

HYPERTENSION, FAMILY HISTORY, AND THE YOUNG ADULT

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Despite advances in the understanding and treatment of hypertension (HTN), prevalence continues to rise in the United States. Alarming, this increase has also been seen in the younger population, partially related to the growing trend in obesity and poor lifestyle choices. Since perceived risk is a key factor in promoting change, persons viewing the risk factors for developing HTN, such as family history, as a potential threat to their health may be more likely to take action to try and prevent the disease.

The purpose of this study was to explore the differences in knowledge and perceptions of HTN between young adults who have a parental family history of HTN and those with a non-parental or no family history of HTN. The Health Belief Model was used to guide this study.

A descriptive, comparative design was employed. A demographic and Health Belief Model questionnaire on HTN was sent electronically to 500 students at one Midwestern university. Descriptive statistics were used to describe the sample. Independent *t*-tests and chi-square analyses were used to explore the differences in knowledge and perceptions of HTN between the groups.

The final sample size was 27 students. Thirteen of the respondents reported a parental family history of HTN, 10 reported a non-parental family history and four reported no family history of HTN. No significant differences were found between the two groups when comparing knowledge, perceived susceptibility, perceived benefits and barriers and perceived severity of HTN.

The small sample size significantly reduced the power of the study. However, as the prevalence of HTN continues to rise in the younger population, further studies should be performed exploring perceived knowledge and perceptions of HTN.

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To my parents, Harvey and Betty, who have always encouraged me to follow my dreams. To my sister, Judy, whose selfless act of love to my parents allowed me to concentrate on finishing my degree. To the Green Lake Growth Group whose prayers, encouragement and understanding have blessed me beyond words.

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Chapter I

Introduction

One in three adults in the United States has high blood pressure (HBP), also known as hypertension (HTN) (American Heart Association [AHA], 2010; Fields, et al., 2004). Hypertension is a major public health concern as it contributes to excess morbidity, mortality and increased healthcare cost to individuals (AHA, 2010; DeSimone & Crowe, 2009; Huang et al., 1998; National High Blood Pressure Education Program Working Group [NHBPEP Working Group], 1996; Whelton et al., 2002). The prevalence of HTN in young adults aged 20-34 years old is 12.2 % for men and 6.6 % for women (AHA, 2010). Approximately 74.5 million people over the age of 20 are affected by HTN (AHA, 2010). Between 1996 and 2006, the death rate related to HTN increased 19.5 % and the actual number of deaths rose 48.1 % (AHA, 2010). The AHA (2010) estimates the current direct and indirect costs for HBP to be \$76.6 billion.

Hypertension is known as the “silent killer” as symptoms are not always noticeable (Victor et al., 2008; Williams et al., 2002). It is a disease that can affect people of any age and is becoming more prevalent in younger people partially related to the increasing trend in obesity and unhealthy lifestyle choices (NHBPEP Working Group, 1996; Sorof & Daniels, 2002; Williams et al., 2002). There are multiple risk factors that place a person at higher risk for having HTN including family history, obesity, high salt intake, race, smoking, and decreased physical activity (DeSimone & Crowe, 2009; Elmer et al., 2006; Miller & Jehn, 2004; Ostchega, Dillon, Hughes, Carroll, & Yoon, 2007;

Parker, Schmitz, Jacobs, Dengel, & Schreiner, 2007; Sorof & Daniels, 2002; Whelton et al., 2002; Williams et al., 2002). Modifiable risk factors such as appropriate diet and lifestyle choices are prime intervention focus areas as changes to these factors can potentially prevent or reduce the risk of HTN (Bao, Threefoot, Srinivasan, & Berenson, 1995; Lloyd-Jones, Dyer, Wang, Daviglus, & Greenland, 2007). Primary prevention of HTN in young people targeting education regarding HTN as a disease, how it can affect the body, and how to modify lifestyle to help decrease the chances of developing HTN is recommended to help decrease the burden of HTN as they age (Whelton et al., 2002).

There is a lack of understanding regarding how patients and the public perceive HTN and what knowledge and attitudes they have about it (Samal, Greisenegger, Auff, Lang, & Lalouschek, 2007; Volpe & Dedhiya, 2006). Since perceived risk is a key factor in promoting change (Samal et al., 2007), patients viewing the risk factors of HTN as a potential threat to their health and well-being may be more likely to take action to try and prevent the disease (Vale, 2000). Self-reports of family history for HTN has been shown to be accurate (Van der Sande et al., 2001), however when people are unaware of the health histories of their family members, they have a lower perception of the risk for developing HTN (Victor et al., 2008). Since many health care providers underuse family history (Guttmacher, Collins, & Carmona, 2004), there is potential for increasing awareness among patients of their risk for HTN by asking about family history. Use of family history in preventive medicine to assess disease risk and influence of early detection and prevention strategies has been rare (Yoon et al., 2002). This information can lead to education opportunities about HTN which could increase knowledge and

perception of the disease and the need to change lifestyle among patients. Education alone may not be enough to make an impact on blood pressure in the youth (McMurray et al., 2002) but the opportunity is there to focus on this age group using primary prevention and potentially interrupting and preventing the cycle of costly HTN management and complications (Lloyd-Jones et al., 2007; Whelton et al., 2002).

The purpose of this study was to determine if there are differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who do not. The research question is: What are the differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who do not?

Definitions

Conceptual.

Hypertension is defined as sustained systolic blood pressure which occurs as a result of increased peripheral vascular resistance and blood volume within the blood vessels of the body (McCance & Huether, 2006). Diagnosis of HTN includes a reading of greater or equal to 140 over 90 on 3 separate occasions (AHA, 2010). Family history refers to a having a mother, father, grandmother, grandfather, or sibling diagnosed with HTN. A young adult is a person in the early years of adulthood. Knowledge refers to understanding of facts while perception is awareness or comprehension of a concept (Neufeldt & Guralnik, 1988).

Operational.

Hypertension was defined by self-report of subjects stating they have HTN. Parental family history was defined by self-report of the subjects stating they have a mother or father with HTN. While further degrees of family history were asked including grandparents, siblings, aunt and uncle, these were categorized as non-parental family history of HTN. Also, those without a family history of HTN were categorized as non-parental family history of HTN. Young adult in this study referred to someone from 18 to 30 years old. Knowledge and perceptions of HTN were measured via a Health Belief Model (HBM) questionnaire on HTN that was developed by Desmond, Price, Roberts, Pituch, and Smith (1992).

Assumptions

There were several assumptions being made in this research including:

1. Those who have a parental family history of HTN will have more knowledge of HTN than those who do not.
2. The perception of the young people who take the survey regarding severity, susceptibility, benefits and barriers of HTN prevention will assist primary care providers to better understand how to communicate with this generation about HTN as a chronic disease.
3. Those who are made aware of increased risk of HTN will act to attain or maintain a positive state of health (Finfgeld, Wongvatunyu, Conn, Grando, & Russell, 2003).

Significance to Nursing

Advanced practice nurses (APNs) approach patients holistically and have a role in educating, motivating and helping patients to understand disease processes and improve quality of life (Watts et al., 2009). The combined emphasis of primary prevention along with health promotion and comprehensive primary care leads to effective and high-quality care (Burgener & Moore, 2002). Primary prevention targeted at the young adult population by APNs may subsequently decrease prevalence of HTN as the population ages. With the symptoms of HTN being “silent,” the need for increased awareness of all patients is essential.

Summary

The incidence and prevalence of HTN continues to increase despite advancements in medical knowledge (DeSimone & Crowe, 2009; Din-Dzietham, Liu, Bielo, & Shamsa, 2007; Drukteinis, et al., 2007; Fields et al., 2004; Hekler et al., 2008; Kavey et al., 2003; McMurray et al., 2002; Oliveria, Chen, McCarthy, Davis & Hill, 2005; Wang & Wang, 2004; Whelton et al., 2002; Winnicki et al., 2006). Several of the risk factors for HTN are modifiable including obesity, smoking, salt intake and lack of physical activity, yet these continue to increase in the young adult population (Din-Dzietham et al., 2007; Elmer et al., 2006; Fields et al., 2004; Hayman et al., 2007; Hayman et al., 2004; McMurray et al., 2002; Miller, Berra, & Long, 2010; Parker et al., 2007; Sit et al., 2010; Vale, 2000; Wang & Wang, 2004). Strategies to identify factors that may increase

knowledge and perception of HTN are needed to tailor specific interventions at promoting primary prevention of HTN (DeSimone & Crowe, 2009; Fields et al., 2004; Hayman et al., 2007; Leung et al., 2005; Lloyd-Jones et al., 2007; Mochari-Greenberger, Mills, Simpson, & Mosca, 2010; Oliveria et al., 2005; Samal et al., 2007; Vale, 2000; Whelton et al., 2002; Williams et al., 2001; Winnicki et al., 2006).

Chapter II

Theoretical Framework & Review of Literature

The purpose of this study was to determine if there were differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who do not. The HBM was used as the theoretical framework and has a desired outcome on an individual to act in such a way as to attain or maintain a positive health state (Finfgeld et al., 2003). A review of literature was done to obtain information about HTN, risk and prevalence within the young adult, family history and HTN, as well as knowledge and perception of HTN.

Theoretical Framework

The HBM was used as the theoretical framework for this research study. This model was developed in the 1950s by social psychologists with the intent to improve the public's use of preventive services (McEwen & Wills, 2007). The HBM focuses on personal opinions, attitudes and beliefs of individuals and is used to predict their health behaviors. The constructs within the model include perceived susceptibility to the health problem, perceived severity, perceived benefits, perceived barriers, and cues to action (McEwen & Wills, 2007; see Appendix A Figure A-1). The first four constructs suggest the level of a person's readiness to take action. This theory involves a person's opinion of chances of getting a condition (susceptibility), the seriousness of a condition and subsequent problems (severity), how effective an advised action will be for reducing the

risk or seriousness of the disease (benefits) weighed against the perceived real and psychological cost (barriers) of the advised actions. The cues to action are used to “activate the readiness to act and stimulate overt behaviors” (McEwen & Wills, 2007, p. 318) by an individual to change his or her behavior.

The variable being explored in this study was parental family history of HTN. This variable fits in the HBM as one of the cues to action for an individual since having a parental family history of HTN is a risk factor for developing HTN. There is an awareness of a potential health threat when a person has a parental family history of HTN. This can lead to development of knowledge and perceptions of HTN. The level of knowledge and perception may depend upon the young adults’ opinions of how susceptible they are to HTN, how serious or severe HTN is in their opinion, and the perceived benefits of taking preventive action minus the perceived barriers to taking the preventive action. (See Appendix A Figure A-1.)

Case Study

Martha is a 24 year old African American paralegal who has a strong family history of HTN. Both of her parents and one set of grandparents have been dealing with the effects of HTN since Martha can remember. As her parents and grandparents age, Martha is seeing how their health has been deteriorating including her father having a heart attack and her grandmother suffering a mild stroke. These perceptions have been Martha’s cues to action. Martha perceives that she is susceptible to HTN and that it could be serious if she does not take care of herself. She discusses her concerns with the

nurse practitioner at her annual wellness visit. The nurse practitioner's role is to assist in making Martha aware of and helping remove barriers to changing health behaviors and also assisting Martha by targeting several beliefs at once (Finfgeld et al., 2003). At this point in her life, Martha sees the benefits of having her blood pressure taken at least yearly, watching her weight and sodium intake, limiting alcohol intake and not smoking to help in keeping her blood pressure in the recommended range. She perceives the barriers to changing behaviors as her social group likes to go out drinking on the weekends and always smokes one-half to one pack of cigarettes while in the bars. Martha perceives a threat in HTN and is willing to take the recommended action to help prevent adverse effects of the disease despite the barriers identified. (See Appendix A Figure A-2.)

Review of Literature

Hypertension.

Hypertension is a major public health concern as it contributes to excess morbidity, mortality and increased healthcare cost to individuals (AHA, 2010; DeSimone & Crowe, 2009; Huang et al., 1998; NHBPEP Working Group, 1996; Whelton et al., 2002). Hypertension is defined as sustained systolic blood pressure which occurs as a result of increased peripheral vascular resistance and blood volume within the blood vessels of the body (McCance & Huether, 2006). Diagnosis of HTN includes a reading of greater or equal to 140 over 90 on 3 separate occasions (AHA, 2010).

The recommendations for HTN treatment have changed drastically through the years. Early on, no treatment was recommended as it was felt that HTN was necessary (“essential”) to a person’s health (Moser, 2006). Now with the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) report, there are multiple adult categories including normal, prehypertension, stage I and Stage II (Chobanian et al., 2003). There have been multiple studies where the authors have recommended that the focus should be on primary prevention in young adults to help prevent the development of HTN (Dannenberg, Garrison, & Kannel, 1988; Fields et al., 2004; Grundy et al., 1998; Hayman et al., 2007; Hayman et al., 2004; Huang et al., 1998; Kavey et al., 2003; Williams et al., 2002) but this education does not seem to be happening.

Hypertension risk and prevalence in the young adult.

Despite advances in treatment, the number of patients diagnosed with HTN who are controlled remains low (Hekler et al., 2008; Oliveria et al., 2005; Wang & Wang, 2004). Risk factors for HTN include older age, obesity, hyperlipidemia, increased intake of dietary sodium, smoking, sedentary lifestyle, diabetes mellitus, African American ancestry, excess intake of alcohol, and family history (Bao et al., 1995; Bartosh & Aronson, 1999; Burke, et al., 1991; Din-Dzietham et al., 2007; Drukteinis, et al., 2007; Jackson et al., 2008; Miller et al., 2010; Vasan, Larson, Leip, Kannel, & Levy, 2001; Whelton et al., 2002). If left untreated or under controlled, HTN is strongly related to increased risk of cardiovascular disease, cerebrovascular disease and end-stage renal disease (Bartosh & Aronson, 1999; DeSimone & Crowe, 2009; Fields et al., 2004;

Holland et al., 2008; Leung et al., 2005; Miura et al., 2001; Ostchega et al., 2007; Strong et al., 1992; Williams et al., 2002).

The prevalence of HTN in young adults aged 20-34 is 12.2 % for men and 6.6 % for women with HTN affecting 74.5 million people over the age of 20 (AHA, 2010). There is an increase in HTN prevalence despite the increased awareness of the problem (Winnicki et al., 2006). Part of this increase could be due to the misperception of HTN and side effects that are felt which in turn would trigger action by an individual (Savoca et al., 2009; Victor et al., 2008; Volpe & Dedhiya, 2006). Other reasons for the increase in prevalence could be related to the increase in the obesity trend, dietary habits of individuals and decreased physical activity, which are all modifiable risk factors for HTN (Parker et al., 2007; Sit, et al., 2010; Sorof & Daniels, 2002; Strong et al., 1992).

Why would a young adult ignore risk factors that could lead to a potentially debilitating disease? Some reasons include they do not perceive the choices they are making as risk for the disease (Samal et al., 2007), their health literacy on this subject may be low (Alexander, Gordon, Davis, & Chen, 2003; Schillinger et al, 2002), they do not see a primary care provider on a regular basis (Mochari-Greenberger et al., 2010; Victor et al., 2008), or they may be used to healthcare having a focus on acute illness with a need for treatment on an urgent basis and having a passive instead of active role in their health (Wagner et al., 2001).

Family history and hypertension.

Family history is an independent risk factor for HTN (Goldstein, Shapiro, & Guthrie, 2006) and increases the risk of HTN over the general population by two to five

times (Yoon et al., 2002). Winnicki et al. (2006) examined how family history affected lifestyle choices and progression of HTN in 780 who were participants that were interviewed regarding medical and family history and given a lifestyle assessment questionnaire. Each participant then underwent a physical exam along with physiological measurements (anthropometric, blood chemistry and blood pressure). This was not an interventional study so no individualized programs were offered, but the participants did receive general information on nonpharmacological measures on management of HTN. The authors found that those with a positive family history had more awareness of the disease and tried some nonpharmacological changes to help control the progression of the disease. Of interest, those in the study who had a negative family history for HTN and did not have an emphasis made to them about nonpharmacological management had an increased risk in progression to HTN that required medication when compared to those with a positive family history.

There is a strong link between family history of HTN and development of HTN (Anglum, 2009; Goldstein & Shapiro, 2000; Goldstein et al., 2006; Grundy et al., 1998; Lauer & Clark, 1989; Malbora et al., 2010; Strong et al., 1992; Winnicki et al., 2006). It is estimated that the heritable portion of BP ranges between 35 to 65 % with parental history increasing the risk of developing HTN twofold (Wang et al., 2008) which makes parental HTN a strong predictor of HTN (Burke, et al., 1991; Malbora et al., 2010; Winnicki et al., 2006). It has been suggested that family history of HTN has an additive effect on age-associated risk of developing HTN (Zhou, Chen, Sun, & Liu, 2008).

Knowledge and perceptions of hypertension.

Knowledge of HTN has been measured in those who already have HTN, but is limited in those who are young or have not yet been diagnosed with the disease (Oliveria et al., 2005). Desmond et al. (1992) performed a study exploring low-socioeconomic black and white male and female adolescents' knowledge and perceptions of HTN. The instrument used was developed for this study using the HBM incorporating the aspects knowledge, beliefs about severity and susceptibility to risk factors, and benefits or barriers of treatment in regards to HTN. A total of 167 black and 218 white adolescents from five inner-city high schools were surveyed. About two-thirds of the students had a family history of HTN. The majority of students surveyed reported having had their blood pressure taken at some point in the past, but most could not remember what it was. About half of the students reported having had a class covering blood pressure. The knowledge level of HTN of the adolescents in this study was not high, though. There was only one significant difference noted in the knowledge items on the questionnaire. White males were more likely to agree than black males that HTN causes eye problems. Regarding the perceived severity questions, three significant differences were noted between black and white male respondents but not the female respondents. More black males were not sure if HTN would cause death or breathing problems when compared to white males and more black males believed HTN would make someone feel sick compared to white males. Perceived benefits of being treated for HTN did not differ significantly among the male respondents, but one significant difference was found among the females where more black females agreed that not having to watch one's diet

being a benefit of preventing HTN. No differences were found among the students in the questions about perceived barriers to HTN prevention. Perceived susceptibility questions did not differ among the male respondents. Among the female respondents one significant difference was found in that a larger percent of black females agreed that blacks are more susceptible to development of HTN than whites.

A study was conducted in Northern Ireland regarding the awareness of HTN and measures to prevent it (Willis, Gaffney, & Yarnell, 2000). There were 1138 respondents aged 16 and older. There was a mix of people with and without the disease included in the survey. While knowledge about HTN being detrimental to health was high, preventative measure knowledge was low. It was found that there was little difference in responses when looking at socio-economic or age groups.

Hypertension education needs to be improved in the general population and in the hypertensive population (Oliveria et al., 2005). While there is a general idea of the seriousness of HTN, there is a lack of knowledge of individual risk factors (Savoca et al., 2009). When someone does not perceive a risk for an adverse effect from a disease then it will be harder to promote behavior changes and preventative action (Samal et al., 2007). There is a lack of understanding in the knowledge and perceptions of patients and the public regarding HTN (Volpe & Dedhiya, 2006). When there is a lack of knowledge of family history of HTN, the perceived risk for the disease is low (Victor et al., 2008).

Summary

The HBM was developed to improve the public's use of primary preventive services. Little research has been found by the researcher targeted at young people with a family history of HTN. By applying this model to young people and their knowledge and perceptions of HTN, the researcher was able to understand what their perception was in terms of susceptibility, severity, benefits and barriers to taking action against HTN. This understanding will be able to be shared with primary care providers to tailor primary prevention education of HTN to this age group with the hopes of decreasing the prevalence of HTN.

Chapter III

Methodology

The purpose of this study was to determine if there are differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who do not. This is an overview of the research study methodology. A brief explanation of the research design, population, sample, setting, data collection and analysis are given. Limitations of the study are also provided.

Design of the Study

This study used a descriptive, comparative design. The intent was to see if there were differences in knowledge and perceptions of HTN between young adults who have a parental family history of HTN and those who do not. An extraneous variable that needed to be controlled for was a young adult who had been diagnosed with HTN. The knowledge and perception of HTN for this young person would likely be different than if he or she had a family history alone. There were two participants who indicated they had been diagnosed with HTN and were excluded from the study.

Population, Sample and Setting

The population of this study was young adults. The convenience sample was college students attending one Midwestern state university. Inclusion criteria were young

adults aged 18 through 30. Exclusion criteria were young adults outside that age range and a diagnosis of HTN.

Data Collection Instruments

A demographic tool was distributed which included age, gender, race, if there was a parental family history of HTN, if the participant had a diagnosis of HTN, any type of previous education regarding HTN, if a blood pressure had been checked within the last year, if annual physicals are obtained and if a concern about HTN is present (see Appendix B). In order to maintain understanding of medical language, the term high blood pressure (HBP) rather than HTN was used in the survey instruments.

There was also a HTN questionnaire distributed which was being used with permission from Elbert Glover editor of the *American Journal of Health Behavior* (see Appendix C). The questionnaire was developed for a study to assess knowledge and perceptions regarding HTN in adolescents based on the HBM (Desmond, Price, Roberts, Pituch, & Smith, 1992) (See Appendix B). The questionnaire tool development occurred in three stages. The first stage involved an elicitation questionnaire, the second stage built on this questionnaire along with using the HBM to make sure all aspects of HTN were examined. The third stage involved pilot testing the questionnaire to establish validity, reliability, acceptability, and readability. This combination of stages provided the basis for the final questionnaire. Study instruments have validity and reliability enhanced when elicitation questionnaires are used (Desmond et al., 1992).

There were several different types of information obtained within this questionnaire including blood pressure knowledge, and items on severity, susceptibility, benefits and barriers. The responses for the questionnaire consisted of three categories: “agree,” “disagree,” and “not sure” since previous research showed difficulty understanding and using a Likert response format by these students (Desmond et al., 1992). Desmond et al. (1992) conducted construct validity on the questionnaire by factor analysis. A scree plot showed the Eigen value for Factor 1 to be large (11.3) which meant that the subscales of the questionnaire measured one construct (81% of the items loaded on Factor 1). Also assessed by the researchers was internal reliability using Cronbach’s alpha obtaining a coefficient of .93. The instrument was given twice, one week apart to a class of 22 high school students which showed the stability reliability to only be .73. While values above .80 are usually considered good, a lower one may be acceptable (Polit & Beck, 2008). The SMOG readability formula was used to ascertain that the questionnaire had an eighth grade reading level.

This questionnaire was appropriate for this research study as knowledge and perceptions of HTN within the HBM were measured. The original participants were adolescents, but the instrument was appropriate for use with this older group of participants as the reading level was acceptable.

Data Collection Procedures

Collection of data was done after approval from the Institutional Review Board (IRB) was granted (see Appendix D). Human rights were protected in this research as

there was minimal to no risk of harm. An informational letter was given to participants explaining their rights, risks and benefits. As participants took the survey, they may have developed some worry over the possible effects that HTN can have on their bodies which could have caused minimal adverse effects on their bodies. Surveys were sent out electronically twice using the Qualtrics survey system two weeks apart to 500 randomized emails obtained through the Division of Student Affairs office. The email contained information regarding the voluntariness of filling out the survey as well as a description of the information being looked at by the researcher. Consent was implied when the participant filled out the survey.

Data Analysis Procedures

Data analysis was completed using Statistical Package for the Social Sciences (SPSS) 17. Descriptive comparative statistics were used to describe the sample and survey results. Chi-square analyses and independent *t*-tests were used to explore the differences in knowledge and perceptions of HTN between the two groups (those with a parental family history of HTN and those without).

Limitations

There are several limitations anticipated within this research:

1. The participants self-reported on the information asked.

2. The participants may not have known their family history or may not complete data if they are not sure how to answer the questions being asked.
3. The sample is one of convenience and not randomized which will limit the generalizability of the results.

Summary

The purpose of this study was to determine if there were differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who do not. This study used a descriptive comparative design. The convenience sample was college students attending one Midwestern state university. Chi-square analyses and independent *t*-tests were used to explore the differences in knowledge and perceptions of HTN between the two groups. This understanding can potentially move primary prevention forward not only at the primary care level, but also by school nurses and health classes at the elementary, secondary and college levels.

Chapter IV

Results and Discussion

The purpose of this study was to determine if there are differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who do not. Surveys were sent out electronically twice using the Qualtrics survey system two weeks apart to 500 randomized emails obtained through the Division of Student Affairs office at one Midwestern University. There were several different types of information obtained including blood pressure knowledge, and items on severity, susceptibility, benefits and barriers. The responses for the questionnaire (see Appendix B) consisted of three categories: “agree,” “disagree,” and “not sure”.

Results

Demographics.

There were a total of 29 students who responded to the email request. Two of these respondents reported having HTN and were excluded from subsequent analyses resulting in a final sample size of 27 students and a response rate of 18.5%. Ages of the sample ranged from 18 to 29 years old with a mean age of 21.9 years (standard deviation [SD] = 3.2). The sample was split into two groups, those with a parental family history of HTN and those without. There were 13 respondents who had a parental family history of HTN with a mean age for the group being 22.4 (SD = 3.7). The other group (consisting of four who had no family history of HTN and 10 with non-parental family

history of HTN) had a mean age of 21.4 ($SD = 2.6$). See Table 1 for further demographic information related to gender, race, current year in school and ages of respondents.

Table 1

Demographics

	Overall <i>n</i> = 27 <i>f</i> (%)	Parental History <i>n</i> = 13 <i>f</i> (%)	No Parental History <i>n</i> = 14 <i>f</i> (%)
Gender			
Male	5 (18)	4 (31)	1 (7)
Female	22 (82)	9 (69)	13 (93)
Race			
Caucasian	26 (96)	13 (100)	13 (93)
Asian	1 (4)	0 (0)	1 (7)
Year in School			
Freshman	3 (11)	1 (8)	2 (14)
Sophomore	7 (26)	3 (23)	4 (29)
Junior	6 (22)	4 (31)	2 (14)
Senior	8 (30)	3 (23)	5 (36)
Graduate	3 (11)	2 (15)	1 (7)
Age			
18	1 (4)	1 (8)	0 (0)
19	2 (7)	0 (0)	2 (14)
20	10 (37)	6 (46)	4 (29)
21	5 (19)	1 (8)	4 (29)
22	1 (4)	0 (0)	1 (7)
23	2 (7)	1 (8)	1 (7)
24	2 (7)	1 (8)	1 (7)
27	1 (4)	1 (8)	0 (0)
29	3 (11)	2 (15)	1 (7)

Note: *n* = number of participants; *f* = frequency; % = percent

Knowledge.

Items one through 15 of the HBM questionnaire reflected knowledge of HTN.

Chi-square (2 x 3) analysis of these items showed no significant differences between the groups. The mean knowledge score was 12.5 ($SD = 1.9$) for those with a parental family

history and 11.0 ($SD = 2.1$) for those with a non-parental family history. Independent t -tests were used to determine if there were significant differences in knowledge scores between those with a parental family history of HTN and those without. No significant differences were found. The average percent correct overall of the knowledge questions was 78.3%. One hundred percent of the respondents knew that HTN can cause heart problems but only 15% knew that doctors often do not know the cause of HTN. The three lowest scoring HTN knowledge questions were “HBP can cause eye problems” (52%), “Usually cannot tell if you have HBP” (44%) and “Often doctors do not know cause of HBP” (15%). Overall, scores for the majority of knowledge questions showed two-thirds of the respondents answering correctly. See Table 2 for number of respondents who answered each of the knowledge questions correctly.

Table 2

Knowledge of Hypertension: Correct Responses

Questions	Responded Correctly		
	Overall $n=27$ $f(\%)$	Parental History $n=13$ $f(\%)$	No Parental History $n=14$ $f(\%)$
1. Staying at normal weight helps control BP. (T)	26 (96)	13 (100)	13 (93)
2. Reducing stress helps control BP. (T)	26 (96)	13 (100)	13 (93)
3. Reducing salt helps control BP. (T)	25 (93)	13 (100)	12 (86)
4. Reducing alcohol helps control BP. (T)	25 (93)	11 (85)	14 (100)
5. Exercising may help control BP. (T)	25 (93)	12 (92)	13 (93)
6. Not smoking can help control BP. (T)	26 (96)	13 (100)	13 (93)
7. Reducing fat may help control BP. (T)	25 (93)	13 (100)	12 (86)
8. Drugs can help control BP. (T)	21 (78)	10 (77)	11 (79)
9. HBP makes kidneys work harder. (T)	18 (67)	10 (77)	8 (57)
10. HBP can cause heart problems. (T)	27 (100)	13 (100)	14 (100)

(continued)

Questions	Responded Correctly		
	Overall	Parental History	No Parental History
	<i>n</i> =27 <i>f</i> (%)	<i>n</i> =13 <i>f</i> (%)	<i>n</i> =14 <i>f</i> (%)
11. HBP can cause strokes. (T)	23 (85)	13 (100)	10 (71)
12. HBP can cause eye problems. (T)	14 (52)	9 (69)	5 (36)
13. BP is force of blood against walls. (T)	20 (74)	11 (85)	9 (64)
14. Often doctors do not know the cause of HBP. (T)	4 (15)	3 (23)	1 (7)
15. Usually you cannot tell if you have HBP. (T)	12 (44)	6 (46)	6 (43)

Note: *n* = number of participants; *f* = frequency; % = percent; BP = Blood Pressure; HBP = High Blood Pressure; T = True.

Perceived severity.

Items 16 through 22 reflected perceived severity of HTN. Chi-square (2 x 3) analysis indicated no significant differences between groups. In this section, one of the questions was similar to one of the knowledge questions, but the results were different. When asked “Having HBP would cause heart problems,” 92.3% of those with a parental family history of HTN agreed, while only 78.6% of those with a non-parental family history agreed. The knowledge question “HBP can cause heart problems” was answered at 100%. Table 3 shows the percent of respondents who agreed or were not sure in response to the perceived severity items on the questionnaire.

Table 3

Perceptions of Hypertension: Perceived Severity

Questions	Parental History		No Parental History	
	Agree	Not Sure	Agree	Not Sure
	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)
16. Having HBP would cause headaches.	2(15.4)	8(61.5)	2(14.3)	9(64.3)

(continued)

Questions	Parental History		No Parental History	
	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)
17. Having HBP would cause heart problems.	12(92.3)	0(0.0)	11(78.6)	2(14.3)
18. Having HBP would prevent you from doing a lot of things.	4(30.8)	4(30.8)	2(14.3)	5(35.7)
19. Having HBP would cause you to die.	5(38.5)	3(23.1)	4(28.6)	3(21.4)
20. Having HBP would cause breathing problems.	8(61.5)	3(23.1)	4(28.6)	6(42.9)
21. Having HBP would make you feel sick.	4(30.8)	5(38.5)	1(7.1)	7(50.0)
22. Having HBP would make you feel dizzy.	4(30.8)	7(53.8)	4(28.6)	6(42.9)

Note: *f* = frequency; % = percent; HTN = Hypertension; HBP = High Blood Pressure.

Perceived benefits.

Items 23 through 30 measured the perceived benefits to preventing HTN. Chi-square (2 x 3) analysis indicated no significant differences between groups. When asked, “In preventing HBP you would be healthier” those with a parental family history agreed at a 92.3% rate but 100% of those with a non-parental family history agreed. The next question, “In preventing HBP you would live longer” 100% of those with a parental family history of HTN agreed, whereas only 64.3% of those with a non-parental family history agreed and 28.6% were not sure. Table 4 lists the percent of respondents who agreed or were not sure in response to the perceived benefit items on the questionnaire.

Perceived barriers.

Items 31 through 34 reflected perceived barriers to preventing HTN. Chi-square (2 x 3) analysis indicated no significant differences between groups. Barriers in

preventing HTN included not being able to like salty foods, having to take medicine daily, and not being able to eat foods you like. None of the respondents from either group agreed with these statements, the majority disagreed with a minority indicating they were not sure about these items. Table 5 lists the percent of respondents who agreed or were not sure in response to the perceived barrier items on the questionnaire.

Table 4

Perceptions of Hypertension: Perceived Benefits

Questions	Parental History		No Parental History	
	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)
23. In preventing HBP you would be healthier.	12 (92.3)	0 (0.0)	14(100.0)	0 (0.0)
24. In preventing HBP you would live longer.	13(100.0)	0 (0.0)	9 (64.3)	4 (28.6)
25. In preventing HBP you would not have a heart attack.	1 (7.7)	4 (30.8)	5 (35.7)	3 (21.4)
26. In preventing HBP you would not have to watch diet.	1 (7.7)	1 (7.7)	1 (7.1)	1 (7.1)
27. In preventing HBP you would not have to take medicine.	5 (38.5)	1 (7.7)	4 (28.6)	6 (42.9)
28. In preventing HBP you could be more active.	11 (84.6)	1 (7.7)	12 (85.7)	1 (7.1)
29. In preventing HBP you would be more relaxed.	10 (76.9)	3 (23.1)	9 (64.3)	3 (21.4)
30. In preventing HBP you would feel better.	12 (92.3)	0 (0.0)	10 (71.4)	3 (21.4)

Note: *f*= frequency; % = percent; HTN=Hypertension; HBP= High Blood Pressure.

Perceived Susceptibility.

Items 35 through 50 reflected perceived susceptibility to HTN. Chi-square (2 x 3) analysis indicated no significant differences between groups. There were two questions

that 100% of the respondents from at least one group agreed with. The first question “Stress in your life makes you more likely to have HBP” had 100% of those with a parental family history agree while 92.9% of those with a non-parental family history agreed. The other question “Heredity makes you more likely to have HBP” had 100% of those with a non-parental family history of HTN agreeing while 92.3% of those with a parental family history agreed. Table 6 gives the percent of respondents who agreed or were not sure in response to the perceived susceptibility items on the questionnaire.

Table 5

Perceptions of Hypertension: Perceived Barriers

Questions	Parental History		No Parental History	
	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)
31. In preventing HBP it is hard to follow a diet.	2 (15.4)	4(30.8)	3(21.4)	2(14.3)
32. In preventing HBP you couldn't like salty food.	0 (0.0)	2(15.4)	0 (0.0)	4(28.6)
33. In preventing HBP you would have to take medicine every day.	0 (0.0)	3(23.1)	0 (0.0)	3(21.4)
34. In preventing HBP you can't eat the food you like.	0 (0.0)	3(23.1)	0 (0.0)	1 (7.1)

Note: *f* = frequency; % = percent; HTN = Hypertension; HBP = High Blood Pressure.

Table 6

Perceptions of Hypertension: Perceived Susceptibility

Questions	Parental History		No Parental History	
	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)
35. I am more likely to have HBP than other my age, sex.	5 (38.5)	3 (23.1)	1 (7.1)	3 (21.4)

(continued)

Questions	Parental History		No Parental History	
	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)	Agree <i>f</i> (%)	Not Sure <i>f</i> (%)
36. Blacks are more likely than whites to have HBP.	5 (38.5)	5 (38.5)	5 (35.7)	7 (50.0)
37. Whites are more likely than blacks to have HBP.	2 (15.4)	5 (38.5)	1 (7.1)	7 (50.0)
38. Eating salt makes you more likely to have HBP.	12 (92.3)	0 (0.0)	11 (78.6)	2 (14.3)
39. Eating salt makes you less likely to have HBP.	0 (0.0)	1 (7.7)	0 (0.0)	1 (7.1)
40. Being careful about food you eat makes you more likely to have HBP.	0 (0.0)	1 (7.7)	1 (7.1)	1 (7.1)
41. Being careful about foods you eat makes you less likely to have HBP.	10 (76.9)	1 (7.7)	12 (85.7)	1 (7.1)
42. Stress in your life makes you more likely to have HBP.	13(100.0)	0 (0.0)	13 (92.9)	0 (0.0)
43. Stress in your life makes you less likely to have HBP.	0 (0.0)	1 (7.7)	1 (7.1)	0 (0.0)
44. Heredity makes you more likely to have HBP.	12 (92.3)	0 (0.0)	14(100.0)	0 (0.0)
45. Heredity makes you less likely to have HBP.	2 (15.4)	1 (7.7)	0 (0.0)	1 (7.1)
46. Taking care of yourself makes you more likely to have HBP.	2 (15.4)	0 (0.0)	0 (0.0)	0 (0.0)
47. Taking care of yourself makes you less likely to have HBP.	10 (76.9)	0 (0.0)	13 (92.9)	1 (7.1)
48. Being poor makes you more likely to have HBP than non-poor.	3 (23.1)	4 (30.8)	3 (21.4)	3 (21.4)
49. Being non-poor makes you more likely to have HBP than poor.	0 (0.0)	4 (30.8)	1 (7.1)	3 (21.4)
50. Being young makes you more likely to have HBP than older people.	3 (23.1)	2 (15.4)	0 (0.0)	2 (14.3)

Note: *f* = frequency; % = percent; HTN = Hypertension; HBP = High Blood Pressure.

Discussion

When comparing this study with Desmond et al. (1992), there are several similarities. One is the high percentage of respondents who knew that HTN can cause

heart problems. Another is the low percentage of respondents who knew that doctors often do not know the cause of HTN. There were high percentages in both studies of respondents who agreed that HTN could cause strokes. Desmond et al. (1992) found that in the male respondents, at least 60% agreed with five of the eight perceived benefits of preventing HTN. This researcher found that both groups had over 60% agreement in those same questions from this category.

There are also several differences between these two studies. One difference is the amount of respondents to the questionnaire. Desmond et al. (1992) surveyed 385 adolescents face to face. This researcher distributed the questionnaire to 500 subjects via email but only had 29 respondents. The average of correct responses for the knowledge questions was lower in the Desmond et al. (1992) study (64%) than in this study (78.3%). Within each of the sections of the questionnaire, Desmond et al. (1992) found at least one significant finding when comparing black and white male and then black and white female responses. This researcher did not find any significant findings when comparing those with a parental family history and those with a non-parental family history of HTN.

Within this study, it was noted that there is a high level of awareness that HTN can cause heart problems. There was a very low awareness that HTN can cause adverse effects on the eyes and this would be one area of education that can be targeted by nurse practitioners. Other areas of education that can be targeted are modifiable risk factors and that providers do not always know the cause of HTN.

Winnicki et al. (2006) found that people with a family history of HTN had more awareness of the disease and made changes to help control progression. Willis, Gaffney,

and Yarnell (2000) also noted that knowledge of the detrimental effects of HTN was high in those with and without a family history, but awareness of preventative measures was low. Within this research, overall awareness was similar between the groups which knew that stress and family history are factors that increase susceptibility to developing HTN. Perceived severity of HTN was high regarding heart problems, but low when other target organs were discussed.

Summary

While the number of surveys distributed was large, the response rate was very low in this study. Overall, correct responses to the knowledge questions of HTN were 78.3%. Awareness of HTN potentially causing heart problems was high, but other areas of the body that can be affected has a lesser degree of awareness. No significant findings were obtained within this research.

Chapter V

Summary, Conclusions and Recommendations

The purpose of this study was to determine if there were differences in knowledge and perception of HTN between young adults who have a parental family history of HTN and those who did not. Using the HBM as the theoretical framework, a questionnaire on HTN knowledge and perceptions of severity, benefits and barriers of preventing and susceptibility to HTN was distributed electronically.

There were 29 responses out of a possible 500 participants surveyed. Two of the responders reported having HTN and were excluded from further analysis. Within the questionnaire, 12 of the 15 knowledge questions had correct responses from two-thirds of the respondents. The parental family history group answered seven of the 15 knowledge questions 100% correctly. While the group with a non-parental family history only answered two of the 15 questions at 100%. However, no statistically significant differences in overall knowledge score between the groups were found. The parental family history group had a higher percentage of agreement than the other group when comparing the perceived severity questions. Perceived barriers to preventing HTN had low rates of agreement from both groups. Overall, no statistically significant differences were found between the groups.

Conclusions

While there were no significant findings when analyzing the data from this study, there is relevance to the HBM as the theoretical framework for this study. Family history of HTN is a cue to action to change behaviors that can be modified to help prevent HTN. Those with a parental family history agreed at a higher rate than those with a non-parental family history for perceived susceptibility of eating salt and having stress contributing to HTN, but agreed at a lower rate about the role of watching overall diet, heredity, and caring for self and the effect on HTN. The highest perceived severity responses within this study by those with a parental family history were the effect HTN can have on the heart and possible impact on breathing. The items of perceived benefits of controlling HTN were being healthier, living longer, being able to be more active, being more relaxed and feeling better. Perceived barriers to HTN prevention were low in both groups.

Implications

Implications for APNs include the need to educate younger adults about HTN. Making patients of this age group aware of the modifiable risk factors can help to break down perceived barriers and reinforce perceived benefits of controlling HTN. During an office visit, APNs can assess for readiness to take action to help prevent or control HTN.

Recommendations for Further Research

Further research is needed in the young adult population to better understand differences in knowledge and perception of HTN. While this study allowed the researcher to elicit some interesting information, no significant findings were obtained. Performing a similar study on those who already have HTN may elicit more information on baseline knowledge as well as perceived susceptibility, severity, benefits and barriers of HTN. Research with primary care providers (PCPs) in terms of their perception of when to start discussing HTN and what type of history questions are asked of their patients could elicit information on if PCPs should be targeted to help increase awareness of the growing problem of HTN. Looking at groups with different degrees of family history (parental versus grandparents) and those with no family history may also give better understanding of how the young adult population understands HTN.

Summary

While no significant findings were obtained within this research study, awareness of HTN as a potential problem in the young is needed since prevalence continues to increase. Advanced practice nurses are the ideal PCPs to promote primary prevention of HTN in all age groups and to work holistically with patients increasing awareness of this silent disease. Further research is needed to assess knowledge and perception of those without HTN but who may have risk factors.

Appendixes

Appendix A

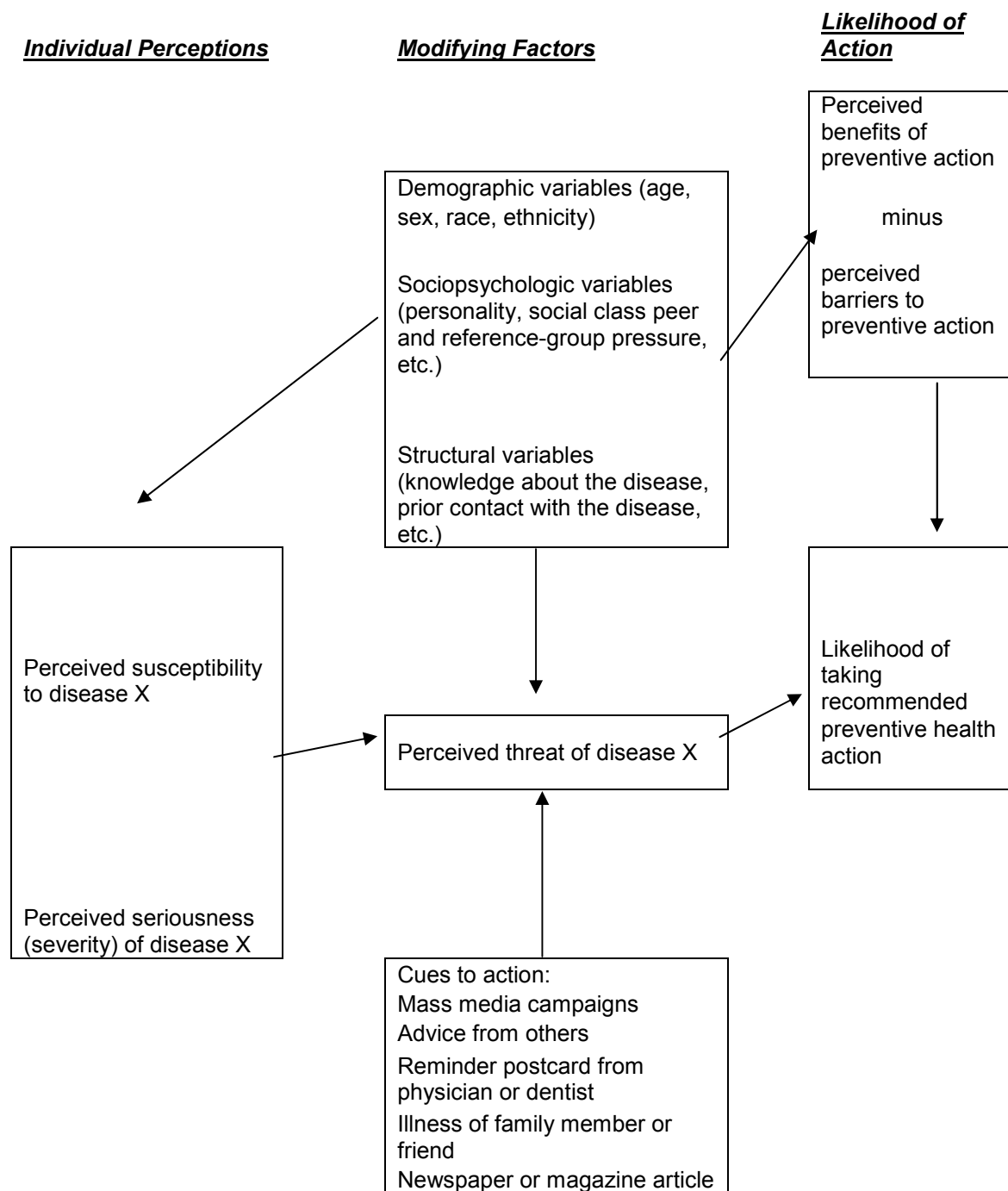


Figure A-1: The Health Belief Model. From McEwen, M. & Wills, E. (2007). *Theoretical basis for nursing* (2nd ed.). Philadelphia: Lippincott Williams & Wilkins.

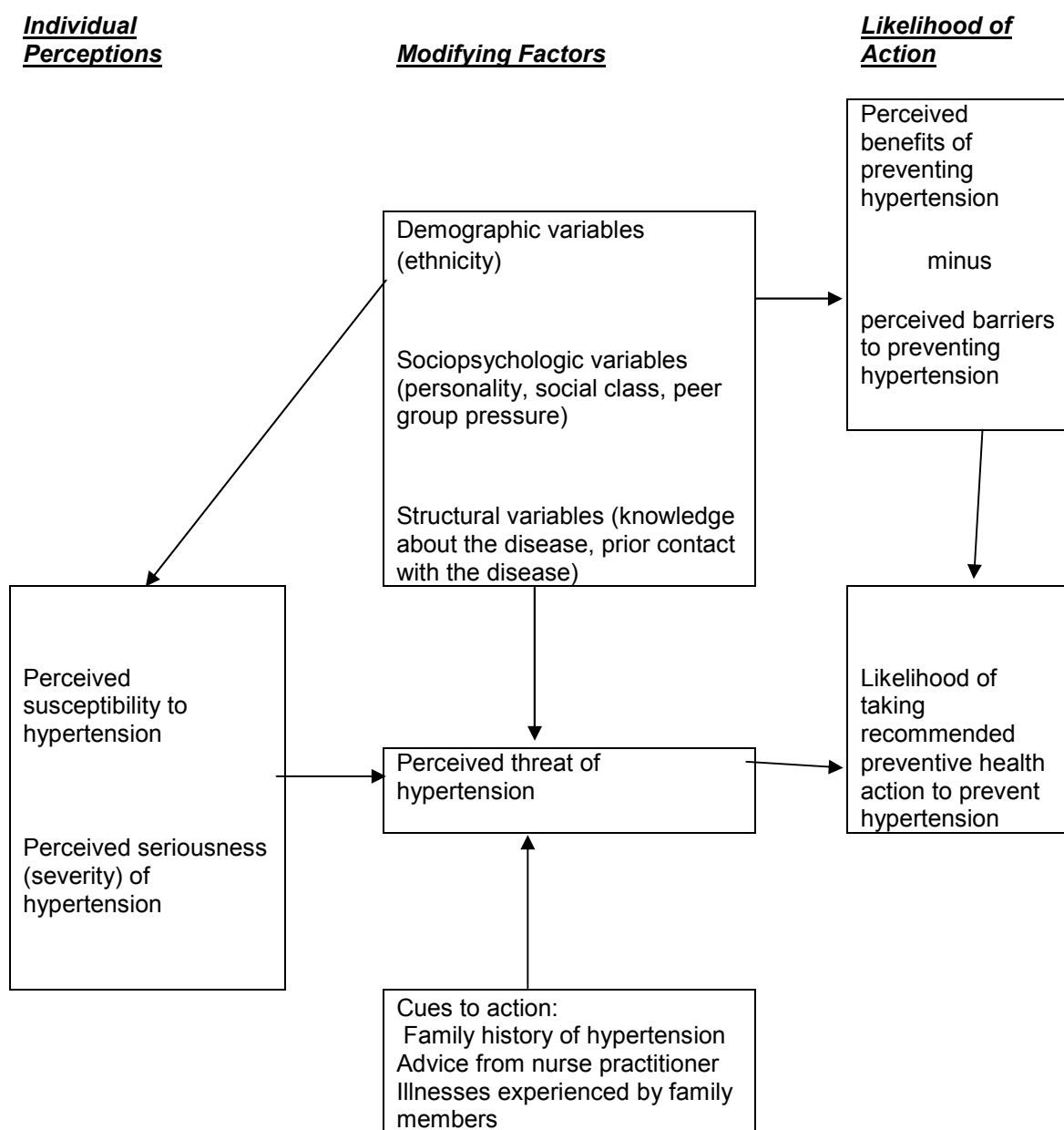


Figure A-2: Health Belief Model applied to case study.

Appendix B

Email solicitation information and consent**Hypertension, Family History, and the Young Adult**

Hello, my name is Mary Kahl, BSN, RN and I am a graduate student in the College of Nursing here at UW Oshkosh. As part of my requirements for graduation, I must complete a clinical paper. My clinical paper is about high blood pressure, family history, and the young adult. I would appreciate it if you could read over the following information telling you a little more about my study and your rights should you choose to be a research participant.

The study is about how family history may influence a young adult's knowledge and understanding of high blood pressure. Young adult is defined in my study as ages 18 to 30. If you are between ages 18 and 30, you are being asked to participate in this research. The knowledge gained from this study may help primary care providers (nurse practitioners and physicians) better educate young adults about high blood pressure.

Should you agree to participate in this study, you will fill out a demographics questionnaire consisting of 13 questions and a high blood pressure knowledge questionnaire that is 50 questions long. These will take approximately 20 minutes to complete. These questions are administered via Qualtrics. No identifying information will be included with the questionnaire. All responses will be kept confidential. Any reports or presentations of this research will be in aggregate form.

There is only minimal risk associated with this study. You may experience some worry while reading through the survey as you answer the questions about high blood

pressure and wonder if you are being affected. Otherwise, the extra time required to complete the questionnaire is the only inconvenience to you.

If you are not between ages 18 and 30, please disregard this emailing.

Your participation in this study is entirely voluntary, and you may withdraw from the study at any time without penalty.

Should you have any questions, please contact:

Mary Kahl

If you have any concerns about your treatment as a participant in this research, please call or write:

Chair, Institutional Review Board For Protection of Human Participants

Although the chairperson may ask for your name, all complaints are kept in confidence.

Completion of the survey indicates that you have read this information and consent to participate in this research.

Demographic Information

Please fill in the following information.

AGE: _____

GENDER: M F

RACE: Caucasian African American Hispanic Asian Other

YEAR IN SCHOOL: Freshman Graduate	Sophomore	Junior	Senior
Do you have high blood pressure?		Y	N
Do you have a mother or father with high blood pressure?		Y	N
Do you have a sibling with high blood pressure?		Y	N
Do you have a grandparent with high blood pressure?		Y	N
Do you have an aunt or uncle with high blood pressure?		Y	N
Have you ever been in a class in which you were taught about high blood pressure?		Y	N
Do you go to a health care provider for an annual physical?		Y	N
Have you had your blood pressure checked in the last year?		Y	N
Do you feel you need to be concerned about getting high blood pressure at some time in your life?		Y	N

Health Belief Model Questionnaire on High Blood Pressure

QUESTION

1. Staying at normal weight helps control blood pressure.
2. Reducing stress helps control blood pressure.
3. Reducing salt helps control blood pressure.
4. Reducing alcohol helps control blood pressure.
5. Exercising may help control blood pressure.
6. Not smoking can help control blood pressure.
7. Reducing fat may help control blood pressure.
8. Drugs can help control blood pressure.
9. High blood pressure makes kidneys work harder.
10. High blood pressure can cause heart problems.
11. High blood pressure can cause strokes.
12. High blood pressure can cause eye problems.
13. Blood pressure is force of blood against walls.
14. Often doctors do not know the cause of high blood pressure.

15. Usually you cannot tell if you have high blood pressure.
16. Having high blood pressure would cause headaches.
17. Having high blood pressure would cause heart problems.
18. Having high blood pressure would prevent you from doing a lot of things.
19. Having high blood pressure would cause you to die.
20. Having high blood pressure would cause breathing problems.
21. Having high blood pressure would make you feel sick.
22. Having high blood pressure would make you feel dizzy.
23. In preventing high blood pressure you would be healthier.
24. In preventing high blood pressure you would live longer.
25. In preventing high blood pressure you would not have a heart attack.
26. In preventing high blood pressure you would not have to watch diet.
27. In preventing high blood pressure you would not have to take medicine.
28. In preventing high blood pressure you could be more active.
29. In preventing high blood pressure you would be more relaxed.
30. In preventing high blood pressure you would feel better.
31. In preventing high blood pressure it is hard to follow a diet.
32. In preventing high blood pressure you couldn't like salty food.
33. In preventing high blood pressure you would have to take medicine every day.
34. In preventing high blood pressure you can't eat the food you like. (continued)
35. I am more likely to have high blood pressure than other my age, sex.
36. Blacks are more likely than whites to have high blood pressure.
37. Whites are more likely than blacks to have high blood pressure.
38. Eating salt makes you more likely to have high blood pressure.
39. Eating salt makes you less likely to have high blood pressure.
40. Being careful about food you eat makes you more likely to have high blood pressure.
41. Being careful about foods you eat makes you less likely to have high blood pressure.
42. Stress in your life makes you more likely to have high blood pressure.
43. Stress in your life makes you less likely to have high blood pressure.
44. Heredity makes you more likely to have high blood pressure.
45. Heredity makes you less likely to have high blood pressure.
46. Taking care of yourself makes you more likely to have high blood pressure.
47. Taking care of yourself makes you less likely to have high blood pressure.
48. Being poor makes you more likely to have high blood pressure than non-poor.
49. Being non-poor makes you more likely to have high blood pressure than poor.
50. Being young makes you more likely to have high blood pressure than older people.

Appendix C

Email giving permission to use HBM questionnaire

Feel free to use, however, if you plan to publish, please re-contact me for instructions for providing the journal proper credit.

glover

editor

From: Mary Kahl

Sent: Saturday, September 04, 2010 6:31 AM

To: Elbert D. Glover

Subject: Re: request for information

Dr. Glover,

Thank you for your response.

I am doing a clinical paper for my Master's. I will be giving the questionnaire to undergraduate students. The age group I will be working with is 18-30 year old, and looking at if a difference exists between those with a family history versus those who do not in regards to knowledge and perception of hypertension. Again, thank you for your time. If you need more information please let me know, or if there is a form that I need to complete please let me know.

Mary Kahl, RN

----- Original Message -----

From: Elbert Glover <eglover1@umd.edu>

Date: Sunday, August 29, 2010 7:06 pm

Subject: Re: request for information

To: Mary Kahl

> I need a formal request as to how it is going to be used and if allowed to be used, we will require a note that reveals our permission to reproduce.>

> glover

> editor

> Am J Health Behav>

> Mary Kahl wrote:

>> Dr. Glover,>>

>> I am a Masters of Nursing student and am interested in using a questionnaire that was developed and published in the Health Values: The Journal of Health Behavior, Education & Promotion journal. The title of the article was "Perceptions of hypertension in Black and White adolescents." It was published in Mar-Apr 1992 (16(2): p 3-10). I did not see how to contact the authors directly and was wondering if you could help me with either how to contact one of the authors so I can obtain permission to use the questionnaire for my clinical paper? Or do I need to go through PNG publications to obtain permission to use the questionnaire? Any help you can give me will be greatly appreciated.

Mary Kahl, RN

Appendix D

Application for Research Approval –Institutional Review Board

Part I: Cover Sheet

Title of Research Project: Hypertension, Family History, and the Young Adult

Application Type: ☒ New ☐ Continuation ☐ Revision

If Continuation or Revision, provide original protocol number and approval date: _____

Original approval ☐ exempt ☐ expedited ☐ full board

Funding Source: None

Is this a course or class project? ☒ Yes ☐ No

Is the project Master's Thesis or Field Study for degree completion? ☒ Yes ☐ No

Principal Investigator Name: Mary Kahl

Principal Investigator Status (check one):

- ☐ Faculty or Instructional Staff
☐ Administrative Staff
☒ Graduate Student
☐ Undergraduate Student

Department College of Nursing

Mailing Address _____

Phone _____

Email _____

Faculty Supervisor Kim Udilis
(required for all student protocols)

Department College of Nursing

Office Address _____

Phone _____

Email _____

Certifications

By signing this form the **investigator** certifies that:

- s/he has read and understands policies regarding the protection of human participants in research;
- s/he has not begun recruitment or testing of research participants and will not do so until formal notification of IRB approval of the proposed project;
- s/he will seek approval from the IRB in advance of implementation of any changes in procedures or the consent process/forms for this project;
- S/he will immediately inform the IRB of any adverse events or other negative consequences incurred by participants in this research.

Signature _____ Date _____

By signing this form, the **Faculty Supervisor** designated above certifies that:

- a) S/he has provided appropriate training in the ethics of human research to the student signing above;
- b) S/he takes responsibility for the research design, and for the student investigator's compliance with the requirements of the IRB;
- c) S/he will provide adequate supervision of the above student in the conduct of this research.

Signature _____ Date _____

Application for Research Approval Institutional Review Board

Part II: Project Description

1. What is the purpose of the research? What question(s) do you hope to answer? *Note: projects lacking a valid research question and a method likely to produce meaningful results are not approvable. Ethical and regulatory standards do not permit investigators to expose participants to research risks when the work lacks scientific merit.*

The purpose of this study is to determine if there are differences in knowledge and perception of hypertension (HTN) between young adults who have a family history of HTN and those who do not as well as to explore the possible relationships between knowledge and perceptions of HTN and presence of family history of HTN in young adults. The research questions: Is there a difference in knowledge and perceptions of HTN in young adults between those with a family history of HTN and those without? Is there a relationship between knowledge and perceptions of HTN and having a family history of HTN in young adults? Since family history has been shown to be a risk factor for a majority of chronic diseases of public health concern (including HTN) and is associated with relative risks ranging from two to five times higher than those of the general population, knowing the baseline knowledge and perceptions of people without HTN but with a family history will be helpful in tailoring education about modifiable risk factors. (Yoon, P. W., Scheuner, M. T., Peterson-Oehlke, K. L. Gwinn, M., Faucett, A & Khoury, M. J. (2002). Can family history be used as a tool for public health and preventive medicine? *Genetics in Medicine*, 4(4),304-310.)

2. Briefly describe research that has already been done in this area. How will your study contribute to the knowledge on this topic?

Research has been done on those who already have HTN to find out what their knowledge base is. There is an increase in primary hypertension (not caused by another disease) in younger people related to multiple factors including an increase in obesity, decrease in physical activity, and poor dietary habits. The potential for primary prevention of HTN is high if these young people are targeted with education regarding what HTN is, how it can affect the body, and how to modify lifestyle to help decrease the chances of developing HTN. Targets for tailored educational interventions need to be identified. My study will contribute to a better understanding of what knowledge and perceptions a young adult has regarding HTN and what factors may influence that knowledge. My study may aid in primary prevention education to help decrease the prevalence of HTN as this generation ages.

3. Describe your data collection method (for example: observations, survey, experimental manipulation, psychological test, interview, etc.). If you are using published surveys or instruments, name them. Copies of all instruments must be attached to this application.

A demographic tool and a survey will be used. The survey is a closed-format Health Belief Model questionnaire on high blood pressure. Both will be sent electronically via Qualtrics. The survey is used with permission from Elbert D. Glover, editor of *American Journal of Health Behavior, Education and Promotion* obtained September 4, 2010. (See appendix)

4. Explain why you have selected this particular data collection method.

This data collection method will be used as it will elicit the information being sought in the most efficient way possible. Construct validity for the questionnaire has been established. Internal reliability assessment utilizing Cronbach alpha showed a coefficient of .93. The questionnaire was shown to have an 8th-grade reading level utilizing the SMOG readability formula. (Desmond, S. M., Price, J. H., Roberts, S. M., Pituch, M. J., & Smith, D. (1992). Perceptions of hypertension in black and white adolescents. *Health Values: The Journal of Health Behavior, Education & Promotion*, 16(2), 3-10.)

5. Describe the location in which the research will be conducted. What is your relationship to that **site**: i.e., is it your place of employment? A campus or class where you are a student or instructor?

The research will be conducted electronically via email accounts and distributed to students where I am a graduate student in the College of Nursing.

Part III: Participants

1. Do participants belong to a group for which special protections are required? Check any that apply:

☐ Minors
☐ Pregnant Women
☐ Fetuses\Abortions
☐ Prisoners
☐ Mentally Handicapped
☒ None of the above

2. Describe your participant pool in terms of
 a. Sex, race or ethnic group, age range, etc.;

Young adults aged 18 to 30 years old

- b. Affiliation of participants (e.g., institutions, hospitals, general public, etc.);

Students in a Midwestern University

- c. Participants' general state of health (mental)

General state of mental health will be assumed to be good as they are participating in college courses.

- d. Participants' general state of health (physical);

General state of physical health will be assumed to be good as they are participating in college courses.

- e. Number of participants or sample size

Sample size of approximately 500 students.

3. Explain why you have chosen this particular group for study. (If participants belong to one of the protected classes above, this justification is especially important.)

This is the age group where health behaviors are being established and habits created. Understanding their

baseline of understanding on a disease that has such wide spread adverse effects, it will help in educating them on making better choices and why. Using an electronic survey via University email allows for a convenience sample.

4. What is your relationship to the **participants** (e.g., are you their classroom instructor; a nurse in a clinic where participants are seeking medical care; etc.)

I am not in any direct relationship with the undergraduate participants. I am a graduate student at the same University.

5. If there is an authority relationship between you and the participants, describe the measures you will take to ensure that participation is voluntary.

There is no authority relationship with the students. The students will be reviewing a consent form prior to taking the survey and can refuse to fill out and return the survey if they wish without any repercussions.

Part IV: Participant Recruitment

1. Will participants be recruited? Y/N If not, explain why this is the case. (Recruitment may not be involved in some types of record review and/or some types of classroom research).

Yes. Participants will be recruited electronically. After obtaining IRB approval I will send an email survey to a randomized email account list provided by Scott Olson in Administrative Computing. Included will be a brief presentation regarding the research being conducted and eligibility criteria.

2. Identify the people who will approach potential participants. If these people have a dual or authority relationship with potential participants, describe (i.e., caregiver, teacher, employer, etc.)

My intention is to approach the students electronically via email.

3. Describe the process that will be used to approach participants: If the approach will be verbal, provide a script; if by advertisement, letter or poster, provide a copy.

The approach will be electronic. (Script attached.)

4. If you will exclude certain classes of individuals from your recruitment, describe and justify the criteria for exclusion. Describe the method you will use to identify and exclude those individuals from the study.

Individuals who are younger than 18 or older than 30 will be excluded from the study and asked not to fill out the survey. Also, those who have a diagnosis of hypertension will be excluded. I will identify these people after surveys have been collected.

Part V: Procedures

Clearly, and in detail, describe what participants will experience:

1. Describe the setting in which the participants' involvement will take place: where will they be: will they be alone or in a group; will there be any special conditions (e.g., in the dark, specific background noise or music)?

The setting will be in a place where students access their email accounts.

2. Describe the instructions that will be given to participants about the procedures (reserve discussion of consent information for section on consent below).

I will first ask them if they meet the inclusion criteria. If they do, and are willing to continue I will ask participants to fill out a questionnaire on knowledge and perceptions of HTN and a demographic questionnaire. They will be asked to not put any identifying items on the surveys. If participants receive the email and are not between the ages of 18 and 30, they will be asked to disregard the email.

3. What will they do/or what will be done to them?

They will fill out a demographic information sheet and survey.

4. Will you be the one administering the procedure, or will someone else do it for you? If someone else, describe how they will be instructed.

I will be administering the survey electronically via emails.

5. How long will the procedure take; how many times will the procedure be done and over what time span?

The survey will take approximately 15-20 minutes and will only be administered once.

6. Will participants experience any discomfort?

Participants should not experience any discomfort while filling out the survey

Part VI: Deception

Will deception be used in your experimental procedures? ____ Yes ☒ No

If No, skip this section and proceed to Part VII

If you answered yes to this question, you must:

- a. Explain why deception is necessary for the conduct of this study.

- b. Describe how you will debrief participants, and procedures you will follow if a participant decides to withdraw his/her consent.

Note: Because the use of deception in experimental procedures requires a modification of the required informed consent, the use of such procedures triggers the requirement for full IRB review of the application. Student researchers are discouraged from employing deception in their experimental procedures except with specific training in those techniques or under close faculty supervision

Part VII: Risk/Benefit Analysis

NOTE: Research that lacks benefit is not approvable. Ethical and regulatory standards require that the benefits of

research outweigh the risks, which is impossible if there are no benefits. All researchers are expected to carefully consider the benefits and risks to participants in designing their study. Participants should be asked to assume no more risk than what is absolutely necessary to accomplish the research objective. For projects in which risk exceeds the regulatory definition of minimal risk, researchers are expected to take all possible measure to minimize risks and/or minimize the consequences of such risks.

1. Benefits

- a. Will the participants benefit from being a part of your study? If yes, explain.

The only benefit may be an increased awareness or curiosity about hypertension and what effects it can have on their body.

- b. What are the benefits to knowledge or to society at large that will accrue as a result of this research?

There is a large direct and indirect cost of high blood pressure on society and increasing awareness of its adverse effects can help to decrease that cost and increase the quality of life for individuals as they get older.

- c. Are there other benefits? Describe.

NONE

2. Compensation or Incentives

- a. Will you offer incentives, reimbursement of costs, or other compensation to participants?

___Yes ___X_ No

- b. If yes, answer the following:

- i. What will you offer as incentive, reimbursement or compensation?

- ii. What conditions must a participant meet to receive these benefits?

- iii. Justify this benefit as necessary to the research, adequate to meet your research purposes, and explain why it will not contribute to perceived or actual coercion of participants.

Risks most commonly encountered in research may be physical, social, psychological, legal, or risks to employment or economic well-being. All risks must be fully disclosed to participants, even if they are no greater than minimal risks. Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

3. Describe all risks, perceived and actual, that participants might encounter during this study. (NOTE: a response of "not applicable" is unacceptable for this answer).

There may be some psychological risks of worry as a participant reads through the survey and wonders if they are going to have adverse effects related to hypertension sooner or later.

4. Do you believe those risks to be no greater than minimal? If so, explain why you believe that to be the case.

No, this is a minimal risk.

5. If risks are greater than minimal, describe the following:
- What you have done to minimize risks to the extent possible without compromising your research objectives?

- What protections have you put in place to minimize the consequences of risks if they should become realized?

- What procedures have you established for reporting adverse events should they occur?

- Explain why these risks are essential to the conduct of your study.

Part VIII: Consent

Legally effective, voluntary, and prospectively obtained informed consent is required from all research participants or their legal representative. Consent to participate in research is a process. The informed consent process involves three key features: (1) disclosing to potential research subjects information needed to make an informed decision; (2) facilitating the understanding of what has been disclosed; and (3) promoting the voluntariness of the decision about whether or not to participate in the research. The circumstances under which consent is sought must allow the prospective participant or their representative (in the case of minors or others legally incapacitated) sufficient opportunity to consider whether or not to participate, including an opportunity to seek explanations and have questions answered. A signature on a consent form does not necessarily mean that full consent has been obtained. A consent form constitutes documentation of consent, not consent per se. In some circumstances, the IRB may waive or modify the requirement for documentation of informed consent. The requirement for informed consent may be modified, but is very rarely waived.

1. Describe how you will obtain informed consent from your participants: In what setting? Who will be present? What information will be provided? By whom? Will there be an opportunity for questions to be asked and answered?

Implied consent will be obtained. Information regarding voluntariness of filling out the survey, and a description of what I am looking for (knowledge and perceptions of hypertension in young adults) will be included. They will be able to email me with questions if they would like. Completing and returning the surveys will imply consent.

Consent must be obtained in a setting that minimizes the possibility of real or perceived coercion or undue influence.

2. Describe the precautions you have taken to ensure that consent is freely and voluntarily obtained.

I will not use instructors to distribute the survey as this may make the participants feel they have to fill it out.

3. Attach a copy of the consent form that you will use to document the informed consent for each of your participants.

See attached.

4. If you wish to request a waiver of documentation of informed consent, explain how your research plan meets each of the criteria below:

- a. the research involves no more than minimal risk to the subjects;

- b. the waiver will not adversely affect the rights and welfare of the subjects

- c. the research could not practicably be carried out without the waiver

5. Attach a copy of the debriefing script or information sheet that you will provide to participants for their reference.

Informed consent must not include any exculpatory language by which the participant or their representative is made to waive, or appear to waive, any of the subject's legal rights. Informed consent must also not release, or appear to release, the investigator, the sponsor, the institution, or its agents from liability for negligence. The IRB will review your consent scripts, documents, and procedures to ensure that this is the case.

NOTE: Projects employing deception (and therefore requiring approval of a modified consent process) must address the specific requirements outlined in Part VI above.

Part IX: Confidentiality/Anonymity

In much social/behavioral research, the primary risk to participants is breach of confidentiality. Risks to reputation, financial well-being, or social standing can be minimized with appropriate protections for privacy and confidentiality of data. When possible, complete anonymity (the identity of the person to whom a particular set of responses pertain is completely unknown, even to the researcher) is the most desirable protection against such risks. When anonymity is not possible, the researcher is responsible for safeguarding the identities, responses, and other private information of all research participants. The safeguards for protection of confidentiality should be disclosed in the informed consent process, as they may impact a prospective participant's willingness to engage in the research.

1. If the data collected in your research will be anonymous, explain the procedures you will use to create and preserve anonymity.

The surveys will be filled out online and will not have any identifying information on them. The Qualtrics survey system will be used and confidentiality will be maintained. Their security statement: "Qualtrics has SAS 70 Certification and meets the rigorous privacy standards imposed on health care records by the Health Insurance Portability and Accountability Act (HIPAA). All Qualtrics accounts are hidden behind passwords and all data is protected with real-time data replication."

2. If the data will not be anonymous, explain the procedures you will employ to protect the confidentiality of your data.

a. During the data collection process,

All information will be de-identified and anonymous.

b. While results are being analyzed,

De-identified data.

c. In publication or other reporting of results, and

No names will be associated with the survey results and so confidentiality will be maintained. Results will be given in aggregate form only.

d. In storage after research is complete and results are reported.

De-identified data.

3. At each phase of the project, who will have access to the data? Will that access be with or without identifying information?

My faculty advisor will have access to the data as will the research assistants.

4. Where will raw data, transcripts, consent forms, and other materials that may contain identifiers be stored upon completion of the project? (*NOTE: all materials must be retained and available for inspection by the faculty advisor [if student research], the IRB, and/or an IRB audit for a minimum of three years.*)

The information will be online and only accessible via a password.

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