



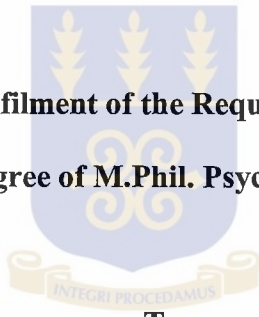
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**ATTITUDES TOWARDS BREAST SELF-EXAMINATION: A  
COMPARATIVE STUDY OF FEMALES IN UNIVERSITIES OF  
GHANA AND BERGEN**

**BY  
NORA WIIUM**

**Submitted in Partial Fulfilment of the Requirements for the Award of a  
Degree of M.Phil. Psychology**



**To**

**The Department of Psychology  
University of Ghana  
Legon**

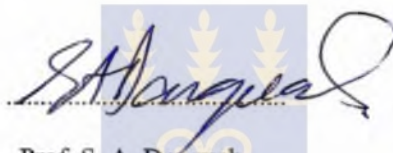
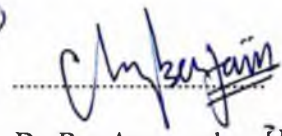
**JUNE, 2004**

**DECLARATION**

I hereby declare that apart from certain papers and other sources, which I had, cause to cite and duly acknowledged this work is the result of my own research, and that this study has neither been presented in whole nor in part for another degree elsewhere. I also declare that neither my supervisors nor any other person but the author alone is responsible for all errors of omission and commission that may be found in this work.



Nora Wiium  
(Student)

  
Prof. S. A. Danquah  
  
Dr. Ben Amponsah 31/10/05

## DEDICATION

To my husband, Simon Wium, and baby, Nana Anika Wium, who daily encourage me never to give up.



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## ABSTRACT

Breast cancer is a feared disease, which affects women almost exclusively. Statistics show that one in eight women will most likely develop this disease at some stage during their lives. Secondary prevention (early detection) is the mainstay. Monthly breast self-examination is one of the necessary components of a comprehensive approach to early detection of breast cancer. However, most women do not practise it. This study set out to examine some of the factors that determine students' intention to practise breast self-examination, using the theory of planned behaviour and the multidimensional health locus of control. Two hundred and forty female students from the Universities of Bergen and Ghana were asked to indicate the extent to which attitudes, subjective norms and perceived behavioural control influenced their intention to practise breast self-examination. They were also asked a series of questions to determine their health locus of control. The relationships between the theory of planned behaviour variables and multidimensional health locus of control were assessed. The results revealed that attitudes, subjective norms and perceived behavioural control predicted intention to perform breast self-examination for University of Bergen female students. For female students from University of Ghana, only perceived behavioural control predicted intention to practise breast self-examination. In addition, females who depended less on powerful others as far as their health was concerned did not receive much approval from significant others regarding breast self-examination. More studies using the theory of planned behaviour and multidimensional health locus of control, and involving Ghanaian context are needed to determine predictors of breast self-examination to help in intervention situations.

## CHAPTER ONE

### 1.1. Introduction

Breast cancer is a disease, which affects women almost exclusively. Ninety-nine percent of all cases are women. In fact, it is one of the leading causes of death among women (Luszczynska & Schwarzer, 2003). It is also established that besides being a woman, age is the major risk factor for breast cancer. The average age for diagnosis for white American and European women is 60 years and for African-American women it is 56 years. However, it has been shown that black African women are more likely to develop breast cancer at a much earlier age. Moreover, while white women have a higher incidence of breast cancer than blacks, mortality rates for African women meet or exceed those of whites, indicating a poorer survival experience for black women (Dignam, 2000).

In Ghana, cases of breast cancer have almost doubled over the past 20 years. Available figures put the estimated incidence at 35 cases/100,000 women in Ghana in 1977. The figure for 1997 is 50-70 cases/100,000 women (Ghartey, 1997). Nonetheless, in Ghana where such figures are necessarily conservative considering the rural nature of the communities where most women are, the incidence of breast cancer is certainly higher, indicating that breast cancer is on the increase in Ghana (Ghartey, 1997). While the incidence is still lower than in Europe and the USA, there are certain trends, which are alarming. Ghanaian women tend to get breast cancer at a younger age, and due to lack of awareness, misinformation and fear, many women remain untreated until it is too late. Although mortality data have not been compiled, it is suspected that it is high (Ghartey, 1997). In Norway, breast cancer is diagnosed in about 25% of all new cancers among women. According to Wang, Thoresen, and Tretli (1998), the age-adjusted incidence rate of breast cancer in Norway increased from

62.0 to 76.9 per 100 000 person-years during the period, 1970 - 1993 and more than 2000 cases are now registered annually. The increase tends to be highest in the age group below 40 years. Early detection is regarded as paramount for the survival rate. Mammograms are the most effective in detecting early stage breast cancer but breast self-examination (BSE) can play an important part as well (Rawl, Champion, Memon, & Foster, 2000). Oncologists argue that BSE, mammograms and clinical breast examination should be given equal emphasis as neither of them are universally successful (Benedict, Williams, & Hoomani, 1996).

Indeed, monthly breast self-examination, clinical breast examination and mammograms are necessary components of a comprehensive approach to early detection of breast cancer (Rawl et al., 2000). However, in a developing country such as Ghana, of the three commonly employed methods of early breast cancer surveillance, only breast self-examination could allow women to perform surveillance behaviour independently and may often be the only screening method available for women without access to professional health care services (Narimah, Rugayah, Tahir, & Maimunah, 1999).

It is estimated that the incidence of breast cancer is low among the youth (Diehl & Kaplan, 1985). However, due to certain psychological-educational and medical reasons, BSE is considered important even in low-risk age groups. For instance, it has been shown that adolescents who perform breast self-examination familiarise themselves with their breast anatomy, which in turn assists them in identifying future breast abnormalities. It is also shown to be important in establishing health practices that will be particularly helpful when they are in the risk age group for breast cancer (Mamon & Zapka, 1986). Besides, attendance of mammography, which is suitable for older and higher-risk age groups, is associated with practising BSE (Rodriguez, Plasencia, & Schroeder, 1995). According to Hackshaw and Paul

(2003), breast self-examination is widely recommended for breast cancer prevention and especially following a recent controversy over the efficacy of mammography, it may be seen as an alternative. It is thus important to identify and encourage factors that influence BSE.

## **1.2. The problem**

Breast cancer is a feared disease, not only because it is life threatening, but also because it can affect a woman's sense of self, her sexuality and femininity. It is the most common malignancy in women, and it is currently estimated that one in eight women will most likely develop this disease at some stage during their lives (Luszczynska & Schwarzer, 2003).

The degree of success in treating this disease is influenced primarily by the stage at which intervention is introduced. Secondary prevention (early detection) is the mainstay. Changes in the breasts can be detected either by means of a clinical breast examination (i.e., mammography screening) or breast self-examination. Breast self-examination is important in that it helps the woman to be aware of her breasts through continuous examination. It involves a woman knowing how her breasts look and feel normally, so that she will be able to detect any unusual change(s). Previous studies suggest that women should be aware of any changes in their breasts as part of enhancing the knowledge of their own health (e.g., Bailey, 2000). Other researchers also emphasised that by performing regular monthly breast self-examination, a crucial component of breast awareness, women become acquainted with what is normal for them and any changes noticed serve as an effective warning. However, because women do not have accurate perception of their breast cancer risks most of them do not practise BSE (Katapodi, Lee, Facione, & Dodd, 2004).

Marie Curie Cancer Care and the Royal College of Nursing in the United Kingdom now discourage nurses from carrying out breast palpation (Crawford, 1997). Instead, they recommend that the role of the nurse should be to train women to be breast aware by providing information, advice and support. Awareness of body changes through self-detection has become a prime issue in women's health and in October 1995, the annual Europe against Cancer Week produced a ten-point code against cancer, with the tenth point stating 'check your breasts regularly'.

The American Cancer Society since 1990 have recommended that for women who are 20 years and older, monthly breast self-examination is a good routine health habit. Other studies encourage BSE from adolescence arguing that habit that start in the formative years of young adulthood are likely to be continued through life (Mamon & Zapka, 1986). In the United Kingdom, the National Breast Screening Programme currently provides routine mammograms every three years for women between 50–64 years. For women who are too young or too old to be included in the screening programme, breast self-examination is of great importance to help in the discovery of any early changes in the breast tissue.

Breast self-examination involves the manual palpation of the breast tissue with the purpose of detecting lumps. It is important though to remember that most lumps are not cancerous. It is useful, however, in detecting cancer at an earlier stage resulting in increased survival and decreased morbidity. Previous studies suggest that women who examine their breasts regularly and develop breast cancer generally have a five-year survival rate and in most cases even more (Wang et al., 1998). Thus, early diagnosis and intervention are the cornerstones of treatment for this disease, and correlate to a better survival rate.

Besides, Bailey (2000) has suggested that encouraging this self-care practice is essential for increasing individuals' responsibility for their own health. Breast self-examination, as being breast aware is an action with a specific purpose that follows a set of pattern and sequence. According to her, breast self-examination does not rely on any specialised personnel or equipment. Rather, it is a painless and inexpensive self-care action that can be done at home in about ten minutes. However, for this self-examination to reach its potential as a screening method, it must be performed both thoroughly and on a monthly basis.

Baker (1992) alleges that it is important to convince women to practise monthly breast self-examination and it is important that women feel empowered and not frightened. She comments that the key is patient involvement, and that questions about breast self-examination and being breast aware should be standard during everyday contact with a patient. Moreover, other authors see mammography screening as a profit driven technology, which poses risks compounded by unreliability. Instead, they argue for annual clinical breast examination together with monthly breast self-examination, which is safe, as effective and low in cost (e.g., Epstein, Bertell, & Seaman, 2001).

Research suggests that women who are advised about breast self-examination and breast awareness by a health care professional demonstrate greater knowledge and confidence and are more likely to practise this procedure routinely, than those who become aware from other sources (Morrison, 1996). Morrison (1996) suggests that verbal and written explanation of what changes to look out for should be given and perhaps equally important, support should be given to encourage reporting any such changes. Nevertheless, though professionals can provide persuasive and relevant information to individuals, the responsibility for changing attitudes and behaviour remains with the individual (Naidoo & Wills, 1994).

Despite the benefits of breast self-examination and its importance as a screening measure for detecting breast cancer, very few women examine themselves, whilst majority do not know how to practise it. The most popular reason given for not performing breast self-examination regularly was forgetfulness. Other reasons reported were lack of confidence, fear and lack of time. Non-performers seemed to think that a sensation of some type would be the first symptom and that a healthy lifestyle somehow protected them from this disease (Stamler, Thomas, & Lafreniere, 2000).

According to statistics from Ghana, breast cancer presents a frightfully serious problem (Ghartey, 1997). Although Ghana has the facilities and personnel to deal with the breast cancer scare effectively, facilities are scare and people are unable to meet the expense of huge medical cost. In such a situation, breast self-examination will be an effective alternative to help detect early, breast lumps and to stop them developing into cancer. Previous studies have shown that women who correctly practise monthly BSE are more likely to detect lumps in their early stage of development, which in turn could lead to early treatment and better survival rate (Chouliara, Papadioti-Athanasίου, Power, & Swanson, 2004). However, women generally lack awareness of the problem, have inadequate knowledge and negative attitudes towards BSE, and fear or poverty and misinformation deprive women access to early detection and treatment. In situations where detection has been done, late detection has led to the circumstance where most patients do not survive, thus robbing Ghana of some of the most distinguished women (Ghartey, 1997).

### **1.3. African Beliefs and health**

Most cultural beliefs among Ghanaians portray diseases and sickness as curses and punishment put on people by ancestral spirits and gods and it is most likely through the

appeasement of the gods that these diseases could be lifted (Awusabo-Asare & Anarfi, 1997). For instance, different sub-Saharan ethnic groups have the tradition that a person's relation to his society, the natural and supernatural worlds, and his ancestral background, is central to his physical and mental well-being. To these ethnic groups therefore, the key to health is to achieve a balance between physical and spiritual life. According to Van Dyk (2001), the day-to-day psychological fate of individual human beings in Africa is regulated and controlled by the complex relations between humans and the invisible but powerful creatures of the mesocosmos (the intermediate universe which functions as a no-man's land where genies, evil spirits, witches and sorcerers dwell). Due to this background, most ethnic groups label diseases with no explanation to its aetiology as supernatural (Awusabo-Asare & Anarfi, 1997). Even among African Christians, there is the belief that diseases such as AIDS, is a punishment from God for immorality and sins (Van Dyk, 2001).

Diseases labelled as supernatural are normally considered to be due to witchery, evil or withdrawal of ancestral protection. Ethnic groups in African do not believe in chance, hard luck or fate. They believe that every illness has an intention and specific cause, and in order to combat the illness, the cause must be found and counteracted, uprooted or punished. In addition, they recognize an immediate as well as an ultimate cause for disease or misfortune Van Dyk (2001). Labelling diseases as supernatural thus affects the health seeking behaviour of patients. Many consult both traditional healers and biomedical professionals for the same condition. While the traditional leader is consulted to diagnose the personal cause of the condition (e.g., bewitchment) or to prevent a recurrence, a western doctor is consulted for medication to treat the condition symptomatically (Van Dyk, 1999). Furthermore, others with these traditions believe that neither western medicine nor education can provide a cure and so prefer to seek explanations or possible cure from shrines, diviners or spiritualists (Van Dyk,



1999). This trend may be particularly seen among the less educated and uneducated population. Traditionally, ethnic groups in African usually restore the ontological balance through sacrifices and offerings to the ancestors and spirits (Beuster, 1997). There is therefore no doubt that many western-based AIDS education and prevention programmes for example, have failed dismally in most African states (Van Dyk, 2001).

Christians tend to believe that with the help of the pastors' prayers they would be delivered from the powers of these gods or curses from enemies while the highly educated are more likely to place their health in the hands of doctors. Besides, cultural beliefs in Africa put women in a position where they do not generally feel comfortable with breast self-examination because touching the breast is considered sexual and women feel uncomfortable to touch their breast even in privacy (Yewoubdar, 1999). These situations have made women reluctant to take control over their own health and in effect making them unable to detect diseases including breast cancer at an early stage for better cure and better survival rate.

When women ignore early warning signs and symptoms, mammography are scarce for scientific detection and the cost of treatment per patient are high, most of them are denied treatment underscoring the importance and need for undertaking a more cost effective and lifesaving approach to address this serious problem. Undeniably, difficulties in gaining access to screening for early detection as well as awareness programmes have been a limiting factor in Ghana (Ghartey, 1997). Moreover, in developing countries, BSE is considered to be a simple, inexpensive, non-evasive, and non-hazardous intervention, which is not only acceptable, cost-effective and appropriate, but also encourages women to take an active responsibility in preventive health (Narimah et al., 1999).

Developed countries may have comparatively better and efficient facilities to deal with the threat of breast cancer. However, if breast cancer is not detected at an early stage, the facilities could do little to save the life of women. This therefore brings them on a par level with developing countries. As a result breast-self examination could be considered as important to both developed and developing countries for the early detection of breast cancer.

## CHAPTER TWO

### 2.1. The Conceptual Model

Several psychological models have been developed to predict health behaviour (Norman & Conner, 1995). Examples include Health Belief Model (Becker, 1974), Multidimensional Health Locus of Control (Wallston, Wallston & DeVellis, 1978), and Protective Motivation Theory (Maddux & Rogers, 1983), whilst others are developed as general models of behaviour, for instance, the Theory of Reasoned Action and the Theory of Planned Behaviour (Ajzen & Fishbein, 1980). These models all agree on the central role of attitudes and beliefs as determinants of behaviour (Norman & Conner, 1995). However, with the Theory of planned behaviour the roles of norms and perceived behavioural control (or self-efficacy) have also been noted.

The health belief model by Becker (1974) focuses on two aspects of individuals' representations of health and health behaviour: threat perception and behavioural evaluation. Threat perception is seen to depend upon two beliefs, perceived susceptibility to illness or health breakdown and anticipated severity of the consequences of such illness. Behavioural evaluation consists of two distinct sets of beliefs, those concerning the benefits or efficacy of a recommended health behaviour and those concerning the costs of or barriers to enacting the behaviour. In addition, the model proposes that cues to action can trigger health behaviour when appropriate beliefs are held. These cues involve a diverse range of triggers including individual perceptions of symptoms, social influence and health education campaigns.

Rogers' (1975) protective motivation theory on the other hand, is an expansion of the health belief model. It describes adaptive and maladaptive coping with a health threat as the result

of two appraisal processes: a process of threat appraisal and a process of coping appraisal, in which the behavioural options to diminish the threat are evaluated. The appraisal of the health threat and the appraisal of the coping responses result in the intention to perform adaptive responses (protection motivation) or may lead to maladaptive responses. Maladaptive responses are those that place an individual at a health risk. They include behaviour that lead to negative consequences (e.g., smoking) and the absence of behaviour, which eventually may lead to negative consequences (e.g., not participating in breast cancer screening and thus missing the opportunity of early detection of a tumour).

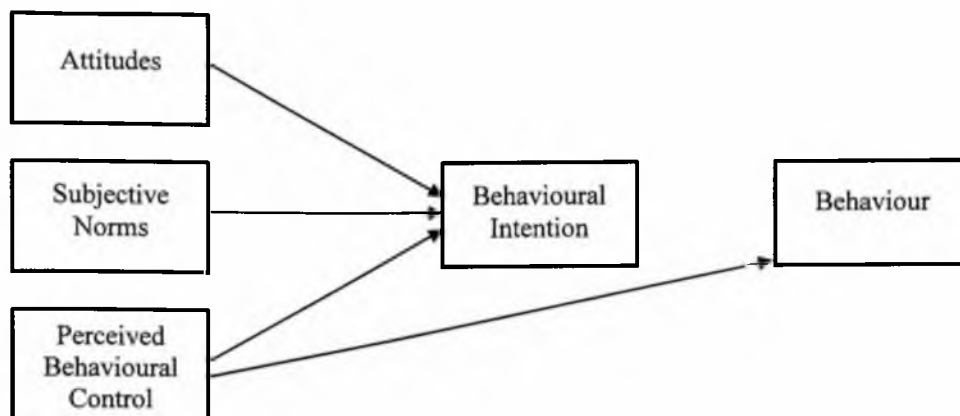
The main theoretical framework used for this study was the theory of planned behaviour. Ajzen's (1991) theory of planned behaviour (TPB) extends the theory of reasoned action (TRA) by adding perceived behavioural control (PBC) as a determinant of behaviour and behavioural intention. The theory of reasoned action has dominated the research on attitude-behaviour relations for the past two decades, and was developed in response to the frequently voiced criticism of the reported lack of a consistent attitude-behaviour relationship (Ajzen & Fishbein, 1980). The TRA attempted to provide an account of the way in which attitude, subjective norm and behavioural intentions combine to predict behaviour. Originally, TRA was intended to account only for volitional behaviours but was subsequently revised under the recognition that performance of many behaviours are not under complete volitional control. Hence, its extended version, the theory of planned behaviour includes PBC as a new determinant of behavioural intention on a par level with attitude and subjective norm (Ajzen, 1991).

The theory of planned behaviour is considered a deliberative processing model in that it appears to imply that individuals make behavioural decisions based upon a careful

consideration of available information (Conner & Sparks, 1995). The theory posits that behavioural intention is a function of attitude towards the behaviour, subjective norms and perceived behavioural control. Attitudes towards breast self-examination (BSE) for example, involve beliefs about outcomes of practicing the behaviour and evaluation of the consequences or values of engaging in BSE. Attitudes have been considered major determinants of behaviour. It would therefore seem plausible that women who have positive attitudes towards health would also have healthy lifestyle and refrain from health impairing behaviour. However, the relationship between attitudes and behaviour has not proved to be quite so simple especially across cultures. Social psychological researches have sometimes failed to find substantial relationships between attitudes and behaviour particularly where general attitudes were related to much more specific behaviour. Ajzen and Fishbein (1980) emphasised that attitudes and behaviour would be most strongly related when both are assessed on the same level of specificity with reference to action, target, context and time. On the other hand, subjective norms towards BSE assess the perceived social pressure from important referents to practise or not practise the behaviour. In other words, it consists of a person's beliefs about whether significant others think he or she should engage in the behaviour. Significant others are individuals whose preferences about a person's behaviour in this domain are important to him or her. Perceived behavioural control expresses one's perception of the easiness or difficulty of performing behaviour (e.g., BSE). According to Ajzen (1991), perceived behavioural control is synonymous to Bandura's (1986) self-efficacy and they seem interchangeable. The three predictors (attitudes, subjective norms and PBC) in addition, are underpinned by behavioural, normative and control beliefs, respectively.

Behavioural beliefs are concerned with the perceived likelihood that performing BSE for example, will lead to certain outcomes weighted by the extent to which these outcomes are

valued. Normative beliefs focus on the perceived pressure from specified referents to perform BSE weighted by the person's motivation to comply with these referents. Control beliefs refer to beliefs about the presence and absence of obstacles, impediments and resources that may hinder or facilitate the practice of BSE. Behavioural control is seen as a continuum with easily executed behaviours at one end (e.g., eating a readily available liked food) and behavioural goals demanding resources, opportunities and specialized skills (e.g., becoming an excellent chess player) at the other end. The theory of planned behaviour speculates two causal routes of behavioural performance: the three predictors (attitudes, subjective norms and perceived behavioural control) influence subsequent behaviour indirectly through intention, while perceived behavioural control also influences behaviour directly if it accurately reflects actual control (Ajzen, 1991). The link between intentions and behaviour reflects the fact that people tend to engage in behaviours they intend to perform. However, the link between behaviour and PBC is more complex. The relationship suggests that we are more likely to engage in attractive or desirable behaviours we have control over and suggests that we are prevented from carrying out behaviours over which we have no control (Ajzen, 1991). Ajzen (1988) emphasised that it is actual control, which is important here, in that people will tend to perform (and exert extra effort to perform) desirable behaviours they have control over, and not perform behaviours they have little or no control over. Hence, measures of actual control would be desirable here. However, because such measures are difficult to obtain, perceptions of control are used as proxy measures for actual control. Perceived behavioural control will predict behaviour directly to the extent that the measure matches actual control. The relationships that exist between TPB variables are presented in the figure below.



**Fig.1:** The Theory of Planned Behaviour (Ajzen, 1991)

Included in the theoretical framework for the current study is the theory of multidimensional health locus of control (MHLC). Drawing on Rotter's (1966) work of locus of control, Wallston, Wallston, and DeVellis (1978) developed multidimensional health locus of control (MHLC). According to them, MHLC is a measure of individual differences in general health expectancies and consists of three dimensions: internal, chance and powerful others. Internal locus of control is concerned with the extent to which individuals believe that their health is within their personal control. Chance locus of control measures how the individual regards their health status as being due to chance or fate while powerful others locus of control measures the degree to which individual place their health in the hands of powerful others (usually defined as health professionals). The locus of control construct is one of the most widely researched and one of its principal advantages is that it was developed specifically to assess health behaviour.

Over the years, social psychologists have realised the usefulness and efficiency in combining theories and models in solving health and social problems (Kok, Schaalma, De Veries, Parcel, & Paulussen, 1996). In the light of this, the current study was designed to integrate the theory

of planned behaviour and multidimensional health locus of control in the study of students' attitudes towards breast self-examination. The study assessed the psychosocial and cognitive correlates of females' (at the Universities of Ghana and Bergen) attitudes towards the practice of breast self-examination, (BSE). A search through the literature did not reveal any research that has combined TPB and MHLC in the study of BSE. Nevertheless, the current study assumes that because internals (i.e., persons who have internal locus of control) are those who attribute events to their own behaviour they are more likely to have positive attitudes towards intention to practise BSE. In other words, they are more likely to protect their own health. Externals (i.e., persons who have external locus of control) on the other hand, may depend more on the approval of significant others regarding BSE. The association immediately above may be especially applicable to individuals who have powerful others locus of control. For example, once they realise that significant people in their life show approval and support in the performance of BSE they will probably be more willing to practise it. Furthermore, internals rather than externals would tend to perceive stronger behavioural control over the practise of BSE. The study thus suggests that there will be significant association between MHLC and TPB variables (i.e., attitudes, subjective norms and perceived behavioural control).

## **2.2. Literature Review**

Previous research using the health belief model revealed that the frequency of breast self-examination was related to increase perceived seriousness of breast cancer, benefits of BSE, and health motivation. Frequency of BSE was inversely related to perceived barriers (Graham, 2002). In another study, motivation, susceptibility and fewer barriers showed a positive association with the practice of BSE whilst benefits, susceptibility and motivation influenced intention to perform BSE in the future (Petro-Nustus & Mikhail, 2002).



Protection motivation theory has also been used in the study of BSE. For instance, Hodgkins and Orbell (1998) found that intention to perform BSE was associated with coping appraisal, but not threat appraisal. A study by Ruiter, Verplanken, Kok, and Werrij (2003) showed no support for an interaction between threat information and coping appraisal regarding the practice of BSE and detection of breast cancer. Rather, they found that threat information seemed to contribute positively to fear control (i.e., avoid thinking about breast cancer to reduce feelings of fear). Alternatively, coping appraisal contributed positively to danger control (i.e., motivation to perform monthly BSE to detect breast cancer) and negatively to fear control.

The theory of planned behaviour has successfully been applied in a range of behavioural domains including health behaviours (e.g., Armitage & Conner, 2001; Umeh & Patel, 2004). However, whereas most of the studies have been conducted in western countries and cultures, only a few studies have been published using African contexts (e.g., Fekadu & Kraft, 2001). Most of the studies on western culture showed that attitude and perceived behavioural control rather than subjective norms predicted intentions to perform behaviour. For instance, in a study by Meyerowitz and Chaiken (1987), they found that participants' perceived behavioural control contributed significantly to the prediction of intentions to perform BSE. In other words, when participants believed that it was easy to perform BSE, their intention to engage in the behaviour tended to increase. In another study by Budden (1999), Student nurses' attitudes were found to predict intention to perform BSE. Specifically, when participants had positive attitudes towards BSE, their intentions to carry out the behaviour were also high. Earlier on, the attitude component has been supported as a predictor of behavioural intention regarding BSE (e.g., Lierman, Kasprzyk, & Benoliel, 1991; Ronis & Kaiser, 1989). This trend could be explained in relation to the individualistic and person-centred nature of cultures

of the West. However, with the few studies that have been conducted in Africa, there has not been any particular trend. Attitude, subjective norms or PBC could be important in the prediction of behavioural intentions. Nevertheless, due to the collectivist nature of cultures of developing countries it is believed that subjective norms will most likely predict behavioural intentions. This may somehow not apply fully to the educated population. It is feasible that predictors of their behavioural intention could coincide with that of the West. A brief description of participants' cultural background is given later on in the study. Meanwhile, according to the theory of planned behaviour (TPB), the predictive power of the theory's concepts differs with target behaviour as well as target population. Hence, it would be worthwhile to study the TPB's applicability in an African context in general and Ghanaian setting in particular to create room for comparison.

While the multidimensional health locus of control has been extensively used in the domain of health behaviour not many studies has been done on breast self-examination. Again, like the theory of planned behaviour most of the studies using the multidimensional health locus of control have mostly been done in the western culture. In a study done in Northern Ireland by Murray and McMillan (1993), powerful others locus of control was found to predict breast self-examination. Specifically, they found that women who believed that powerful others such as doctors could deal with breast cancer tended not to do anything about detecting breast cancer themselves. However, a study by Bundel, Marks, and Richardson (1993) showed that both internal and powerful others loci of control were positively related to breast self-examination. They found that elderly women took care of their own health to some extent and consulted the doctors as well. In another study by Redeker (1989), internal locus of control was found to predict the frequency of practice of breast self-examination. Earlier on, Hallal (1982) found an inverse relationship between powerful others locus of control and self-

breast examination. In spite of its influence and apparent suitability for the prediction of health behaviour, studies such as those above that have examined the predictive utility of the multidimensional health locus of control (MHLC) have reported mixed findings. Norman and Bennett's (1996) review concluded that the relationship between MHLC and health behaviour was only modest. They argued that this is partially attributable to the fact that health value (i.e., the extent to which people value their health) has been omitted from many studies of MHLC. Wallston (1991) argued that MHLC would only predict behaviour when people place significant value upon their health. Support for this assertion has been provided by a number of recent studies (e.g., Bennett, Moore, Smith, Murphy, & Smith, 1995; Bennett, Norman, Moore, Murphy, & Tudor-Smith, 1997). The current paper therefore incorporates measures of health value through the theory of planned behaviour. How important the individual values her health is reflected in items that measured attitudes towards breast self-examination. Very few studies have combined the theory of planned behaviour and multidimensional health locus of control in the study of health behaviour (e.g., Armitage, Norman & Conner, 2002). However, their study was on safe sex, binge drinking and drink driving. They found some correlations between MHLC and the TPB variables. For example, with respect to drink driving, attitude was significantly correlated with chance locus of control while subjective norm was significantly correlated with both internal and chance loci of control. There was no correlation between PBC and any of the MHLC variables.

All the same, comparing female students from both Universities, the present study proposes that females from both Universities of Ghana and Bergen will have positive attitudes towards BSE because of their educational background. However, due to the collectivist nature of the Ghanaian culture, females at the University of Ghana are expected to experience much

approval from significant others than their counterparts at the University of Bergen. In addition, a greater percent of externals are expected to come from the University of Ghana.

### **2.3. Aims of the study**

The aims of the current study were to:

1. Investigate the level of awareness and knowledge in the practice of breast self-examination at the Universities of Ghana and Bergen
2. Identify specific factors that motivate women to practise breast self-examination in relation to the theory of planned behaviour and multidimensional health locus of control.
3. Suggest means to predict the continuity of the practice of breast self-examination among women in these institutions and possibly elsewhere.

### **2.4. Significance of the study**

1. This study is to contribute modestly to the advancement of local knowledge.
2. Additionally, it is expected to increase level of awareness regarding breast self-examination, which will in turn reduce the incidence of breast cancer together with its associated mortality.
3. Furthermore, it is also to use the theory of planned behaviour in an African context as well as apply Western theoretical model in solving local problems.

### **2.5. Operational definitions**

Attitudes: Attitudes towards behaviour is the degree to which performance of the behaviour is positively or negatively valued.

**Subjective norm:** It is the perceived social pressure to engage or not engage in behaviour.

**Perceived behavioural control:** This refers to people's perceptions of their ability to perform a given behaviour.

**Internal locus of control (Internals):** This refers to a situation where the individual believes that his or her behaviour is guided by his or her personal decisions or effort. High and low internals refer to individuals who score above and below the median score respectively.

**External locus of control (Externals):** This is where the individual believes that his or her behaviour is guided by fate, luck or other external circumstances. High and low externals refer to individuals who score above and below the median score respectively.

## **2.6. Statement of hypotheses**

Considering the individualistic and person-centred culture in Norway as compared to the more collectivist culture in Ghana, as well as participants' educational background, it is hypothesised that:

1. There will generally be a high level of awareness of breast self-examination among university females.
2. Attitudes and perceived behavioural control of female students at the University of Bergen will be the most important predictors of their intentions to perform breast self-examination, whilst the most important predictor for Ghanaian students will be subjective norms.
3. High internals will have more positive attitudes towards BSE than low internals.

4. High externals (regarding powerful others) will receive more approval from significant others (subjective norms) to perform BSE than low externals.
5. There will be more high externals from the University of Ghana than from the University of Bergen.

## CHAPTER THREE

### 3.0. METHODOLOGY

#### 3.1. Subjects

Two hundred and forty female university students were involved in the study, 120 from the University of Ghana and the other 120 from the University of Bergen, Norway. Participants from both universities were Level 300 students from the psychology department and were selected from these two areas in order to allow for comparison. The rationale was also to determine which component of the TPB contributed most (depending on ones culture) in predicting intentions to practise BSE. In addition, university students were chosen because it is believed that women from tertiary institutions especially, have enough knowledge on breast cancer, are more aware of their susceptibility to it, and would thus tend to practise health behaviour such as breast self-examination in detecting the disease.

#### 3.2. Background of Research Subjects

The study involved students from the University of Ghana and the University of Bergen, Norway. One of the assumptions in the study was that the background of the participants (i.e., which part of the world participants come from) was likely to affect the results of the study. A brief description of their background is thus necessary.

Ghanaians come from six main ethnic groups: the Akan (Ashanti and Fanti), the Ewe, the Ga-Adangbe, the Mole-Dagbani, the Guan, and the Gurma. The major languages spoken are Twi, Fante, Ga, Hausa, Dagbani, Ewe and Nzema. However, English is the official language. The population is made up of 60% Christian, 15% Muslim and 25% traditional African religions. Even though Ghana has the highest percentage of Christians in West Africa, the belief in

traditional animist religion is still extremely common. Forty-four percent of Ghanaians live in the urban area while the other 56% live in the rural area. Seventy-five percent are literate of which 35% have university education (World Development Indicators, 2004). Among the educated, the western way of living has infiltrated their life to the extent that most of them have become more 'westernised' than the western people themselves, as compared to the non-educated.

Most African cultures are permeated by the philosophy of 'brotherhood', where collective responsibilities are placed above individual initiatives and self-sufficiency and where the group takes care of the needs of individuals. As a result, decision making mostly takes place on the group level (Mbigi & Maree, 1995). It is therefore important to be supported by the group when it comes to performing a particular behaviour. On the other hand, collective decision or being supported by the group may not always be important to the educated population. Rather, their approval as to how things should be done could be sought for in certain situations. Thus, the influence of education could override that of culture.

Norway on the other hand, has two official forms of language: Nynorsk and Bokmål, but also Sami (spoken by the Northern Sami minority group). With a current population of about 4.57 million people, it is predominantly a Christian country with 86.3% of the population, having an Evangelical Lutheran background. In contrast to the literacy rate in Ghana, the national statistics show that every Norwegian is literate (Statistics Norway, 2003). Unlike African culture, most western societies including Norway are rated individualistic in nature (Berkowitz, Jenkins, & Kelly, 1996). Accordingly, such societies have their philosophy based on the concept of humanity, which is intellectualised and individualised. One chooses to believe and accept what is considered the best argument, based on reason. As words form the



bases of arguments, verbal expression is important in human communication. There is no room for implicit meanings and as such, knowledge rests on the explicit. Debate stimulates competition between individuals and winning the competition is highly prized. For people to be successful in this culture, they have to rely on own initiatives. This makes the self important, with self-assertion valued above respectfulness. Although religious influences prescribe care and concern for other members of society, most efforts are self-serving. Care and concern for those who are not self-sufficient such as the infirm and the elderly, are primarily given by institutional structures.

### **3.3. Material**

Questionnaire was administered to assess psychosocial factors of subjects towards breast self-examination. It was based on components of the Theory of Planned Behaviour (TPB; Ajzen, 1991) and Multidimensional Health Locus of Control (MHLC; Wallston, Wallston & DeVellis, 1978), and was primarily of the closed-ended type, and of the Likert scale type. In terms of behavioural assessments, the validity and reliability of constructs from TPB and MHLC have been assessed and confirmed by previous studies (Ajzen & Fishbein, 2004; Norman & Bennett's, 1996) (for details, see subsection 3.3.2). Earlier on, a pilot study collecting data from twenty Ghanaian students was used to assess how students understood the items in the questionnaire and to make necessary adjustment. The questionnaire used in the study was divided into 3 sections: A, B and C. Section A comprised items that dealt with socio-demographic characteristics such as age, religion and marital status among others. Section B involved items that measured concepts from the theory of planned behaviour such as attitudes, subjective norms, perceived behavioural control, intention and behaviour regarding BSE. Under section C were items that measured the various health locus of control such as internal, external due to chance or powerful others locus of control. The

questionnaires used in both settings were in English. Although students at the University of Bergen have Norwegian as their national language, all students at the tertiary level in Norway can communicate in good English.

### **3.3.1. Measurement of variables**

#### **Age group**

Students were asked to indicate their age group. The following age groups were given:

(i) 20 and below; (ii) 21 – 25; (iii) 26 - 30; (iv) 31-35; (v) 35+.

#### **Marital Status**

Students indicated whether they belonged to one of the following status:

(i) Married/cohabitation; (ii) Single; (iii) Separated/Divorced; (iv) Other (specify).

#### **Religion**

Students were asked to indicate their religious affiliation among the following: (i) Protestant;

(ii) Catholic; (iii) Pentecostal/Charismatic; (iv) Other (specify).

#### **Breast Self-Examination**

Students were asked to indicate their ability to examine one's own breast by a yes-and-no question. In addition, they were asked to rate on a 7-point scale whether they had enough knowledge on BSE as well as whether they have been practicing it for the past three months.

In all cases, the 7-point scale ranged from (1) Exactly applies to (7) Does not apply at all.

### Intention to perform breast self-examination

Students were asked to rate themselves on a 7-point scale how likely they intended to do BSE for the next three months. The 7-point scale ranged from (1) Very likely to (7) Very unlikely.

### Attitudes towards breast self-examination

With three items to assess their attitudes towards BSE, students were asked to indicate on a 7-point scale whether breast self-examination for the next three months was (1) Good or (7) Bad; (1) Harmful or (7) Beneficial; (1) Pleasant or (7) Unpleasant.

### Subjective norms regarding breast self-examination

Students were to rate themselves on a 7-point scale whether most people important to them think that they should do monthly BSE for the next three months. The 7-point scale ranged from (1) Exactly applies to (7) Does not apply at all.

### Perceived behavioural control regarding breast self-examination

Students were asked to indicate on a 7-point scale whether it would be easy or difficult to do BSE for the next three months. The 7-point scale was anchored by (1) Extremely easy and (7) Extremely difficult.

### Internal Locus of Control

To assess internal locus of control, students were asked to rate themselves on a 7-point scale with reference to questions which included the following: If I get sick, it is my own behaviour, which determines how soon I get well again; I am in control of my health; When I get sick, I am to blame (for details see appendix B).

The 7-point scale was anchored by (1) Strongly agree and (7) Strongly disagree

#### External Locus of Control (Chance)

External locus of control due to chance was assessed on a 7-point scale using items which included the following: No matter what I do, if I am going to get sick, I will get sick; Most things that affect my health happen to me by accident; Luck plays a big part in determining how soon I will recover from an illness (See appendix B for the complete set of items used).

The 7-point scale ranged from (1) Strongly disagree to (7) Strongly agree

#### External Locus of Control (Powerful Others)

External locus of control regarding powerful others was assessed on a 7-point scale using items which included the following: Having regular contact with my physician is the best way for me to avoid illness; Whenever I do not feel well, I should consult a medically trained professional; My family has a lot to do with my becoming sick or staying healthy (See appendix B for the complete set of items used)..

The 7-point scale was anchored by (1) Strongly disagree and (7) Strongly agree

### **3.3.2. Psychometric properties of instruments used in the study**

Construction of the theory of planned behaviour scale was in 1991 by Ajzen. Depending on the type of behaviour, the influencing constructs in the theory of planned behaviour could be measured either directly or indirectly. To measure attitude indirectly, behavioural beliefs and outcome evaluations regarding the attitudinal object are assessed. Direct measurement involves the use of bi-polar adjectives (i.e., pairs of opposite) which are based on evaluation

(e.g., good - bad), investigation (e.g., usefulness - worthless) and experiential items (e.g., pleasant - unpleasant). For subjective norm, indirect measure involves the measurement of normative beliefs on a behaviour and motivation to comply. It is directly measured by a general question, which assesses the approval of important people on the practice of the behaviour in question. Perceived behavioural control is indirectly measured by assessing control beliefs and perceived power to influence behaviour. As a direct measure, it is assessed by asking how easy or difficult it is to perform the behaviour in question.

The current study used the direct form of measure. This does not make the scale less valid or reliable than if it was constructed using the indirect measure. Indeed, the validity and reliability of the theory of planned behaviour scale has been assessed across diverse behaviour and has been found that scales utilising items such as those used in the current study demonstrated acceptable validity and reliability among undergraduate students (Courneya, Bobick, & Schinke, 1999). Moreover, reliability test on attitude, which was measure with three items, revealed a Cronbach's alpha of (.58) and (.61) for University of Bergen and University of Ghana respectively, well within acceptable reliability range.

The multidimensional locus of control (MHLC) scale was developed by Wallston et al., (1978) and contains three subscales: Internal locus of control, chance locus of control and powerful others locus of control. Chance and powerful others loci of control are classified as external locus of control. Each subscale consists of six items or questions. Unlike the theory of planned behaviour, which has to adjust its scale to include the behaviour under investigation, the MHLC scale is a standardised scale used in the measure of health related locus of control. Specifically, it is used to predict health behaviour based on health beliefs. Construct validity as well as reliabilities that ranged from 0.67 to 0.77 has been reported for

the MHLC subscales (Wallston et al., 1978; Wallston & Wallston, 1981). Cronbach's alphas of the present study were comparable to those reported previously: 0.67 (internal), 0.62 (Chance), 0.69 (Powerful others) and 0.65(internal), 0.61(chance), 0.62(powerful others) for University of Bergen and University of Ghana respectively.

### **3.4. Procedure**

Cluster sampling was used to select participants from both Universities. Second year female psychology students were involved in the study. However, in Ghana, participants comprised second year students taking statistics in psychology. In both universities, only questionnaires that were completely filled were used for the final analysis. The questionnaire was self-completed by participants. Questionnaires were completed in the lecture room within 30 to 40 minutes. This ensured a high response rate of 90% and 93% for Bergen and Ghana respectively. That meant that from each subgroup, data were collected from more than 120 students. This was deliberately done to achieve 120 fully completed questionnaires from both subgroups. To ensure accurate responses, questions that were misunderstood were clarified. Participants indicated the extent to which attitudes, subjective norms and perceived behavioural control influenced their intention to practise breast self-examination. They were also asked a series of questions to determine their health locus of control. The relationship between the TPB variables and health locus of control was assessed.

Majority of students from the University of Bergen (around 64%) were in the age group (21-25). Just a few, about 5% were 31 years or more. Half of the participants in this subgroup (about 57%) were single whilst quite a number of them (about 11%) had boyfriends but were not staying with them. Most students who were 25 years or less were single whilst most of

those between 26 and 30 years were married or cohabiting. Regarding religious background, most Bergen students (about 62%) were Protestants whilst a surprising 32% were atheist.

The situation in Ghana was a bit similar. Like students from the University of Bergen, most Ghanaian students (about 59%) were between 21 and 25 years. However, around 28% were 31 years or more. Most of them were single (around 71%), but majority of students who were married were 31 years or more. Concerning their religious background, around 42% of Ghanaian students were Charismatic or Pentecostal whilst 35% were Protestants. Detailed classification of students' demographic characteristics is represented in Tables 1 and 2 below.

### **3.5. Ethical Issues**

Permission to collect data for the study was given by lecturers responsible for the two subgroups. Informed consent was obtained from participants before data collection began. Participants were informed of the purpose of the study, and what the information gathered was going to be used for. They had the choice to redraw from the study or retrieve their information after data collection. In addition, participants were informed of confidentiality on any information they provided. They were not supposed to write their names on the questionnaire. Neither were code numbers, which could possibly be traced to participants, used.

**Table 1:** Demographic variables (age verses marital status) of female students at the Universities of Bergen and Ghana

| Demographic Variables | UNIVERSITY OF BERGEN |         |         |         |              |       |
|-----------------------|----------------------|---------|---------|---------|--------------|-------|
|                       | Age group            |         |         |         |              |       |
| Marital Status        | 20 and below         | 21 - 25 | 26 - 30 | 31 - 35 | 36 and above | Total |
| Married/Cohabitation  | 5                    | 20      | 9       | 0       | 1            | 25    |
| Single                | 15                   | 48      | 4       | 2       | 0            | 69    |
| Separated/Divorced    | 0                    | 0       | 0       | 1       | 2            | 3     |
| Others                | 3                    | 9       | 1       | 0       | 0            | 13    |
| Total                 | 23                   | 77      | 14      | 3       | 3            | 120   |
| Marital Status        | UNIVERSITY OF GHANA  |         |         |         |              |       |
| Married/Cohabitation  | 0                    | 3       | 3       | 10      | 17           | 33    |
| Single                | 8                    | 68      | 4       | 3       | 2            | 85    |
| Separated/Divorced    | 0                    | 0       | 0       | 0       | 1            | 1     |
| Others                | 0                    | 0       | 0       | 0       | 1            | 1     |
| Total                 | 8                    | 71      | 7       | 13      | 21           | 120   |



**Table 2:** Demographic variables (age verses religion) of female students at the Universities of Bergen and Ghana

| Demographic Variables   | UNIVERSITY OF BERGEN |         |         |         |              |       |
|-------------------------|----------------------|---------|---------|---------|--------------|-------|
|                         | Age group            |         |         |         |              |       |
|                         | 20 and below         | 21 - 25 | 26 - 30 | 31 - 35 | 36 and above | Total |
| Protestant              | 13                   | 47      | 10      | 2       | 3            | 75    |
| Catholic                | 0                    | 0       | 0       | 0       | 0            | 0     |
| Pentecostal/Charismatic | 2                    | 2       | 0       | 1       | 0            | 5     |
| Atheist                 | 8                    | 27      | 4       | 0       | 0            | 39    |
| Muslim                  | 0                    | 1       | 0       | 0       | 0            | 1     |
| Total                   | 23                   | 77      | 14      | 3       | 3            | 120   |
| UNIVERSITY OF GHANA     |                      |         |         |         |              |       |
| Protestant              | 3                    | 29      | 0       | 3       | 7            | 42    |
| Catholic                | 3                    | 8       | 2       | 2       | 2            | 17    |
| Pentecostal/Charismatic | 2                    | 26      | 4       | 8       | 11           | 51    |
| Atheist                 | 0                    | 4       | 1       | 0       | 1            | 6     |
| Muslim                  | 0                    | 4       | 0       | 0       | 0            | 4     |
| Total                   | 8                    | 71      | 7       | 13      | 21           | 120   |

### 3.6. Scoring

Regarding attitudes towards breast self-examination, the three items measuring this variable were summed up to form a composite score. However, before the summation, two procedures were followed: first, all items were scored such that they had the same direction in meaning. Second, all three items were recoded so that the highest score represented good, beneficial or pleasant. With this, the minimum and maximum composite scores would be 3 and 21 respectively. The higher the score, the more positive students' attitudes towards BSE were. When attitude was divided into levels, a score from 3 to 9 represented negative attitudes, 10 to 14 represented neutral while 15 to 21 represented positive attitudes. For subjective norms, the scores ranged from 1 to 7. The scale was recoded such that the lowest score, 1, represented total disapproval from significant others concerning BSE whilst the highest score, 7, represented total approval. When subjective norm was divided into levels, a score from 1 to 3 represented low approval from significant others. A score of 4 represented neutral while a score from 5 to 7 represented high approval. Like subjective norms, the scores for perceived behavioural control after recode ranged from 1 to 7. While the lowest score, 1, represented how extremely easy it was to perform BSE, the highest score, 7, represented how extremely difficult it was. The intention scale was also recoded such that the lowest score, 1, signified how very unlikely one was to practise BSE while the highest score, 7, denoted how very likely a student was to perform BSE. For the actual behaviour of BSE, the options yes and no were scored as 1 and 2 respectively. After recoding the scale for knowledge on BSE, the score still ranged from 1 to 7. However, the higher the score the more knowledge one has on BSE.

Regarding the multidimensional locus of control scale, the minimum and maximum composite score for each of the subscale ranged between 6 and 42. A median split of the

composite scores indicated how high or low one was on each health locus of control. Participants who scored above the median were classified as 'high' whilst those who score below the median were classified as 'low'. For example, if a participant scored above the median of internal locus of control she is rated as 'high internal'.

## CHAPTER FOUR

### 4.1. RESULTS

Data collected was analysed using statistical tests such as Pearson correlation, chi-square analyses, regression analyses and descriptive statistics to determine the means and standard deviations and the relationships between the various variables involved in the study.

#### 4.1.1. Descriptive Statistics

The descriptive statistics are provided in Tables 3a and 3b below. An assessment of the mean values in general reveals that about 54% of females from the University of Bergen (UiB) had positive attitudes towards BSE, as compared to almost 86% of their counterparts from the University of Ghana (UoG). Twenty-two percent of females from University of Bergen as compared to 29% of their counterpart from Ghana received approval from significant others, regarding BSE. Concerning perceived behavioural control, 60% of females from Bergen compared to 41% from Ghana thought it was easy to do BSE. Even though 72% from Bergen and 47% from Ghana remarked that they were able to do BSE, 34% of females from Bergen and 49% from Ghana intended to examine their breast in the next three months. In addition, 34% from Bergen and 53% from Ghana had enough knowledge to practise BSE. Considering this relatively low percentage of participants with enough knowledge on BSE, the hypothesis that there would be a high level of awareness on BSE seemed not to be confirmed.

About the multidimensional health locus of control variables, majority of participants from both universities were high internals, about 88% and 91% from Bergen and Ghana respectively. Just a few were high externals with reference to chance: 12% and 13% from

Bergen and Ghana respectively. For high externals with reference to powerful others, about 15% and 53% were from Bergen and Ghana respectively.

In addition, the correlation coefficients showed in Tables 3a and 3b below partially confirmed the various assumptions of the TPB about the predictive lineage that exists among the model variables. All of the variables correlated significantly with intention to smoke with the highest correlation ( $r = .515$ ,  $p < .01$ ) being between subjective norms and intention for females from UiB and ( $r = .476$ ,  $p < .01$ ) between PBC and intention for UoG. This means that a positive attitude towards breast self-examination, high approval from significant others and high behavioural control are associated with a high likelihood of intention to perform breast self-examination.

Concerning the correlation between the theory of planned behaviour variables and the multidimensional health locus of control variables, there was a significant correlation between attitude and chance, ( $r = .283$ ,  $p < .01$ ) for UiB. That is, a positive attitude towards breast self-examination is associated with a higher likelihood that issues surrounding participants' health are due to chance. For UoG there were several significant correlations:  $r = .214$ ,  $p < .05$ , between subjective norms and health locus of control with reference to chance, meaning that a higher approval of breast self-examination from significant others was associated with a higher likelihood that health issues were due to chance. There was also a significant correlation between subjective norms and powerful others,  $r = .270$ ,  $p < .01$  and another between intention and internal,  $r = .203$ ,  $p < .05$ . Among the multidimensional health locus of control variables, there were correlations between internal and chance,  $r = .201$ ,  $p < .05$  and between health locus of control with reference to chance and health locus of control due to powerful others,  $r = .238$ ,  $p < .01$ , for UiB and UoG respectively.

**Table 3a:** Correlation Coefficients among study variables for female students at the University of Bergen

| Variables                               | Descriptive Statistics |       |      | Correlation Coefficients |         |        |         |       |         |       |  |
|-----------------------------------------|------------------------|-------|------|--------------------------|---------|--------|---------|-------|---------|-------|--|
|                                         | Range                  | Mean  | S.D. | 2                        | 3       | 4      | 5       | 6     | 7       | 8     |  |
| 1. Attitude                             | 3 - 21                 | 14.83 | 3.40 | .257**                   | -.474** | .413** | -.256** | -.025 | -.283** | .017  |  |
| 2. Subjective norm                      | 1 - 7                  | 3.12  | 1.86 | -                        | -.191** | .515** | -.129   | -.141 | -.092   | .088  |  |
| 3. Perceived behavioural control        | 1 - 7                  | 2.98  | 1.60 |                          | -       | .413** | .497**  | .086  | .178    | .082  |  |
| 4. Intention                            | 1 - 7                  | 3.51  | 2.07 |                          |         | -      | .370**  | .172  | .157    | -.067 |  |
| 5. Breast self examination              | 1 - 2                  | 1.27  | .45  |                          |         |        | -       | .088  | .151    | .017  |  |
| 6. Internal Variables                   | 10 - 36                | 18.83 | 4.38 |                          |         |        |         | -     | .201*   | .070  |  |
| 7. External variables (Chance)          | 7 - 34                 | 18.59 | 4.79 |                          |         |        |         |       | -       | .147  |  |
| 8. External variables (Powerful others) | 6 - 34                 | 18.36 | 5.62 |                          |         |        |         |       |         | -     |  |

**Note:** \*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

S.D. Standard deviation

**Table 3b:** Correlation Coefficients among study variables for female students at the University of Ghana

| Variables                               | Descriptive Statistics |       |      | Correlation Coefficients |         |         |         |        |       |        |  |
|-----------------------------------------|------------------------|-------|------|--------------------------|---------|---------|---------|--------|-------|--------|--|
|                                         | Range                  | Mean  | S.D. | 2                        | 3       | 4       | 5       | 6      | 7     | 8      |  |
| 1. Attitude                             | 3 - 17                 | 17.77 | 3.07 | .194**                   | -.076   | .131    | -.113   | -.025  | -.033 | -.009  |  |
| 2. Subjective norm                      | 1 - 7                  | 3.38  | 2.26 | -                        | -.389** | .328**  | -.083   | -.072  | .214* | .270** |  |
| 3. Perceived behavioural control        | 1 - 7                  | 3.78  | 1.89 |                          | -       | -.476** | .339**  | .062   | .020  | -.060  |  |
| 4. Intention                            | 1 - 7                  | 4.44  | 1.98 |                          |         | -       | -.371** | -.203* | .058  | .111   |  |
| 5. Breast self examination              | 1 - 2                  | 1.53  | .50  |                          |         |         | -       | .097   | -.025 | .017   |  |
| 6. Internal Variables                   | 7 - 33                 | 17.57 | 5.08 |                          |         |         |         | -      | .130  | -.085  |  |
| 7. External variables (Chance)          | 6 - 33                 | 17.70 | 5.52 |                          |         |         |         |        | -     | .238** |  |
| 8. External variables (Powerful others) | 8 - 42                 | 24.88 | 6.14 |                          |         |         |         |        |       | -      |  |

**Note:** \*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

**S.D.** Standard Deviation

#### 4.1.2. Regression Analyses

**Table 4a:** Summary of hierarchical regression analyses, by regressing intention on attitudes (A), subjective norms (SN) and perceived behavioural control (PBC): University of Bergen

| Step | Variables entered | R <sup>2</sup> | Change Statistics |          |      | $\beta$ | Sig. of $\beta$ |
|------|-------------------|----------------|-------------------|----------|------|---------|-----------------|
|      |                   |                | $\Delta F$        | df       | Sig. |         |                 |
| 1    | A                 | .163           | 24.231            | (1, 118) | .001 | .413    | .001            |
| 2    | A                 |                |                   |          |      | .300    | .001            |
|      | SN                | .339           | 31.478            | (2, 117) | .001 | .438    | .001            |
| 3    | A                 |                |                   |          |      | .190    | .05             |
|      | SN                |                |                   |          |      | .420    | .001            |
|      | PBC               | .380           | 25.299            | (3, 116) | .001 | .243    | .01             |

**Note:** R<sup>2</sup> variance explained;  $\beta$  Standardised regression coefficient; **df.** degrees of freedom; **Sig.** Significance

Regression analyses are presented in Tables 4a above and 4b below. Although correlation and regression analyses explain more or less the same thing, regression analysis gives a better picture of the association between factors because other factors in the analysis are controlled. Regressing the TPB variables on intention to perform BSE, attitudes contributed a variance of .163 to intention. In step two, when subjective norms were added to the equation, variance increased to .339, an increase of .176. In step three, the inclusion of PBC increased the variance to .380 indicating an increase of .041. However, the beta weights showed that all three contributed significantly to explain the variance in intention. This was for UiB. The hypothesis that attitudes and perceived behavioural control for this subgroup would be the most important predictors of intention to practise BSE was not confirmed. Rather, subjective



norms emerged as the most important predictor followed by perceive behavioural control and the attitudes. For UoG, the same procedure was repeated. Attitude contributed .009 in the first step. In the second step, subjective norms slightly increased the variance to .097 whilst in the third, with the inclusion of PBC variance explained was .236. However, only PBC contributed significantly to the explained variance as indicated by the beta weights. Clearly, the hypothesis that subjective norms would be the most important predictor for this subgroup was not confirmed.

**Table 4b:** Summary of hierarchical regression analyses, by regressing intention on attitudes (A), subjective norms (SN) and perceived behavioural control (PBC): University of Ghana

| Step | Variables entered | R <sup>2</sup> | Change Statistics |          |      | $\beta$ | Sig. of $\beta$ |
|------|-------------------|----------------|-------------------|----------|------|---------|-----------------|
|      |                   |                | $\Delta F$        | df       | Sig. |         |                 |
| 1    | A                 | .009           | 2.051             | (1, 118) | .155 | .131    | .155            |
| 2    | A                 |                |                   |          |      | .070    | .435            |
|      | SN                | .097           | 7.381             | (2, 117) | .001 | .314    | .001            |
| 3    | A                 |                |                   |          |      | .069    | .397            |
|      | SN                |                |                   |          |      | .155    | .083            |
|      | PBC               | .236           | 13.226            | (3, 116) | .001 | .410    | .001            |

**Note:** R<sup>2</sup> variance explained;  $\beta$  Standardised regression coefficient; **df.** degrees of freedom; **Sig.** Significance

#### 4.1.3 Cross tabulation and chi-square analyses

To test hypothesis 3 that high internals will have more positive attitudes towards BSE than low internals, a chi-square analysis was performed. Results from cross tabulation analyses in Table 5 below revealed that majority of both high internals (about 70%) and low internals

(76%) had positive attitudes towards BSE. The percentage for low internals, however, was slightly higher than that of high internals. Nevertheless, chi-square analysis showed no significant difference between positive, neutral or negative attitudes among high and low internals. Hypothesis 3 was thus not confirmed. In addition, there was no significant difference between low and high externals (regarding chance) even though the percentage for low externals (71%) was slightly higher than that of high externals (63%). There was a significant difference though between low and high externals (regarding powerful others). Sixty-five percent of low externals as compared to 80% of high externals in this category had positive attitudes towards BSE. High externals rather had more positive attitudes towards BSE than low externals. The chi-square analysis indicated a significant difference with a value of (6.209) at  $p < .05$ .

In Table 6 above, cross-tabulation and chi-square analysis revealed that there were no significant difference between high and low internals regarding approval from significant others to perform breast self-examination( i.e., subjective norms). The results were similar for the relationship between high and low externals (chance) and subjective norms. However, for the relationship between high and low externals (powerful others) and subjective norms, the results showed a significant difference. The results showed that 42% of high externals as compared to 23% of low externals received approval from significant others regarding the practice of BSE. The chi-square analysis indicated a value of (12.257) significant at  $p < .01$ . Hypothesis 4, which stated that high externals (regarding powerful others) would receive more approval from significant others to practise BSE than low externals was thus confirmed.

**Table 5:** Cross-tabulation and chi-square analyses of multidimensional health locus of control and levels of attitudes for Universities of Bergen and Ghana combined

| Health Locus of Control        |      | Levels of Attitude |         |          | Total | Grand Total | Chi-square analyses |    |      |
|--------------------------------|------|--------------------|---------|----------|-------|-------------|---------------------|----|------|
|                                |      | Positive           | Neutral | Negative |       |             | Value               | df | Sig. |
| Internals                      | High | 150                | 57      | 8        | 215   | 240         | .496                | 2  | .780 |
|                                | Low  | 19                 | 5       | 1        | 25    |             |                     |    |      |
| Externals<br>(Chance)          | High | 19                 | 9       | 2        | 30    | 240         | 1.252               | 2  | .535 |
|                                | Low  | 150                | 53      | 7        | 210   |             |                     |    |      |
| Externals<br>(Powerful others) | High | 65                 | 13      | 3        | 81    | 240         | 6.209               | 2  | .05  |
|                                | Low  | 104                | 49      | 6        | 159   |             |                     |    |      |

**Note:** df. degrees of freedom; Sig. Significance

**Table 6:** Cross-tabulation and chi-square analyses of multidimensional health locus of control and levels of subjective norms for Universities of Bergen and Ghana combined

| Health Locus of Control        |      | Levels of Subjective Norms |         |          | Total | Grand Total | Chi-square analyses |    |      |
|--------------------------------|------|----------------------------|---------|----------|-------|-------------|---------------------|----|------|
|                                |      | Positive                   | Neutral | Negative |       |             | Value               | df | Sig. |
| Internals                      | High | 64                         | 28      | 123      | 215   | 240         | 0.435               | 2  | .805 |
|                                | Low  | 6                          | 4       | 15       | 25    |             |                     |    |      |
| Externals<br>(Chance)          | High | 34                         | 5       | 42       | 81    | 240         | 3.837               | 2  | .147 |
|                                | Low  | 36                         | 27      | 96       | 159   |             |                     |    |      |
| Externals<br>(Powerful others) | High | 13                         | 2       | 15       | 30    | 240         | 12.257              | 2  | .002 |
|                                | Low  | 57                         | 30      | 123      | 210   |             |                     |    |      |

**Note:** df. degrees of freedom; Sig. Significance

Furthermore, cross-tabulation analysis in Table 7 below revealed similar percentage of high externals (chance): 12% and 13% from UiB and UoG respectively. However, there were more high externals (powerful others) from UoG (52%) as compared to 15% from UoB. The chi-square analysis showed a significant difference between the two universities with the value, (37.736) at  $p < .001$ . Hypothesis 5, which stated that there would be more high externals from the University of Ghana than from the University of Bergen, was partially confirmed because there was no significant difference between the universities with reference to high externals (chance).

**Table 7:** Cross-tabulation and chi-square analyses of multidimensional health locus of control and Universities

| Dimension                      |      | University |       | Total | Grand Total | Chi-square analyses |    |      |
|--------------------------------|------|------------|-------|-------|-------------|---------------------|----|------|
|                                |      | Bergen     | Ghana |       |             | Value               | df | Sig. |
| Internals                      | High | 106        | 109   | 215   | 240         | .402                | 1  | .526 |
|                                | Low  | 14         | 11    | 25    |             |                     |    |      |
| Externals<br>(Chance)          | High | 14         | 16    | 30    | 240         | .152                | 1  | .696 |
|                                | Low  | 106        | 104   | 210   |             |                     |    |      |
| Externals<br>(Powerful others) | High | 18         | 63    | 81    | 240         | 37.736              | 1  | .001 |
|                                | Low  | 102        | 57    | 159   |             |                     |    |      |

**Note:** df. degrees of freedom; Sig. Significance

#### 4.2. Summary of findings

The aims of the present study were to investigate the level of knowledge in the practice of breast self-examination as well as to identify factors that motivate female university students

to practise breast self-examination in relation to the theory of planned behaviour and multidimensional health locus of control.

The findings of the study revealed that not many female university students from both Ghana (53%) and Bergen (34%) had enough knowledge to practise breast self-examination. The descriptive statistics also showed that whilst majority (86%) of Ghanaian students had positive attitudes towards BSE just about half of the students (54%) from Bergen did. Just a few (22%) of females from University of Bergen and 29% of their counterpart from Ghana received approval from significant others regarding BSE. Concerning perceived behavioural control, 60% of females from Bergen compared to 41% found it easy to practise BSE. Thirty-four percent of female students from Bergen and 49% from Ghana intended to examine their breast in the next three months. Seventy-two percent from Bergen and 47% from Ghana remarked that they were able to do BSE. Majority of the participants were high internals: 88% and 91% from UiB and UoG respectively.

Regression analyses showed that subjective norm rather than attitudes and perceived behavioural control was the most important predictor for intention to practise BSE among female students at the UiB. For females from the UoG, perceived behavioural control was the most important predictor.

From cross tabulation and chi-square analyses, there was no significant difference between high and low internals regarding positive attitudes towards BSE. Neither was there any difference between high or low externals (chance) nor high and low externals (powerful others) regarding the performance of BSE.

High externals with reference to powerful others tended to received more approval from significant others regarding breast self-examination.

The percentage of high externals (powerful others) was greater for University of Ghana than University of Bergen.

## CHAPTER FIVE

### 5.1. DISCUSSION

The present study found that whilst majority of participants from University of Bergen indicated their ability to perform BSE, less than half of them were equipped with enough knowledge to enable them do so. Additionally, just a few have been doing breast self-examination for the past three month. At the University of Ghana, about half of the participants indicated that they were able to perform breast self-examination. Moreover, about half of them indicated they had enough knowledge to perform BSE while less than half of them were actually practising it. These results indicate a low level of awareness among female university students and as such do not confirm hypothesis one, which states that there will be a high level of awareness of BSE among university students. Previous studies have found a positive association between level of awareness and practice of breast self-examination (Misovich, Martinez, Fisher, Bryan, & Catapano, 2003). Misovich and colleagues found that women more often than not did not have sufficient information to carry out an effective BSE. When there is lack of specific information on how to effectively examine their breast, women may not benefit from doing BSE.

The frequency in which female university students practised BSE could also be reflected in their measure of health locus of control. Seeing that majority of them relied on themselves when it came to their health, it was quite surprising to find such a low level of awareness and practice of BSE. Perhaps, they could have seen their getting breast cancer based on chance. In fact, there was a moderate positive correlation between internal and chance loci of control for UiB students, in that increase in dependence on ones' self regarding health led to an increase in dependence on chance or vice versa. Probably, whilst students attributed their



becoming sick to themselves, they could also have accepted the role of chance in determining sickness and health. If they recognised breast cancer as something determined by chance, they would see no point in practising BSE when they are not in control of things. In Ghana and other African countries for instance, people have sometimes been made to believe through traditional beliefs that they are not always in charge of their health or what happens to them. People could therefore feel reluctant to take an active role as far as some health behaviours are concerned.

For females at the University of Bergen, attitudes, subjective norms and perceived behavioural control were found to contribute significantly to the variance in intention to perform breast self-examination. However, subjective norms contributed most, contrary to the hypothesis and the cultural background of this group of participants. The first part of hypothesis 2, which stated that attitudes and perceived behavioural control would be the most important predictors of intention to perform BSE, was not confirmed. One would have expected attitudes and perceived behavioural control to contribute most towards intention to perform BSE depending on this subgroup's individualistic cultural background. However, it could be that breast self-examination is a behaviour they needed more approval and encouragement from significant others especially peers, to do so. Meta-analysis of the theory of planned behaviour, however, shows that the predictive power of concepts in the model could vary according to the type of behaviour and as well as across cultures (Armitage & Conner, 2001).

For females at the University of Ghana, the contribution of attitudes to BSE intention was insignificant whilst subjective norms barely contributed significantly to the variance. Only perceived behavioural control significantly predicted BSE. The second part of hypothesis 2,

which stated that subjective norms would be the most important predictor, was also not confirmed. Considering the collective nature of the cultural system and traditional beliefs regarding health in Ghana, it would have been more explanatory for females from the University to attribute their BSE to subjective norms. This was rather usual. Perhaps as one increase in education in this type of culture, the opinion of significant others as well as traditional beliefs do not matter any more. With such high education in a society whose majority is less informed, the person herself could be considered as significant in her society and would have to take decisions on her own and sometimes even for others. She could therefore be the one to give approval and advice to others.

In addition, participants could be well informed to know that traditional beliefs are not always valid. It could also be that significant others see no point in giving approval regarding the performance of BSE when there is no disease present. Most often, it could be that they are not practicing BSE themselves. It is also possible that because of the private nature of BSE it received little reinforcement (Meyerowitz & Chaiken, 1987). The challenge is therefore left to the individual to perform the behaviour with the necessary tool she possesses usually information, which she has acquired through education.

Furthermore, hypothesis 3, which stated that high internals would have more positive attitudes towards BSE than low internals, was not confirmed. High internals did not have more positive attitudes towards BSE and chi-square analysis revealed no significant relationships between high and low internals. Neither was there any significant difference between high and low externals (chance). There was a significant relationship though between high and low externals (powerful others) and positive attitudes. However, it was participants who found their health being controlled by powerful others who also had more positive attitudes

towards breast self-examination. There is logic in this because there has usually been found a relatively strong positive correlation between attitudes and the influence of powerful others (Armitage & Conner, 2001). In a study by Armitage and Conner (2001), people who tend to depend on powerful others in the practice of behaviour, eventually tend to develop positive attitudes towards the behaviour.

Hypothesis 4, which stated that high externals with regards to powerful others will receive more approval from significant others as far as the performance of BSE is concerned was confirmed in that chi-square analysis showed a significant relationship between external locus of control (powerful others) and levels of significant others approval. On a more concrete level, participants who depended less on powerful others for their health (i.e., low externals) were not found to receive much approval from significant others concerning intention to practise BSE. Participants may not have received much approval in their intention to practise BSE because it could be that significant others expected them to take their own decision regarding BSE as well. This is probable because once participants are able to take care of their health without much dependence on others they would be expected to take their own decision regarding intention to practise BSE.

There was also hypothesis 5, which stated that a greater percentage of high externals (powerful others) would come from the University of Ghana. This assumption was made due to the cultural background of this group of participants. Cross-tabulation and chi-square analysis confirmed the hypothesis. The fact that University of Ghana had more participants with powerful others locus of control than University of Bergen could be linked to Ghanaians traditional beliefs on sickness and healing.

## **5.2. LIMITATIONS**

The study used university students. Due to this reason, generalisation of findings to the whole population is limited. All the same, generalisation of findings could extend to subgroups with high educational background.

For a better assessment of female university students' attitudes and other factors towards BSE, the study acknowledges that a large sample size would have been ideal. However, the burden of financial and time constraints may not allow the utilisation of a bigger sample size.

## **5.3. CONCLUSION**

Previous studies have used the theory of planned behaviour and the multidimensional health locus of control in the prediction of health behaviour. However, this study is one of the few if not the only one to have combined the two theories in the study of BSE using an African context. The study provides evidence of a relationship between external locus of control (powerful others) and subjective norms. In addition, there is also the evidence that attitudes and perceived behavioural control may not always be the necessary predictors for certain health behaviours in individualistic culture. On the other hand, subjective norms may not always be the most important determinant of health behaviour in collectivistic culture, or more appropriately among the educated population in this culture.

There is also evidence of a general lack of awareness and practice of breast self-examination among women though BSE could be beneficial in early detection of breast cancer.

Although there was a significant difference between the two universities regarding powerful others locus of control, the findings did not necessarily show more internals from the

University of Bergen. Actually, there was no significant difference between the percentages of internals from both Universities. The general impression from the findings revealed that participants were not clearly defined into the different dimensions of health locus of control. That would have been ideal but the findings confirmed the real world situation in that the various dimensions in health locus of control could overlap. Individuals could thus have both internal and external loci of control and either of them could be brought into focus depending on the type of health behaviour.

#### **5.4. RECOMMENDATION**

Female university students do not have enough knowledge and skills to practise BSE. For women to benefit from BSE they should be equipped with the necessary tools and knowledge to be able to do so. Women from these universities and elsewhere could come together to form groups which campaign, promote as well as teach skills to practise BSE. Through this, women would be given the right information on BSE with details on procedure and benefits. Consequently, women would be encouraged to practise BSE based on their own initiatives.

Moreover, women could be encourage to support their peers in the practice of BSE and by so doing portray BSE as a healthy behaviour. When women develop positive attitudes towards BSE as well as receive support or approval from significant others, with the necessary information on BSE, they would be fully equipped with the necessary tools (e.g., self-efficacy or behavioural control) to engage in the behaviour.

Besides, more studies will have to be conducted in Ghana or Africa to ascertain the applicability of the theory of planned behaviour as well as the trend of prediction among the concepts in this context. Future research is also recommended using a combination of both

theory of planned behaviour and multidimensional locus of control in a Ghanaian context.

This way, predictors of BSE could be identified and focused on in intervention programmes.

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## **APPENDICES**

### **A. INFORMATION ON BREAST SELF-EXAMINATION**

Take charge and put your breast health in your own hands!

Learn and practise Breast Self-Examination (BSE) regularly. It is easy, convenient and inexpensive!

LOOK and FEEL what is normal for you.

For any spontaneous change, see your physician without delay!

Make sure you compliment your BSE with a yearly physical exam of your breasts by a trained professional and ask about risk factors and breast screening.

Breast self-examination for mothers, sisters, daughters, grandmothers, aunts, cousins, friends and the men in your life too.

- BSE is done monthly
- 7 - 10 days from the first day of your period
- Same day every month if you are not menstruating

### **LOOK**

- Stand in front of a mirror and look at each breast separately. Note the size, shape, colour, contour and direction of your breasts and nipples.
- Raise your arms over your head and look at your breasts, as you turn slowly from side to side.
- Press your hands on your hips and push your shoulders forward. Look at each breast separately.



**FEEL**

- Stand in front of a mirror and start BSE just below the collarbone.
- Use the left hand for the right breast. Moisten the pads of your three middle fingertips with body lotion. Apply firm pressure and make small circles as you go back or forth (up or down, circular or spoke style) in a pattern covering all the breast area including the nipple.
- Extend the examination to the breast tissue in the underarm.
- Change your hand and repeat BSE on the opposite breast.
- Lie down and raise one arm above your head. Examine your breasts as before, omitting the underarm.
- Change your arm and repeat BSE on the opposite breast.

**NOTE**

- Record your observations and mark your calendar for BSE next month!

**Breast cancer warning signs**

Most changes are benign, but to be sure, please have unusual or spontaneous changes checked by a physician without delay.

- Lump or thickening (breast, underarm)
- Red or hot skin
- Orange peel skin
- Dimpling or puckering

- Unusual pain
- Itch or rash, especially in nipple area
- Retracted nipple
- Change in direction of nipple axis
- Bloody or spontaneous discharge from nipple
- A sore on the breast that does not heal

Source: **infobreastcancer.ca**

## B. STUDY QUESTIONNAIRE

**Dear participant,**

This data is about women's attitudes towards breast self-examination. You are one of the women who have been chosen to complete this questionnaire. I would therefore appreciate it so much if you could spend some few minutes of your precious time to fill the questionnaire for me. You are allowed to redraw from the study if you deem it so. You are assured of anonymity responses. Results would be collated into a report such that no one person's response would show up. There are no right or wrong answers. What I need from you is an honest answer, one that represents what you are and think.

**Please do not omit any question.**

**Once again, thank you for your time.**

### Section A

#### 1. Age group

- i. 20 and below
- ii. 21 - 25
- iii. 26 -30
- iv. 31 -35
- v. 35+

#### 2. Marital Status

- i. Married/cohabitation.....
- ii. Single .....
- iii. Separated/Divorced .....
- iv. Other (please specify) .....

#### 3. Religion

- i. Protestant .....
- ii. Catholic .....
- iii. Pentecostal/Charismatic .....
- iv. Other (please specify).....

#### 4. Course of study .....

**Section B**

1. I am able to do breast examination on my own.

- a. Yes
- b. No

In this questionnaire, you will find a number of statements. For each statement, a scale from 1 to 7 is provided. In each case, circle a number from 1 to 7 to indicate whether or not you agree with the statement. There are no right or wrong answers.

**Please answer all items.**

2. How much does this apply to you? I have enough knowledge on breast self- examination.

Exactly  
applies

Does not apply  
at all

1.....2.....3.....4.....5.....6.....7

3. For me to do breast self-examination for the next three months is

a. Good

Bad

1.....2.....3.....4.....5.....6.....7

b. Harmful

Beneficial

1.....2.....3.....4.....5.....6.....7

c. Pleasant

Unpleasant

1.....2.....3.....4.....5.....6.....7

4. How much does this apply to you? Most people who are important to me think that I should do monthly breast self-examination for the next three months.

Exactly  
applies

Does not apply  
at all

1.....2.....3.....4.....5.....6.....7

5. It is easy for me to do breast self-examination for the next three months.

Extremely  
easy

Extremely  
difficult

1.....2.....3.....4.....5.....6.....7

6. I have been doing breast self –examination every month for the past three months.

Exactly  
applies

Does not apply  
at all

1.....2.....3.....4.....5.....6.....7

7. I can do monthly breast self-examination in the next three months if I want to.

Exactly  
applies

Does not apply  
at all

1.....2.....3.....4.....5.....6.....7

8. How likely it is that you will intend to do breast self-examination for the next three months?

Very likely

Very unlikely

1.....2.....3.....4.....5.....6.....7

**Section C****Multidimensional Health Locus of Control Scale**

Please answer each of the following statements with a 'circle' around the appropriate number, (1 to 7) or (7 to 1), about how strongly you agree or disagree with the statements about your health.

**There are no right or wrong answers.**

1. If I get sick, it is my own behaviour, which determines how soon I get well again.

|                   |       |                   |            |                      |          |                      |
|-------------------|-------|-------------------|------------|----------------------|----------|----------------------|
| Strongly<br>agree | Agree | Somewhat<br>agree | Don't know | Somewhat<br>disagree | Disagree | Strongly<br>disagree |
| 1                 | 2     | 3                 | 4          | 5                    | 6        | 7                    |

2. No matter what I do, if I am going to get sick, I will get sick.

|                   |       |                   |            |                      |          |                      |
|-------------------|-------|-------------------|------------|----------------------|----------|----------------------|
| Strongly<br>agree | Agree | Somewhat<br>agree | Don't know | Somewhat<br>disagree | Disagree | Strongly<br>disagree |
| 7                 | 6     | 5                 | 4          | 3                    | 2        | 1                    |

3. Having regular contact with my physician is the best way for me to avoid illness.

|                   |       |                   |            |                      |          |                      |
|-------------------|-------|-------------------|------------|----------------------|----------|----------------------|
| Strongly<br>agree | Agree | Somewhat<br>agree | Don't know | Somewhat<br>disagree | Disagree | Strongly<br>disagree |
| 7                 | 6     | 5                 | 4          | 3                    | 2        | 1                    |

4. Most things that affect my health happen to me by accident.

|                   |       |                   |            |                      |          |                      |
|-------------------|-------|-------------------|------------|----------------------|----------|----------------------|
| Strongly<br>agree | Agree | Somewhat<br>agree | Don't know | Somewhat<br>disagree | Disagree | Strongly<br>disagree |
| 7                 | 6     | 5                 | 4          | 3                    | 2        | 1                    |

5. Whenever I do not feel well, I should consult a medically trained professional.

|                   |       |                   |            |                      |          |                      |
|-------------------|-------|-------------------|------------|----------------------|----------|----------------------|
| Strongly<br>agree | Agree | Somewhat<br>agree | Don't know | Somewhat<br>disagree | Disagree | Strongly<br>disagree |
| 7                 | 6     | 5                 | 4          | 3                    | 2        | 1                    |

6. I am in control of my health.

|                   |       |                   |            |                      |          |                      |
|-------------------|-------|-------------------|------------|----------------------|----------|----------------------|
| Strongly<br>agree | Agree | Somewhat<br>agree | Don't know | Somewhat<br>disagree | Disagree | Strongly<br>disagree |
| 1                 | 2     | 3                 | 4          | 5                    | 6        | 7                    |

7. My family has a lot to do with my becoming sick or staying healthy.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

8. When I get sick I am to blame.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 1              | 2     | 3              | 4          | 5                 | 6        | 7                 |

9. Luck plays a big part in determining how soon I will recover from an illness.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

10. Health professionals control my health.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

11. My good health is largely a matter of good fortune.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

12. The main thing, which affects my health, is what I myself do.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 1              | 2     | 3              | 4          | 5                 | 6        | 7                 |

13. If I take care of myself I can avoid illness.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 1              | 2     | 3              | 4          | 5                 | 6        | 7                 |

14. When I recover from illness, it's usually because other people (for example, doctors, nurses, family, and friends) have been taking care of me.

|                |       |                |            |                   |          |                   |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

15. No matter what I do, I'm likely to get sick.

| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

16. If it is meant to be, I will stay healthy.

| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |

17. If I take the right actions, I can stay healthy.

| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| 1              | 2     | 3              | 4          | 5                 | 6        | 7                 |

18. Regarding my health, I can only do what my doctor tells me.

| Strongly agree | Agree | Somewhat agree | Don't know | Somewhat disagree | Disagree | Strongly disagree |
|----------------|-------|----------------|------------|-------------------|----------|-------------------|
| 7              | 6     | 5              | 4          | 3                 | 2        | 1                 |