R: Who comes in

M: Ya we ya

P: Like we wouldn't give you a pipe

S: Nah I would

R: Why would you? Cause I'm a stranger

P: Cause his single

N: He likes to mingle

The interviewer asked the participants, “In which ways do they think the pipe is harmful?”, which was mistakenly heard as “helpful”, rather than “harmful”, by some of the participants. Participant S mentioned that the waterpipe was useful because it suppressed ones hunger. The group discussed whether they would smoke waterpipe over eating. The interviewer then redirected the question to asking the participants how they thought the waterpipe was harmful. The accounts of how people got excluded from the group, unfold as participant’s responded to the interviewer’s question of the harmful effects of WPS.

Participant N responded to this question by limiting the harmful effects to only affecting the lungs. Participant P was uncertain about this claim in tone and question. The group came to a consensus that the waterpipe was harmful to ones lungs. However, Participant P provided the possibility of contracting STD’s from pipe sharing, which was quickly dismissed by M, bringing him back to position himself with the rest of the group, and ruling out the possibility of contracting any form of STD’s from pipe sharing. Participant N expanded on why they were not at risk of conducting any form of STD’s from pipe sharing, by claiming that they don’t let “outsiders come and smoke.” “Outsiders” was explained by Participant O, as being strangers; people who cannot be trusted, making the group appear to be closed. Thus, the group was in control of who got excluded from the group. Participant P even classified the interviewer as a stranger, a person that he has had no prior contact with. However, Participant S changed his position and claimed that he would allow the interviewer to smoke with the group, which was contradictory to allowing strangers to smoke. From P and N’s remark, it may be possible that Participant S was flirting with the interviewer. Thus, allowing strangers to smoke was contingent on certain characteristics of the individual wanting to enter the group, making the WPS group semi permeable to strangers. Perhaps the condition of

exclusion was gender based, depending on the composition of the group. In this case, this WPS group consisted of two females and four males. Since Participant S's status may be single, as stated by Participant P and N, S may use the waterpipe to allow females to smoke and socialize with, despite these people being strangers, whereas Participant P wouldn't give the interviewer the pipe, as he saw no benefit in sharing the waterpipe with the interviewer. From this extract, one can see that the group had the power for excluding and including people into a group, and these conditions were contingent on the person's characteristics wanting to enter the group, depending on the composition of the group and how this "stranger" would benefit the group, or an individual in the group exercising social control.

Thus, gender was seen to play an important role in the exclusion of certain people wanting to join the WPS group. This extract demonstrated how the males of the group, used their control over who was allowed to enter the group and who got excluded. Although females were categorized as "randoms" or "strangers" by the group, the males of the group were a lot more lenient in allowing female "strangers" or "randoms" into the group, as they saw this as socially benefitting the males, in the WPS group.

Extract 10

R: Sixteen okay um do you allow other people that you've never met
before smoke with you?

M: No

P: No

Q: We use to cut it off like the fish pipe

N: You more than welcome to come and smoke

P: Ya you see but that was =

R: = So you'd allow them to smoke but?

Q: But then we'd cut it off
P: Take measures to clean it
N: Ya like proper measures
P: But it was like complete randoms. You see it was a good tool to make friends in all honesty. In first year like =
Q: = Ya it wouldn't be complete randoms
N: Good tool good tool to make friends
R: But you would be cutting the edges of the pipe
N: No no no they use to do that
Q: We use to do that cause we use to get like proper randoms
S: You see you get filters like that so we use to just put a filter on make them smoke with it and then take the filters off and throw it away
N: But you see I like the girls so it was a good way to get girls into the group you know
S: It's true though its true. Come smoke a pipe with us
N: You see girls think their parents won't let them but then for guys it's okay so then they can join us

This extract was a direct continuation of extract 3. It came from the context of how information about the waterpipe had changed over time. The above extract presented here, came from asking the group what the legal age of smoking was, leading onto the next question in the interview schedule of allowing people they have never met, to smoke with them. This question implied the importance of contact as an important condition of exclusion.

Two sides emerged from this question. Participant M and P initially claim that they do not allow people they have never met, to smoke with them. Participant Q and N may agree with not allowing strangers to smoke with them, but also account for the discomfort experienced

when excluding these people, by stating that they cut off the ends of the fish pipe, a type of plastic pipe attached to the waterpipe, used to inhale smoke. Participant N remarked that they were open to people who wanted to come and smoke, however allowing these people to smoke was coupled with certain conditions as evident in Participant P's accounts "ya but you see that was" and "take measures to clean it". Although the waterpipe was used as a good tool to make friends, people entering the group were classified as either proper 'randoms', versus not being a complete random. Complete 'randoms', in this context implied people, who the group has never had contact with, prior to smoking the waterpipe.

In the event that people, classified as "complete randoms", do manage to smoke with the group, measures were taken by the group to avoid discomfort in directly excluding people, where protecting their health from possible disease from pipe sharing with people they have never had contact with, was used as an acceptable excuse to exclude these people from joining and smoking with the group. These measures were using filters at the end of the waterpipe or cutting the tip of the fish pipe.

Here, filters were seen as symbolic for indirect exclusion where proper randoms were assumed to be carrying STD's. Females on the other hand may be classified as not being complete randoms, and surpass being excluded from the group. Participant N controlled who entered the group by fulfilling his desires, such as flirting with females, with Participant S agreeing to this statement of getting girls into the group. Participant N recognized that smoking may still be gendered amongst the older generation of Indian parents, where females were still stigmatized for smoking, whereas this young group of Indian males, allowed

females to smoke in the group without stigmatizing them, viewing it as an opportunity to get girls into the group for their own social benefit as well. Thus, cognitive social capital reinforced bonding amongst WPS groups as seen through the use of exclusion criteria in the form of gender and contact, influencing health outcomes of individuals involved in exercising social control within these groups.

3.5. Summary of Results

This chapter has highlighted a number of social factors attributing to bonding social capital, affecting WPS amongst university students. These findings provide possible explanations for the limited health psychology perspective in reducing WPS, by looking at social factors such as mobility and permeability of WPS groups, contributing to structural and cognitive aspects of social capital. Since cognitive and structural bonding social capital tends to occur simultaneously, there is some overlap between these concepts. However, these concepts have been presented separately for emphasis. More specifically the findings can be summarized as follows:

3.5.1 Exposure to previous WPS campaigns and/ or interventions that may have influenced participant's behavior towards WPS

- Although there is evidence to suggest that current WPS interventions are useful in creating awareness of the dangers of WPS, these interventions alone have not succeeded in reducing WPS amongst university students, despite them knowing the harmful effects of WPS. Thus, social factors of WPS need to be incorporated into

future interventions to reduce WPS, such as emphasizing influences of the collective group and social connections on smoking behavior.

3.5.2 The Association between Structural Factors and Bonding Social Capital in Relation to WPS

- WPS groups are not fixed or constant, but move to various social settings, from campus to recreational areas outside the campus. WPS groups are not completely closed, but are semi permeable in allowing individuals to enter and exit these groups. The ease at which a person can enter a WPS group depends on a number of interacting factors. These include hygiene, social setting and group homogeneity, playing a salient role in influencing group behavior, by becoming closed and inward looking, reinforcing bonding social capital.
- Hygiene played a salient role in influencing group behavior. It is also evident that the WPS groups adopted certain behaviors towards people classified into types of strangers they may encounter, such as the “random” versus the “friend of a friend”, according to the social setting.
- WPS groups were more inward looking and restricted in unknown social settings versus known, intimate social settings, reinforcing bonding structural social capital on WPS health outcomes.

- Waterpipe smokers were mobile between other WPS groups, and groups tended to be permeable to individuals who were familiar and homogenous such as race, age and/ or education. This bonding social capital may be based on homogenous and inward looking connections that may include people that are similar in terms of race, age and/ or education. It seemed that people, more specifically males, due to their frequent smoking behavior, may belong to many WPS groups that contain common friends, and move between these familiar WPS groups. These closed connections among similar WPS groups may have allowed easy access to a waterpipe and facilitate nicotine dependence among individuals.
- Thus, WPS may be attributed to being a contextual phenomenon that is dependent on a combination of the organizational setting and the relations and interactions between individuals and groups of individuals, rather than these characteristics in isolation.

3.5.3 The Association between Cognitive Factors and Bonding Social Capital in Relation to WPS

Cognitive social capital reinforced bonding amongst WPS groups, as seen through the use of exclusion criteria in the form of gender and contact, influencing health outcomes of individuals involved in exercising social control within these groups.

- In order to enter WPS groups, individuals were classified as being a “friend of a friend” or “random”, depending on what criteria this individual may meet at the point of contact with the WPS group. People may enter a WPS group on condition that the

person knew at least one group member within the WPS group, classifying them as a “friend of a friend” as opposed to being a complete stranger with no previous contact with the group and its members, classifying them as “random.”

- Filters were seen as symbolic for indirect exclusion where proper randoms were assumed to be carrying STD’s. Females on the other hand may be classified as not being complete randoms, and surpass being excluded from the group, due to the social benefit females may add to the group, such as flirting.

CHAPTER 4: DISCUSSION

4.1 Introduction

This study was the first of its kind in South Africa in terms of investigating social capital in WPS. Compared to the previous studies on WPS in South Africa, this study was more focused on the social connections and experiences of WPS as being an important determinant of health. This chapter discusses the results of this study in relation to the literature review and research questions presented in chapter one. The strengths and limitation of the study as well as methodological, theoretical and policy implication of the study, are highlighted within this chapter.

4.2 Exposure to previous WPS campaigns and/ or interventions that may have influenced participant's behavior towards WPS

Elements of mainstream health psychology applied to health education through mass media campaigns (posters and television programs), remain a popular approach to smoking cessation. These interventions intended for individuals to review their current behavior and change them according to the information given (Barnes, 2007). Narrowly designed media campaigns targeting individual behavior change has some form of informing people of the dangers of WPS however, participants continue to smoke the waterpipe, despite knowledge of the harmful effects.

Previous studies that have been conducted in South Africa aimed to assess the beliefs and associated behaviours, regarding the health-risk of smoking the waterpipe. For instance, Naidoo (2013), investigated participants demographics, smoking behaviours, knowledge, attitudes and practices relating to WPS among university students (Naidoo, 2012). The author further recommended that health interventions should target these factors of WPS, through health education of the dangers of smoking, even though majority of students (57%) claimed to smoke for the social ambiance. The intention of the study by Combrink et al (2010) was for undergraduate medical students from WITS University to conduct a health education workshop on the effects of WPS in a secondary school, Johannesburg. To inform the workshop, a baseline survey was conducted among a student population (aged 14 – 20 years, N=202). The survey highlighted an alarmingly high rate of WPS among the school children surveyed. In line with studies conducted elsewhere, the survey pointed to a widely held belief among users that WPS is less harmful than other forms of smoking (Combrink et al., 2010). Although the results of these studies do provide important information for tobacco control and substance abuse policies in South Africa, they tended to be limited for reducing WPS among individuals, as they informed us about what factors may be most relevant, but reveal little about how or why they were important, through preserving the integrity of the context (Hammal et al., 2008). All the above studies claimed that WPS is a social event, but none investigated this phenomenon in more detail, as an important determinant of health.

Although the intention of these studies were to target WPS factors through intervention strategies, these studies fail to incorporate important links in health and the social experience of participants smoking a waterpipe, which may be more meaningful in developing holistic interventions. This study fills this gap by examining the social factors of WPS and linking it to the adverse health effects associated with WPS. This was achieved through exploring the association between structural and cognitive bonding social capital among WPS groups, in a

South African university. This contributes to a more critical understanding of health psychology, by considering a holistic approach from a communitarian perspective that considers participants lived experiences, in reducing WPS among university students.

The results of this study highlighted that participants were not completely ignorant of the dangers of waterpipe smoking, as most of them claimed to have been exposed to some form of intervention, from school education to posters displayed at the university, as well as information from a television program, Carte Blanch. Evidence pointed to participants still continuing to smoke the waterpipe, despite knowledge of the harmful effects. In accounting for their smoking behavior, despite being informed about the dangers of WPS, participants claimed that negative effects of WPS were over exaggerated from their own experience of trying it, in contrast to the information given in current individualistic interventions. Just like previous studies conducted in South Africa, WPS is viewed to be not harmful. However, this study additionally provided accounts of how and why participants view WPS as less harmful. Participants tended to compare WPS to cigarette smoking when accounting for their smoking behavior. Through these comparisons, the waterpipe was perceived to have less side effects, it was pleasurable and not addictive. This may have led to WPS groups blocking out negative information about WPS and selecting message based on personal experience of smoking the waterpipe, such as it being tasty, a social event and pleasurable. This was also consistent with the study conducted by Hammal et al (2008), where interviews were conducted with 16 adult waterpipe smokers and 16 adult cigarette smokers in Syria. These participants confirmed that WPS was a pleasurable, social experience. By contrast, cigarette smokers saw their cigarette smoking as a routinized, oppressive and a personal addiction. Unlike cigarette smokers who felt stigmatized, waterpipe smokers generally felt that smoking waterpipe was acceptable.

Cigarette smokers believed that cigarettes were dangerous to their health and harmful to those around them, but waterpipe smokers were under the misconception that smoking waterpipe was relatively harmless to themselves and others. Unlike cigarette smokers who used cigarettes to manage stress, waterpipe smokers smoked for entertainment, leisure, and escape (Hammal et al., 2008).

Unlike previous studies, this study further explored the implications of current WPS interventions that WPS participants were exposed to. Participants engaging in waterpipe smoking in this study also attributed problematic smoking behavior to parents allowing younger children to smoke the waterpipe, perceiving any WPS interventions as targeting these people, in avoidance of taking responsibility of their own smoking behavior, when asked about these medical and media campaigns on the negative effects of WPS. These failures in policy have focused on a narrow individualistic approach to health (Edmondson, 2003). Smoking should be viewed as a practice very much related to where, when and with whom they smoke. As previously mentioned, much work has been done on smoking in public health from an individual health behavior perspective. In the social sciences, work has been done of theorizing the social world, however not much work exists in bringing these two spheres together (Poland et al., 2006). Thus, this study considers a more holistic view of group and social influences on WPS through the use of social capital. The concept of social capital fills important gaps in our understanding of the link between health and social relations in WPS.

4.3 The Association between Structural Factors and Bonding Social Capital in Relation to WPS

From the observation of WPS on campus being a group activity, as opposed to an individual behavior, the nature of connections among different individuals (i.e. the determinants of who gets connected to whom) and understanding the health relevant aspects of these connections among individuals and groups, can be changed to improve public health, related to WPS (Muntaner et al., 2000).

Current research from mainstream health psychology has also emphasized the individual, where little attention has been given to the possible influence of social forces, despite it stemming from a biopsychosocial perspective (Lomas, 1998). Empirical findings suggest that aspects of the social environment may have an effect on health. The social environment affects individual health related behavior through a number of causal mechanisms, by shaping norms, enforcing social control, constraining individual choice and enabling people to participate in particular behaviors (Lindström, 2008). Thus, WPS seems to be linked to how societies are organized and to the practices of institutions and the person's therein.

The4, complex social processes that are essential to understanding the prevalence and unique social distribution of WPS, is far more useful. The concept of social was used not to dismiss the importance of the individual, but to raise the importance of social relations and social structures in influencing WPS behavior. The results of this study showed interesting features (according to organizational setting, hygiene and mobility) of the way in which participants attribute their frequent smoking behavior to groups collectively influencing each other to smoke. For instance, WPS is a contextual phenomenon, dependent on a combination of the organizational setting and relations and interactions between groups of individual's, rather

than these characteristics alone. These collective social practices reflect a way of understanding behaviors as regular, social behaviors common to groups at the intersection of social structure that manifest in specific places, which was accounted for in this study (Poland et al., 2006).

In this study, social relations within social structures related to WPS were accounted for in the nature of WPS group mobility and permeability within different social settings. WPS groups adopted certain behaviors towards people classified into types of strangers they may encounter, such as the “random” versus the “friend of a friend”, according to the social setting. “A random,” according to participants, was an individual who has never had contact with any members of the group and group members have had no prior knowledge of this individual either, classifying this individual as a complete stranger and outsider to the group. A “friend of a friend” implied that contact and knowledge of the person to a certain degree was established, by having contact with at least one member in the WPS group. At the same time, WPS groups became a lot more closed in large, unfamiliar social settings that may have been subjected to many “randoms,” versus a small intimate setting such as somebody’s “house,” where the WPS group was a lot more open to smoking with strangers. This may have been due to unknown hygiene conditions in people they have never met before, as opposed to an individual they have had contact with. The acute and visible effects, bad hygiene may have on a person, as opposed to the effects of respiratory disease occurring much later, seemed to be an important factor for excluding people from the WPS group, reinforcing aspects of structural bonding social capital. However, discomfort was experienced in directly excluding strangers from the group by WPS group members. Thus, strangers were excluded indirectly through the use of filters, which served as a protection barrier against bad

hygiene, such as STD's or cutting off the ends of the smoking pipe. These factors of exclusion made WPS groups more inward looking and restricted, again reinforcing structural bonding social capital.

Previous studies have shown that by association with friends, who smoke, attitudes favorable to smoking were acquired and the individuals who were non-smokers selected friends who did not smoke (Ennet, 1993). This study further highlighted that waterpipe smokers were mobile between other WPS groups and groups tended to be permeable to individuals who were familiar and homogenous. Moreover, having access to various WPS groups may have also facilitated addiction and adverse health effects associated with WPS. This study demonstrated aspects of permeability and mobility by looking at the group composition and the way people moved between homogenous, WPS groups within different social settings, outside the university as well. Factors of homogeneity included gender, where female participants seemed to be part of a single WPS group, whereas males were part of several WPS groups. This may be due to males displaying more physiological nicotine dependence (smoking more than seven times a week) towards the waterpipe than females, as evident in a previous study by Desai (2012), conducted at WITS University (Desai, 2012). Males also tended to be mobile between WPS groups, within and outside the university. Due to their frequent smoking, they socialized almost exclusively with other waterpipe smokers who they labeled as friends and moved in and out of WPS groups. Some focus groups consisted of only Indian participants of the same age, taking the same classes. Thus, friends, in this context, was defined as contact with homogenous peers in terms of race, age and / or education, as observed in the composition of this WPS group, collectively influencing each other to smoke when together. Being in the company of friends, resulted in WPS in these

groups. These individuals and groups were also mobile to different settings as long as the basic structure of the friendship group was maintained. Moreover, establishing these social connections through the mobility and permeability between homogenous WPS group members, facilitated nicotine dependence among individual waterpipe smokers.

4.4 The Association between Cognitive Factors and Bonding Social Capital in Relation to WPS

Unlike previous studies that isolate factors, such as peer pressure as being the cause of smoking by Stewart – Knox (2005), this study has acknowledged the complexity of the context in which people smoke in. Thus, due to some of the ineffectiveness of such programs targeting the avoidance of peer pressure, future interventions need to address the range of factors that lead to selection and exclusion within the smoking context, which may allow for initiation and / or prolonged WPS (Arnett, 2007). This gap is addressed by exploring cognitive bonding social capital among WPS groups.

Cognitive social capital reinforced bonding among WPS groups as seen through the use of exclusion criteria in the form of gender and contact, influencing health outcomes of individuals involved in exercising social control within these groups. The group had the power for excluding and including people into a group, and these conditions are contingent on person's characteristics wanting to enter the group, depending on the composition of the group and how this "stranger" would benefit the group or an individual in the group, exercising social control.

The criteria of contact in the form of a conversation prior to smoking, may allow people to go from being a “random,” to being a friend. Once these initial criteria had been met, this individual had permission to enter a particular smoking group. This condition may also have contributed to precautions taken by the smoking group against adverse health effects from pipe sharing, and a way to develop trust in individuals that one would smoke with.

Conditions of exclusion also seemed to be gendered, especially in male waterpipe smoking groups. Although females were categorized as “randoms” or “strangers” by the group, the males of the group were a lot more lenient in allowing female “strangers” or “randoms” into the group, as they saw this as socially benefitting the males, in the WPS group. Thus, allowing strangers to smoke was contingent on certain characteristics of the individual wanting to enter the group, making the WPS group semi permeable to strangers. For instance, some participants used the waterpipe to allow females to smoke and socialize with, despite these people being strangers,

Thus, there is evidence in how the group exercised social control over who was excluded from the group. There was evidence that the group was quite restrictive in allowing people to smoke with them and used STD contraction as a valid excuse for excluding people. What was interesting is that even though the group claimed to smoke with people they do not know well personally, their actions in not smoking with filters, demonstrated that the group was not entirely concerned about hygiene, but more about how a member added social value to the group in terms of friendship and company. Thus, cognitive bonding social capital was evident in the way the group was restricted in allowing people to smoke, and excluded people who did not meet rules of exclusion, such as contact and/ or gender.

4.5 Strengths and Limitations

Although this study is the first of its kind conducted on university students in South Africa, there is a need for larger, more detailed studies exploring the link between health and social relations in WPS by studying other factors of social capital such as bridging, trust and norms of reciprocity. Studies should also be conducted in other samples, such as other universities as well as school samples, to increase the external validity of the study's findings.

The focus groups in this study were conducted in an open, outdoor environment where participants were free to enter and exit the group. Due to the openness of the focus group, the interview had to be sometimes stopped in order to explain aims and objectives of the study taking place, and to gain consent from the new participants. This may have interfered with the flow of the interview, but this method allowed for an increase in participation rate due to the focus groups being conducted immediately when approached.

A richer and more in – depth empirical exploration of concepts and ideas is a notable strength of qualitative research. Unlike most questionnaire research, qualitative investigation relies on open rather than closed questioning. Resulting data is a product of an interaction between the researcher and participants (Whitley, 2008). Furthermore, the qualitative approach to the study adopted an abductive approach that was flexible in its design by following a theory, as well as attempted to answer the research questions from data that arose from the interviews themselves. Although qualitative studies are useful, it is highly recommended that future qualitative studies include a quantitative component to better understand the role of social factors, in relation to WPS and health.

4.6 Implications of the study

4.6.1 Methodological implications

There is a need for larger and more detailed studies exploring the link between social factors of WPS and health implications. Future studies should also explore bonding social capital on larger samples to make stronger conclusions about the cognitive and structural bonding social capital factors in WPS groups. These samples could include people from other universities, schools and recreational areas such as WPS cafés. Although qualitative methods provide a rich and in – depth account of investigating social capital and WPS, among university students, to address some of the gaps in the literature, more qualitative, quantitative and mixed methods studies can help add to the current study of social capital and WPS, by providing details of magnitude in quantitative methods, as well as participant perceptions of those issues using qualitative methods. Thus, future studies should include a quantitative or mixed methods component to better understand the association between social capital and WPS. Furthermore, this qualitative study can be used as a basis to design locally, appropriate quantitative intervention studies and psychometric instruments, appropriate for measuring social capital and WPS within a South African context.

Although this study used predetermined questions at the beginning of the investigation, the abductive nature of the study allowed for themes to emerge that were not previously considered, without compromising the richness and integrity of the data.

4.6.2 Theoretical implications

Not much is known about the social aspects of WPS that may contribute to adverse health effects among university students. Although previous studies claimed that WPS was a social event, no studies have explored this in more detail, especially social capital and WPS among university students in South Africa. Mainstream health psychology relies on health education, such as posters, TV shows and campaigns to reduce smoking, where one changes their behavior according to the information given. These narrowly designed interventions have some form of targeting individual behavior change through informing people of the dangers of WPS, but tend to be limited, as individuals continue to smoke the waterpipe, despite knowledge of the adverse health effects of WPS. Despite measurement, study design and analysis issues confronting social capital, this study has contributed to a more critical approach to the health psychology literature that focuses on targeting WPS cessation from a holistic perspective. This may be done by including social and health factors of WPS in designing WPS interventions. Thus, the concept of social capital fills important gaps in the literature by furthering our understanding of the link between health and social relations in WPS. Although this is a good start in the literature, social capital still remains to be a complex construct with many factors associated with it such as bridging, linking, trust, participation, social support and norms of reciprocity, all of which need to be explored in future studies to fully understand the association between social capital and WPS. For these factors to be explored, a larger sample would have been required within a variety of contexts. The proposed framework of bonding social capital (Figure 1) also needs to be applied and further evaluated in other populations.

4.6.3 Policy Implications

Although the South African government has increased taxation and banned advertising on any tobacco products to discourage tobacco use, the use of tobacco still remains a public health concern. Although tobacco smoking is prohibited in public places, WPS has not yet been completely prohibited (Department of Health South Africa, 2014). The focus on policy should be to reduce WPS amongst the youth (age 18- 24). Results from this study may suggest for policy makers to take into consideration the social factors at the communitarian level when designing interventions to reduce WPS smoking. Policy makers and health planners should not assume that health education alone is necessarily the most effective way to reduce WPS among university students. Policy makers should recognize the fact that WPS is a social event, sensitive to social bonds and connections, facilitating negative health effects among WPS groups. Policy makers and planners need to integrate these findings into future interventions while also paying attention to informing people about the adverse health effects of WPS. Additionally, policy needs to acknowledge the way in which participants of this study attributed their frequent smoking behavior to groups collectively influencing each other to smoke, as well as how factors of hygiene, homogenous group composition (according to age, race and education), and the type of organisational setting (familiar vs. unfamiliar), play a role in the way social relations and interactions influence permeability and mobility of WPS groups, reinforcing structural bonding social capital. Factors of cognitive bonding social capital, where prior contact and gender played a role in setting out conditions of exclusion (random vs friend) are also important to consider. Cognitive bonding social capital, along with the structural aspects, is a useful way to understand how these connections may be linked to population health, especially in WPS, so that prevention interventions can consider these factors in their designs.

4.7 Concluding Remarks

Practitioners can no longer assume that simple, individualist intervention strategies of health education and media campaigns are effective in reducing WPS among university students. Although useful to a certain point in bringing to light the negative health effects associated with WPS, this study attempts to link mainstream health psychology approaches and social factors, for a more holistic perspective in designing future interventions for reducing WPS. This was achieved through exploring the association between structural and cognitive bonding social capital, among WPS groups in a South African university.

The overall study found that even though there have been numerous health interventions to reduce WPS such as education in schools, posters at the university and TV shows, people continue to smoke the waterpipe despite knowledge of the dangers of WPS smoking. Instead, the way in which the participants attributed their frequent smoking behavior to groups collectively influencing each other to smoke, as well as how factors of hygiene, homogenous group composition (in terms of race age and education) and the type of organisational setting (familiar vs. unfamiliar) played a role in the way social relations and interactions influenced permeability and mobility of WPS groups, reinforcing structural bonding social capital.

Factors of cognitive bonding social capital were highlighted, where prior contact and gender played a role in setting out conditions of exclusion. Cognitive bonding social capital, along with the structural aspects, was a useful way to understand how these connections may be linked to population health, especially in WPS. However, more studies are needed to a) increase the validity of the study by investigating structural and cognitive bonding social

capital in larger samples of university students b) further the current theoretical understanding of social capital and WPS, by investigating other constructs of social capital (bridging, linking, trust, social support etc.) c) investigate the association between WPS and social capital on other populations such as individuals in schools and other university students across South Africa.

Thus, health promoters need to invest more energy into developing programs and policies that take into consideration the social dimensions within the broader context of the university, which social capital may have to offer, rather than assuming behavioral change through simplistic, individualized interventions such as health education and media campaigns. Despite the limitations, this study still manages to address some important gaps in the literature and offers contributions to the field of health psychology where not much was known about the social aspects of WPS.

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APPENDIX A: INFORMATION SHEET



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Tel: (011) 717-4500 Fax: (011) 717-4559

Hello.

My name is Rachana Desai and I am conducting research at the University of the Witwatersrand in order to obtain a Masters degree in Psychology. My research aims to look at the social capital framework for understanding the acculturation of waterpipe smoking behaviour in South African university students. You are invited to take part in this study.

Participation in this study involves participating in a focus group that will take approximately 30 - 40 minutes to complete. Participation is completely voluntary and it will not affect your courses at the university or your marks in any way at all. Some extract from the audio recording will be used but pseudonyms will be used. You are free to refuse to take part in this study with no negative consequences.

There are no foreseeable risks or benefits involved in participating in the focus group. If anything in the questionnaire upsets you or you would like to discuss anything further, please contact Quit Line: 011 720-3145.

Once the study is complete, a summary of results will be emailed to you. The study will contribute to a greater understanding of the current trends of waterpipe smoking at the university. If you have any questions, please feel free to contact me or my supervisor (details below).

Thank you for considering participation in this study.

Kind Regards

Rachana Desai

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Brendon Barnes

Supervisor: Brendon.barnes@wits.ac.za

APPENDIX B: AUDIO CONSENT FORM



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Tel: (011) 717-4500 Fax: (011) 717-4559

Participation in the study is voluntary. If you do not wish to participate, or withdraw at any time during the study, your wishes will be complied with, and nothing will be held against you. Your identity will be protected by the use of fictitious names and all data will be stored under lock and key and available only to me and my supervisor. The findings will be used for academic purposes only.

Permission is granted:

- To be observed
- To be interviewed
- To be audio recorded

I agree to these conditions with the understanding that confidentiality of my identity will be protected, as stipulated above.

Name of Participant

Signature of Participant

Date

APPENDIX C: FOCUS GROUP INTERVIEW SCHEDULE

1. Please can you introduce yourself and tell me a little bit about yourself.
2. How often do you see each other and smoke?
3. In which groups do you smoke waterpipe the most and why?
4. How often do you smoke waterpipe in these groups?
5. Do you think waterpipe smoking is harmful? In what ways do you think it is/ is not harmful?
6. What got you to start smoking the waterpipe?
7. When you first started smoking waterpipe, what information did you know about waterpipe smoking?
8. Did you trust what was being said about waterpipe smoking by other people and why?
9. Do you allow people you have never met before smoke waterpipe with you? Why? Do you trust them?
10. Do all of your friends who don't smoke waterpipe mind that you smoke? Why?
11. Do your parents support the idea of you smoking waterpipe?
12. How has the waterpipe/ hookah influenced the way people make friends?
13. Is there anything else you would like to add before we end?

Prompting/probing questions

- Would you explain further?
- Can you give me an example?
- Would you say more?
- Is there anything else?
- Please describe what you mean.
- I don't understand.

APPENDIX D: ETHICS CLEARANCE CERTIFICATE

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (SCHOOL OF HUMAN & COMMUNITY DEVELOPMENT)

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: MPSYC/13/012 IH

PROJECT TITLE:

Social Capital and Nicotine Dependence in Waterpipe Smoking in a South African University

INVESTIGATORS

Desai Rachana

DEPARTMENT

Psychology

DATE CONSIDERED

24/05/13

DECISION OF COMMITTEE*

Approved

This ethical clearance is valid for 2 years and may be renewed upon application

DATE: 31 July 2013

CHAIRPERSON 

(Professor A Thatcher)

cc Supervisor:

Prof. B Barnes

DECLARATION OF INVESTIGATOR (S)

To be completed in duplicate and **one copy** returned to the Secretary, Room 100015, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure, as approved, I/we undertake to submit a revised protocol to the Committee.

This ethical clearance will expire on 31 December 2015

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

hubble bubble toil and trouble

- **Cancer**
- **Lung damage**
- **Heart disease**
- **TB**
- **Herpes**
- **Early death**

Hubbly bubbly
and cigarettes: **BOTH DEADLY!**

Quit Line 011 720 3145



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+27 (0)172 828 4476