PSYCHOSOCIAL CORRELATES OF BREAST SELF EXAMINATION AND MAMMOGRAPHY

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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ABSTRACT

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The objective of this study was to examine the relationship between psychosocial correlates (big 5 personality traits, dispositional optimism, the Health Belief Model, breast cancer fear, mammography self efficacy, and social support) and breast self examination (BSE) and mammography in breast cancer-free women. In order to measure the social support of the participants, the MOS social support survey was adapted to Turkish culture in the scope of study 1. The sample of the study 1 included 241 participants. The analyses showed that Turkish version of the MOS social support survey had satisfactory psychometric properties. The sample of the study 2 was composed of 230 asymptomatic women for breast cancer. Independent samples t-test results indicated that among the Health Belief Model notions, perceived benefit, barrier, confidence, and health motivation significantly differentiated women who practiced BSE and who did not. However, the HBM notions were not able to differentiate women who had mammography and who did not have. Instead, social support significantly clarified the difference between

women who had mammography and women who did not have. Two hierarchical logistic regression analyses were carried out for BSE and mammography. Big 5 personality traits and dispositional optimism were entered at the first step. The HBM factors and self efficacy were entered at the second step. Breast cancer fear was added at the third step; and for the last step social support measures were added to the equation. For BSE, hierarchical logistic regression yielded no significant predictors but BSE confidence and susceptibility from the HBM. For mammography, the hierarchical logistic analysis resulted that only functional support, which was entered at the fourth step was significant. The strengths and limitations, as well as the implications of the findings, were discussed.

Keywords: Breast cancer, screening, the Health Belief Model, social support

ÖZ

KENDİ KENDİNE MEME MUAYENESİ VE MAMOGRAFİNİN PSİKOSOSYAL BAĞINTILARI

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Bu çalışmanın amacı meme kanseri olmayan kadınlardaki psikososyal değişkenler (beş faktör kişilik özellikleri, iyimserlik, Sağlık İnanç Modeli, meme kanseri korkusu, mamografi kendine güven ve sosyal destek) ile kendi kendine meme muayenesi (KKMM) ve mammografi arasındaki ilişkiyi incelemektir. Katılımcıların sosyal desteklerini ölçmek amacı ile MOS sosyal destek ölçeği 1. çalışma kapsamında Türk kültürüne uyarlanmıştır. Birinci çalışma 241 katılımcı ile gerçekleştirilmiştir. Bulgular, MOS sosyal destek ölçeğinin Türk versiyonunun yeterli psikometrik özelliklere sahip olduğunu göstermiştir. Ikinci çalışmanın örneklem grubunu meme kanseri olmayan 230 kadın oluşturmuştur. Bağımsız gruplarda t-testi sonuçları Sağlık İnanç Modeli kavramları içerisinden algılanan yarar, engel, güven ve sağlık motivasoyonunun KKMM uygulayan ve uygulamayan kadınları anlamlı düzeyde farklılaştırmıştır. Ancak, Sağlık İnanç Modeli kavramları mamografi yaptıran ve yaptırmayan kadınları ayrıştıramamıştır. Bunun yerine, sosyal destek mamografi yaptıran ve yaptırmayan kadınları anlamlı düzeyde ayrıştırmıştır. Mammografi ve KKMM için iki hiyerarşik lojistik regresyon

uygulanmıştır. Beş factor kişilik özellikleri ve iyimserlik ilk basamağa girilmiştir. Sağlık İnanç Modeli faktörleri ve öz etkinlik ikinci bsamağa girilmiştir. Meme kanseri korkusu üçüncü basamağa eklenmiştir ve son basamakta sosyal destek ölçenleri denkleme eklenmiştir. KKMM için Sağlık İnanç Modeli'den güven ve yatkınlık haricinde anlamlı yordayıcı bulunmamıştır. Mamografi için hiyerarşik lojistik regresyon analizi sadece son basamakta girilen sosyal desteğin yordayıcı olduğunu göstermiştir. Çalışmanın güçlü ve zayıf yönlerinin yanısıra, çıkarımlar da tartışılmıştır.

Anahtar kelimeler: Meme kanseri, tarama, Sağlık İnanç Modeli, sosyal destek

To My Lovely Family,

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CHAPTER I

INTRODUCTION

The definition of World Health Organization (WHO) states that "Health is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity" and thus indicates that health does not comprise of only being completely free from illnesses. Therefore, this definition confirms that health does also mean being in a positive state. Moreover, WHO's definition affirms that health is a multifaceted state; necessitating physical wellbeing; however it does not solely depend on being physically well, but it also requires being in a mentally and socially good state. In this perspective, biopsychosocial model suggested by Engel (1977) is congruent with WHO's definition of health. As indicated by biopsychosocial model explaining the reasons of health and illness, interaction of biological, psychological and social dimensions determines the status, whether one is healthy or not. When compared, both WHO's definition of health and the biopsychosocial model point out three important determinants of health; physical, psychological, and social states.

Most people value health and want to be free from disease and disability. However, many people engage in activities such as smoking, maintaining a sedentary lifestyle, skipping physical exercise, eating fatty foods etc., which may result in adverse health outcomes. Health promoting behaviors; on the contrary, help people avoid adverse health outcomes, minimize disease and disability; and therefore, maximize health. In the light of WHO's definition of health and the biopsychosocial model, health promoting behaviors should all show up in physical, psychological and social states. In other saying, in order to be healthy and stay healthy, one needs to behave in ways which promote physical, psychological and social wellbeing. Getting merely physical helps to avoid or to recover from a disease does not call for being in a complete healthy state; rather one also needs to engage

in psychologically and socially advantageous activities together with obtaining physical help.

In an attempt to explain the differences in behaviors of people regarding adopting and maintaining health promoting behaviors, several theories were offered. One of the widely used theories is The Health Belief Model (HBM) in providing a guiding framework for health behavior intentions. Originally developed in 1950s in The U.S. Public Health Service to explain the common failure of people to attend in programs preventing and detecting diseases (Hochbaum, 1958; Rosenstock, 1960, 1974), the model was evolved in time according to the reactions of practical public health concerns (Champion & Skinner, 2008).

1.1. The Health Belief Model

As its name implies, the HBM hypothesizes that personal beliefs and perceptions are important determinants of health seeking behavior (Champion & Skinner, 2008). The model presupposes that four main beliefs can contribute to health related behaviors namely, *perceived susceptibility, perceived severity, perceived benefits and perceived barriers*. Each of these beliefs, individually or in combination, can be utilized to explain health related behaviors. *Perceived susceptibility* is the belief concerning the possibility of catching a disease or a health related problem. The perception of seriousness can depend on both medical knowledge of a disease and beliefs concerning the difficulties a disease would lead to or the effects of the disease that would have on life. *Perceived severity* refers to how serious contracting a disease and its consequences are. When combined, perceived severity and susceptibility form "perceived threat" (Strecher, & Rosenstock, 1997, Champion, & Skinner, 2008). *Perceived benefits*, on the other hand, is one's opinion of the usefulness of a new behavior in decreasing the probability of developing a disease. Lastly, *perceived barriers* refer to the physical and psychological costs of the advised action form perceived barriers (Champion, & Skinner, 2008).

Self efficacy, the belief in one's own ability to execute a behavior (Bandura, 1977), is also a component of the HBM. Different from outcome expectations, i.e.

specific outcome expectation in response to a behavior, self efficacy was introduced to HBM by Rosenstock, Strecher, and Becker (1988) as a new construct in addition to the aforementioned four main beliefs. The rationale lying behind this addition is that people do not experience something new until they trust themselves that they are capable to execute it. For breast self-examination (BSE), this belief was studied and it was shown that people do not perform BSE because they felt the fear of not performing it with a perfect manner (Umeh, & Rogan-Gibson, 2001).

When the HBM was used as an explanatory model, results suggested that for preventive behaviors, perceived barriers and susceptibility are the most important predictors (Janz, & Becker, 1984; Rutledge, Hartmann, Kinman, & Winfield, 1988). But more generally, it is suggested that perceived barriers were the most powerful single predictor across all studies (e.g., Umeh, & Rogan-Gibson, 2001); whereas for the weakest predictor, each study offers different constructs such as perceived severity (Janz, & Becker, 1984; Champion, & Skinner, 2008) and perceived benefit (Stain, Fox, Murata, & Morisky, 1992).

Together with the four main components of HBM and the self efficacy component, "cues to action" is also seen in the model conceptualization presented above, because early formulations of the model included it (see Figure 1). Hochbaum (1958) stated that both perceived susceptibility and benefits (readiness to take action) can be triggered by cues to initiate an action. Examples to these cues can be bodily or environmental events; however, unfortunately neither Hochbaum nor other researchers investigated these cues empirically due to the nature of them, in other words, they are hard to be measured by explanatory questionnaires or by other observable ways (Champion & Skinner, 2008). Cues to action may include mass media campaigns, advice from others, and illness of a family member or a friend (Becker, Maiman, Kirscht, Haefner, & Drachman, 1977).

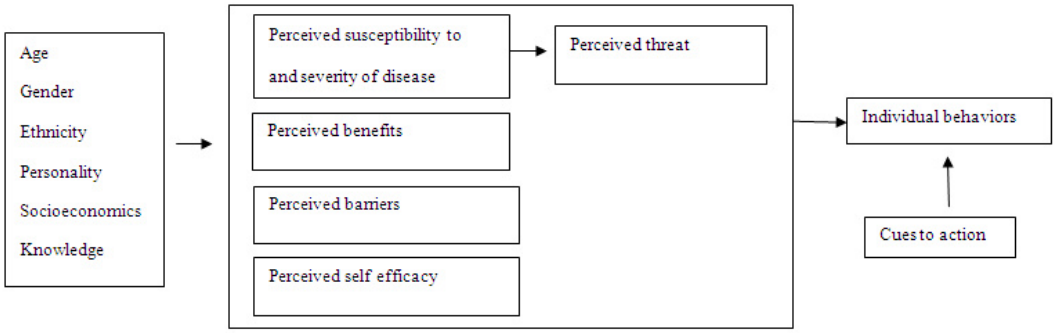

Figure 1. Health Belief Model Components and Linkages

1.2. The Health Belief Model and Research

The HBM performance was tested by several studies targeting different research questions. The HBM was used for dietary compliance (Becker, Maiman, Kirscht, Haefner, & Drachman, 1977), medical regimen compliance of psychiatric patients (Kelly, Mamon, & Scott, 1987), medical regimen compliance of adolescents with insulin dependent diabetes mellitus (Bond, Aiken, & Somerville, 1992), adolescents' fertility control (Eisen, Zellman, & McAlister, 1985), decision of influenza vaccination among the elderly (Nexoe, Kragstrup, & Sogaard, 1999; Lai et al, 2004), and breast cancer screening (Champion & Hustler, 1995; Champion, 1984; 1993; 1995; Umeh & Rogan-Gibson, 2001; Secginli & Nahcivan, 2004; 2011; Hajian, Vakilian, Najabadi, Hosseini, & Mirzaei, 2011). In terms of breast cancer screening behaviors, interventions aspiring increase in the performance of breast self examination (BSE) and mammography behavior were implemented. The HBM foresees that if women feel susceptible to breast cancer, perceive breast cancer as a severe disease, think perceived barriers to screening as lower than perceived benefits, have high self efficacy to execute mammography behavior and obtain a cue to act are more likely to abide by their mammography screening regimen. Therefore, several studies explored the existence of these links between HBM and mammography adherence. Indeed, higher perceived susceptibility, lower perceived barriers, higher perceived benefits, and cues such as recommendation from health care providers were found to be significantly

associated with mammography adherence (Champion, 1984; Champion & Menon, 1997; Friedman, Neff, Webb, & Latham, 1998; Philips et al., 1998; Champion, Ray, Heilman, & Springson, 2000).

1.3. Breast Cancer Statistics

Cancer is one of the leading causes of mortality worldwide. With its all types, it follows cardiovascular diseases in terms of mortality statistics. More specifically, breast cancer is the most frequent type of cancer occurring in women (Parkin, Bray, Ferlay, & Pisani, 2005). According to National Program of Cancer Registries in USA, which was released by Department of Health and Human Services Centers for Disease Control and Prevention, breast cancer is the single most frequent type of cancer in women, regardless of their ethnicity (2007). The Global Cancer Report 2002, in a similar vein, indicated that breast cancer is fifth in the frequency line of mortality, is the second most common cancer, and is the most prevalent cancer in the world with 23 % of all cancers (Parkin, Bray, Ferlay, & Pisani, 2005). Breast cancer prevalence is the highest one because of its high incidence and relatively good prognosis, which makes the number of live patients rise up. Moreover, this report pointed out the comparative prevalence rates of breast cancer in the developed versus developing countries. When contrasted, breast cancer is more common in the developed countries such as Europe and North America; however, in Asia and particularly in Africa its incidence is lower than developed countries. The reason lying under this explanation is rationalized as the available developed techniques to detect cancer in the early phase in the developed countries (Parkin, Bray, Ferlay, & Pisani, 2005).

These cancer statistics are similar to their counterparts in Turkey. For example, The Ministry of Health stated that more women were diagnosed with breast cancer between 2004 and 2006 with a percentage of 27 % in the Cancer Incidence Report. Similarly, Turkish Statistical Institute's Turkey in Statistics Report (2011) revealed that breast cancer had the highest incidence percentage in women. In addition to these facts, breast cancer is the second leading cause of cancer related deaths in Turkey (Secginli & Nahcivan, 2004; Dündar et al., 2006).

Moreover, with the help of comparative statistics, the report addressed that the number of diagnosed women were increasing in each year between 2006 and 2008 from 37.6% to 41.6 %. In a review, Özmen (2008) pointed out that there has been 300 % increase in the incidence rate and prevalence of breast cancer in Turkey, so that he affirmed the seriousness of the issue.

1.4. Breast Cancer Screening

In the light of the seriousness of these statistics and the fact that breast cancer has a good prognosis as long as it is detected in an early phase, breast cancer screening has gained importance in terms of attenuating the mortality rates. In 2000, American Cancer Society (ACS) recommended monthly breast self examination (BSE) for women beginning from age 20; and for individuals between ages 20 and 39, ACS guidelines suggested clinical breast examination (CBE) in every three years. From age 40, ACS, in its updated guidelines, stated that women should have yearly mammograms (which is a specific type of imaging that uses low-dose x-ray system to examine breasts) together with CBE (Smith, Mettlin, Davis, & Eyre, 2000). However, ACS Guidelines issued in 2006 no longer recommended regular BSE; instead it suggested women to gain awareness of benefits, harms and consequences of BSE (Smith, Cokkinides, & Eyre, 2006). Nevertheless, BSE has importance in terms of arousing public education and awareness of breast cancer screening for asymptomatic women. Moreover BSE is still suggested as a breast cancer screening modality in Cancer Prevention and Early Detection Facts and Figures (2009) by American Cancer Society.

The rationale of instability regarding BSE recommendation can be inferred from the results of the studies that took different perspectives in evaluating the effectiveness of BSE. For instance, a study conducted by Thomas et al. (2002) in Shangai aimed to see whether intensive performance of BSE reduces the number of breast cancer related women deaths and concluded that BSE per se does not cause a decline in mortality cases; rather they suggested women to be informed that without mammography concomitance, intensive execution of BSE does not exclude the chance of having benign breast biopsy. This argument was expanded by Anderson,

Braun, Lim, Smith, Taplin, and Thomas (2003), who shed light on the issue that BSE and CBE were found be unlikely to reduce breast cancer related deaths due to the fact that data from countries with limited health related resources are underrepresented. These researchers drew attention to the countries with limited resources and claimed that especially in these countries BSE is an important part of breast care in early diagnosis of symptomatic women and screening in asymptomatic women; moreover, BSE has importance in breast health education for all countries. BSE was also proposed to prepare women adhering to CBE and mammography in later life.

Secondly, BSE is still continued to be recommended because mammography as well as CBE require effort, technical expertise, and particularly mammography is rather expensive (Özmen, 2008; Anderson et al., 2003). Moreover, many studies indicated that BSE is beneficial in detecting breast cancer earlier and when the lumps are smaller (Smith, & Burns, 1985; McPherson, Swenson, Jolitz, & Murray, 1997; Anderson & Jakesz, 2008). Accordingly, Norman and Brain (2005) offered to perform BSE together with CBE and mammography. Basically, these researchers stressed the importance of coupling BSE performance and reduction in breast cancer worries for more effective BSE to be executed (2005).

1.5. Correlates of Breast Cancer Screening

1.5.1. Dispositional Optimism

Breast cancer diagnosis is an extraordinary stressful experience for women and the disease has aggressive ways of treatment such as total mastectomy. It also involves adjuvant therapies such as chemotherapy or radiotherapy, which have serious negative side effects, such as problems with body image and sexuality. Therefore, researchers have been trying to find ways to develop interventions to decrease stress and increase wellbeing and quality of life of the patients (Compass & Luecken, 2002). Studies revealed that breast cancer diagnosis is mostly accompanied by high levels of negative emotions and psychological distress

(Compass & Luecken, 2002), especially anxiety and depression (Carver et al., 1993; Epping-Jordan et al., 1999).

When the characteristics of the patients are studied in terms of psychological distress caused by breast cancer, younger age was associated with more anxiety and depressive symptoms (Stanton et al., 2000), and low levels of education was found to be related with poorer psychological adjustment (Epping-Jordan et al., 1999). Among the personality characteristics, dispositional optimism was found to be strongly related with fewer symptoms of depression and anxiety, greater quality of life, and greater acceptance (Carver et al., 1993; Epping-Jordan et al., 1999).

In a study conducted by Matthews and Cook (2009), women with breast cancer and receiving radiation therapy were assessed in terms of optimism, coping, self transcendence, and emotional well being (EWB). The result of this study demonstrated that optimism is not directly related with any type of coping strategies and the researchers claimed that optimistic women apply fewer coping strategies if they do not perceive the need to utilize them. Instead, they suggested that optimism and EWB are interrelated with the mediation effect of self transcendence. In other words, women with optimistic tendency may have high emotional well being as long as they are high on self transcendence; have a personal journey to self discovery.

Thinking about the interaction of optimism and cognitive appraisals in terms of the reactions when faced with a situation having a potential threat, Brain and colleagues (2008) conducted a study with young women with a family history of breast cancer following mammography screening. Women with a significant family history of breast cancer were assessed three times with questionnaires. The first one was one month prior to screening, the second one was one month after the screening, and the third one was six months after they obtained screening results. Lower dispositional optimism was found to be associated with high cancer worry scores at one month and six months after the screening result was obtained. This study supported other studies clarifying negative effects of a pessimistic personality style in reaction to breast cancer diagnosis (Carver et al., 1993) and breast cancer risk perception (Norman & Brain, 2007). Similarly, another study of a research team

replicated the result of the previous one by finding that appraisal of high relevance and threat increased risk perception; and low dispositional optimism was strongly associated with breast cancer specific distress among young women (Henderson et al., 2008).

Another study investigated the effect of the components of the HBM and dispositional optimism on a prevention intention (accepting to be inoculated not to catch a disease) in two different groups of participants, i.e. Hong Kong Chinese adolescents and adults. In the study, participants were introduced with an imaginary flu outbreak and offered vaccines to overcome the flu (Lai et al., 2004). The study design involved manipulation of the HBM components, namely benefits (effectiveness) and barriers in each treatment type. The participants' intention to take the vaccine for each treatment type was measured as well as the dispositional optimism of the participants. Results revealed that both adolescents and adults have higher intention to be inoculated when benefits (effectiveness) are high and barriers are low. However, optimism showed its effect on acceptance of inoculation only in adolescent participants, in other words, adolescents with higher optimistic tendencies were more favorable to take the vaccine than their low level optimistic counterparts.

The findings about optimism and preventive health behaviors are important in the discussion about the division in researchers' stance regarding health related behaviors and optimism. At one side, researchers supported the idea that optimistic people involve in preventive health related behaviors less, because they hold self enhancing cognitive biases; thereby underevaluate their risk of developing a disease (e.g., O'Brien et al., 1995). On the other hand, some researchers think that people with high levels of optimism have positive expectations about health preventive behaviors such as breast self examination, and are aware of the benefits of them; they engage in these behaviors more than those with low levels of optimism (Friedman, Nelson, Webb, Hoffman, & Baer, 1994). From this perspective, Lai et al.'s study supports the latter type of the researchers and strengthens the implication that optimism is consistently related with more health preventive behaviors (2004).

1.5.2. Self Efficacy

As mentioned before, perceived self efficacy is a construct presented as a part of the HBM and its linkages; and later it is suggested to be added to the four core beliefs of the HBM by Rosenstock, Strecher, and Becker (1988). In parallel with this conclusion, Schwarzer (2001) put a discussion about the factors affecting the mechanisms of changing health compromising behaviors. Schwarzer suggested that change in health related behaviors is a double barreled process and he offered The Health Action Process Approach (the HAPA) for the accountability of change in health related behaviors (2001). According to the HAPA, motivation takes the leading stance in the alteration of a behavior by introducing intention to change. Intention to change can be emerged when a *threat for health is perceived* and it apparently augments the motivation and intention to change a behavior. Moreover, *outcome expectancies* are the second resource of motivation and it is the most influential belief to alter a behavior. Third, *perceived self efficacy*, one's belief in personal capacity to have power on their behaviors and the challenges of a task (Bandura, 1977), is another factor prompting motivation to change a habit. Belief in the capacity of the self in order to exercise power on a task is optimistic self belief and this make people to determine to pursuit a goal, how much power to exercise on this way, how much time they can exercise this power, to what extent they can confront the challenges in the process of alteration of a habit. In sum, risk perception initiates the emergence of the intention to change, thereafter outcome expectancies and perceived self efficacy provided more supplementary effect to finalize the job. However, after a goal has been set, the importance of roles of risk perception and the outcome expectancies fade and thereby the efficiency of self efficacy increases substantially.

Schwarzer (2001), in continuation of his suggestion regarding the change of health habits, alleged that the second part in the change of health behaviors comprises of self-regulatory processes such as goal pursuit, i.e., taking real action upon the decision of the goal and persistence. Therefore, he maintained that *planning, initiation, maintenance, relapse management, and disengagement* are the parts of goal pursuit; they provide the progression of the pursuit and the motivation

to make several trials in the face of entrenched inhibiting habits. Lastly, Schwarzer recommended that along this continuation, a person progresses throught these phases and it is the self efficacy which bears more of the importance in moving a person from one stage to another stage above (2001). Supporting the suggestions of Health Action Process Model, a study conducted by Meyerowitz and Chaiken (1987) concluded that BSE interventions enhancing personal efficacy are more productive than interventions prompting risk and fear perception; and included arguments framed in loss language. In a similar vein, Luszczynska and Schwarzer conducted a study searching for the effect of the HAPA components on BSE. They postulated that threat perception to health did not show strong relationships with other factors related with BSE performance. Whereas, self efficacy was found to be the best predictor for the intention and planning components, and it is the second best predictor of BSE behavior, after planning (2003).

When the HAPA is compared with the constructs of the HBM some similarities attract attention. For example, the HBM conceptualization includes an underlying concept named as *perceived threat,* which is the integration of perceived susceptibility and perceived severity beliefs (Strecher & Rosenstock, 1997; Champion & Skinner, 2008). Perceived threat from the HBM can be a counterpart of *health threat perception* part of the motivational process in the HAPA. This similarity relied on the fact that both constructs call attention to personal perception of the risk and threat of engaging in or avoiding a particular health behavior. Another shared point could be the expected change in health behavior, which is called in the HAPA as *outcome expectancy* and in the HBM as *perceived benefits*. Both of these structures point the self interest derived from the alteration of or engagement in a particular health behavior. Lastly, both the HBM and the HAPA acknowledge a construct named as *perceived self efficacy*; however, the HBM scale does not cover this component. Rather, the HBM scale includes a construct named as confidence which resembles the self efficacy. Because of this reason, as Rosenstock, Strecher and Becker (1988) recommended, perceived self efficacy should be added to support the latest conceptualization of the HBM. If this is

accomplished, the HBM could represent many concepts listed under the motivational part of the HAPA.

With regard to accountability of health behavior change, the HBM also proposes environmental factors under the umbrella of *perceived barriers* to foster behavior modification that requires the use of positive and negative reinforcement to overcome skill deficits (Elder, Ayala, & Harris, 1999). Unfortunately, this concept does not take part in the HAPA since it mostly stresses the "self", the core inner part in determination of the behavioral alteration.

Self efficacy is not only valued by the HBM and the HAPA, but it also finds place in Protection Motivation Theory (PMT) proposed by Rogers (1975; 1983). In its early formulation, Rogers argued that motivation to protect self and promote change in a health behavior rely on two cognitive processes; namely *threat* and *coping appraisal*. *Threat appraisal* is a product of perception of personal risk of vulnerability to a disease and the serious consequences of the disease. Whether a person will respond and how a person will respond to this threat appraisal will be determined by *coping appraisal*. Response efficacy is the belief that whether adopting a behavior pattern could cause a decrease in the threat perception; and therefore, it is the main determinant of the coping appraisal (1975).

After the revision of this early formulation of PMT, Rogers added *self efficacy* as an expansion of coping appraisal to his theory as well as perceived costs of taking a protective action and rewards of avoiding acting (1983). This revised model, specifically maintains that high perceived severity of the illness, greater likelihood of developing the illness, higher perceived effectiveness of the protective action, lower costs of performing the action, and higher belief in self for executing a behavior will support an individual to adopt a new behavior or to convert the old behavior into a new one. In this sense, PMT shares most of the constructs of the HBM, namely, *perceived severity*, *perceived susceptibility*, *perceived benefits*, *perceived barriers*, and *perceived self efficacy* in the same sequence. Therefore, when three theories accounting for health behavior modification are compared and contrasted, both the PMT and the HBM take *perceived barriers*, in other words, costs and environmental determinants of performing a behavior into consideration;

whereas the HAPA does not. The PMT, in addition, offers a reason for avoidance of a health behavior by stating that if the threat appraisal is disproportionally higher than coping appraisal, a person may get used to avoiding; denying threat and refraining from disease information (Rippetoe & Rogers, 1987), thereby the theory explains the reason of barriers.

In their study with BSE, Rippetoe and Rogers concluded that high response efficacy and high self efficacy strengthened adopting an adaptive behavior like BSE (1987). Similarly, Hodgins and Orbell (1998) found that perceived self efficacy is the single independent predictor of BSE intention and if there is a previous BSE attempt concomitant to high self efficacy, BSE intention increases substantially. Moreover, these researchers put forward that not threat appraisal but coping appraisal could predict BSE intentions. Both the study of Rippetoe and Rogers (1987) and Hodgins and Orbell (1998) are supporting the study of Meyerowitz and Chaiken (1987) in appreciating the effectiveness of perceived self efficacy regarding adoption of the health protective behaviors.

1.5.3. Breast Cancer Fear

Many studies offering reasons to low frequency of mammography screening in community despite the efforts for the increase in the frequency of mammography such as increasing physician recommendation pointed out the importance of other suitable variables, which can be improved for interventions targeting increment in mammography screening (Consedine, Magai, Krivoshekova, Ryzewicz, & Neugut, 2004). Therefore, several studies are directed to find the relation between emotional variables and breast cancer screening due to the motivating effect of emotions (Consedine, Magai, & Bonanno, 2002) and their participation to self regulatory processes regarding health behaviors (Cameron & Leventhal, 1995). Moreover, although mammography screening is impeded by barriers such as time lag and lacking insurance, there are also fear-related barriers (Champion et al., 2004). These barriers are worry and anxiety about the screening procedure and of a possible positive result (Champion, 1994; Champion & Miller, 1996)

Studies positing fear as a determinant of breast screening behaviors conclude argumentative results (Champion et al., 2004). Some researchers support the efficiency of fear in breast cancer screening behaviors. For example, a study indicated that greater fear is associated with more frequent BSE and mammography and higher intention to continue performing these screening behaviors (McCauld, Reid, Rathge, & Martinson, 1996). Similarly, another study conducting a breast cancer intervention concluded that screening attendees achieved greater scores on trait fear and anxiety (Kreitler, Chaitchi, & Kreitler, 1990). In other words, lack of fear generates greater barrier than fear of cancer in getting the right diagnosis (Caplan, Helzlsouer, Shapiro, Wesley, & Edwards, 1996).

On the other hand, other researchers advocate that fear arousal functions as an obstacle rather than a facilitator for screening. Among them, Austin, Ahmad, McNally, and Steward (2002) proposed that fear of encountering a positive result is an obstructive factor for Hispanic women for mammography. Accordingly, another study proposed that greater fear of cancer has a link with the reduced likelihood and frequency of screening (Bloom, Hayes, Saunders, & Flatt, 1987).

Having a critical point of view for the various types of results regarding breast cancer fear and breast cancer screening, Champion et al. maintained that the cause of different results of these kinds of studies is the fact that each study had a different operational definition of breast cancer fear, and as a consequence their measurement varied, too (2004). From this perspective, Champion supported Witte's Extended Parallel Process Model (the EPPM), which incorporates factors linked with fear reactions of an individual when confronted with a fear message (1992). According to this model, fear, a negatively sensed emotion, is aroused if a fear containing message is confronted and perceived as personally relevant and it also incorporates physiological arousal (Easterling & Leventhal, 1989; Witte, 1992). Because of this involvement, fear can be expressed verbally (feeling scared), by physiological arousal (fast heart beats and sweating), and by facial expressions (Champion et al., 2004).

With regard to the EPPM, Witte conceptualized fear as a reaction when a threat containing message is perceived at a more than moderate level. Afterwards, one

assesses personal efficacy to handle the situation, which is performing the recommended action (1992). Witte differentiated danger control from fear control by saying that danger control is initiated if both perceived threat and perceived efficacy are high; thereby, the message is accepted. In other words, a change in attitude, intention, and behavior is possible. However, fear control takes place if perceived threat is high but the perceived efficacy is low; and this leads to message rejection, defense motivation, and engaging in maladaptive responses (1992).

Witte did also shed light on the different results from the breast cancer fear studies by maintaining that fear can lead to three kinds of responses. First, in fear control, fear elicits maladaptive responses and inhibits attitude and behavior change. Second, fear not directly but when mediated by perceived threat in high perceived efficacy condition, can lead to adaptive responses and hence open the way for attitude and behavior change. Last, if perceived threat is high and perceived efficacy is moderate, message acceptance will first increase and then decrease, leading to a curvilinear function (1992). From these viewpoints, it can be inferred that breast screening behaviors can be executed if breast cancer threat is perceived for personal interest and the available coping skills are evaluated as sufficient to win against breast cancer. If coping skills are evaluated as insufficient for breast cancer and when the perceived threat is high, maladaptive responses like denial or rejection can take place.

In conclusion, Witte demonstrated that threat specifies the degree of the response; on the other hand, efficacy determines the nature of the response. That is to say, the EPPM determines whether the response will be danger control or a fear control and it suggests that fear appeals offer potency for arousing behavioral change (1992).

When Roger's (1975) PMT is compared and contrasted with Witte's (1992) EPPM, it can be suggested that both can explain the adaptive responses prevailing when perceived threat and perceived efficacy are high in response to a threat appraisal. Additively, the EPPM does also offer predictors of maladaptive responses; high perceived threat, high fear and low perceived efficacy in response to a threat appraisal.

Taking Witte's (1992) EPPM as a starting point, Champion and her colleagues argue that the EPPM integrates the HBM's two main beliefs, namely *perceived severity* and *susceptibility* into *perceived threat* domain, and show their place in *threat appraisal* (2004). Together with perceived threat, the EPPM does also incorporate *self efficacy* as a cognitive process whose level may or may not cause an adaptive reaction when faced with a threat containing message. By taking these into consideration, Champion and colleagues suggested a combination of these two models in explaining the effect of breast cancer and concluded that breast cancer fear consists of the interaction of threat perception, low perceived response efficacy, low benefits of action, low self efficacy, and fatalism in her endeavor in developing a breast cancer fear scale (2004). Likewise, Straughan and Seow argued that fatalistic attitudes, perceived barriers, and perceived efficacy affect giving consent to a free mammogram at the National Breast Screening Project (2000); they underlined the importance of fear in the acceptance of mammograms.

It can be inferred from abovementioned theories that breast cancer fear may facilitate adaptive responses such as breast cancer screening if fear is perceived up to a critical point where personal efficacy regarding breast cancer screening is perceived high. Therefore, breast cancer fear is important in functioning as a facilitator for breast cancer screening behavior as long as personal capacity for efficacy for breast cancer screening behavior is also evaluated. In addition to breast cancer fear, social support has also critical importance in explaining breast cancer screening behaviors.

1.5.4. Social Support

Social support constitutes an integral part in human life. Relationship with other people can provide various helpful gains to people; and social support is defined to be the presence and the availability of these helpful behaviors (Uchino, Uno, & Holt-Unstad, 1999). In other words, social support is a functional outcome of the interaction of the social network; and it is an activity enabling supportive behaviors of the people belonging to this network (Seeman & Berkman, 1988).

The number of studies inquiring the role of social support in health behaviors increased substantially because of the fact that availability of support fosters the physical health and emotional wellbeing (Sherbourne & Steward, 1991). In order to assess how social support can affect health outcomes, studies aimed to find which part or parts of the social support can enact positively on health behaviors (Sherbourne & Steward, 1991).

Uchino and colleagues (1999) reviewed studies about the effect of social support on health promoting behaviors and acknowledged that social support can affect health behaviors via several ways. Kiecolt-Glaser and Glaser begin by explaining that poorer health behaviors are associated with greater levels of stress (1995), and social support can act on the amount of stress. Social support can decrease stress level and therefore, can promote positive health behaviors. They also maintained that social support can directly influence motivation advantageously and this may lead to a change in health behaviors. In addition to these, they claimed that care and love perceived from other people may also motivate people to care about themselves and increase their motivation to take care of themselves.

Similarly, Cohen and Wills (1985) offered a stress buffering hypothesis and maintained that social support, in addition to its direct effect on decreasing the amount of stress, can also act indirectly. By this, they argued that social support positively influences health and well-being by protecting people from the negative effects of stressors.

Social support measures, when categorized, can be classified into two groups, namely qualitative/ functional social support and quantitative/structural social network (Broadhead, Sthephen, Frank, & Berton, 1988). Functional social support is the extent to which relationships among people serve particular functions such as (1) emotional support offering empathy, love and understanding, (2) instrumental support/tangible support, (3) informational support offering feedback, counseling, and solution to the problems, (4) appraisal support involving information related to self evaluation, and (5) social companionship, which means allocating and spending time in leisure and recreational activities (House, 1981; Cohen & Hoberman, 1983). Structural social support, on the other hand, refers to the existence and quantity of

social relationships (e.g., marital status, number of friends in the social network) and the interconnectedness of a person with the social network (extent to which friends know each other) (Berkman, & Syme, 1979; Sherbourne & Steward, 1991).

In the development of a social support survey from The Medical Outcomes Study, Sherbourne and Steward (1991) put forward that the second type, structural social support is measured by the existence and contact of supportive people; however, these researchers and Kahn and Antonucci (1980) maintained that forming a contact does not always mean receiving social support. That is to say, factors related with having a contact can be irrelevant with social support. For example, a person may not have so many contacts because of a busy work conditions; however may feel receiving a satisfactory level of social support from a limited number of friends. Thus, as a reaction to the unstandardized and various social support surveys, Sherbourne and Steward (1991) developed a multidimensional social support survey, which has adequate psychometric properties. They generated the test items after a two-year research conducted with chronically ill patients.

Many studies were conducted in order to examine the effect of social support on adherence to cancer screening behaviors. Kang, Bloom and Romano (1994) looked at the relationships of social support as measured by social network index, instrumental and emotional support, with three female cancer screening tests, namely mammography, cervical smear, and clinical breast examination in 670 African American women living in California. The results suggested that women with more social ties are more likely to have mammograms but not cervical smear and clinical breast examination. Moreover, they argued that emotional and informational support did not have any relation with three female cancer tests; and they concluded that it may be due to either small number of items measuring functional social support or due to the fact that structural features of social network index are more important than functional type of social support in forming association with female screening tests (Kang, Bloom, & Romano, 1994). As suggested by Sherbourne and Steward (1991), this result might also be due to different and unstandardized measurement of emotional and informational support.

Supportively, with a multi-ethnic Asian population living in Singapore, Seow, Huang and Straughan (2000) examined the factors associated with cervical cancer screening, particularly Papanicolaou smear test. According to their results, women who have more close friends and who can discuss the health related issues with them reported that they had to have Pap smear test. From this point of view, they showed the importance of the number of social connections and the available informational social support in the use of cervical cancer screening.

Additionally, Suarez, Llyord, Weiss, Rainbolt, and Pulley (1994) conducted a research about cancer screening in older Mexican-American women and they concluded that social network is important in the determination of both mammography and cervical cancer screening in low income older Mexican American women. In a relatively recent study, Suarez et al. (2000) operationally defined social network as consisting of number of close relatives and friends, frequency of contact, church membership and attendance; and examined its effect on cancer screening behaviors of four U.S. Hispanic groups. According to this index, participants were classified as low, medium or high social integration groups. The findings suggested that high social integration can influence cancer screening participation of all Hispanic groups.

Specific to breast cancer screening behaviors such as breast self examination and mammography, Katapodi, Facione, Miaskowski, Dodd, and Waters (2002) measured social support with some items developed by them and examined its relation with mammography and BSE in a multicultural community. When women were asked whether they had any mammograms, they were classified into three groups; never, once or twice, every one or two years. Researchers compared the mean scores of social support of the three groups; but no significant group differences were found. However for BSE, the social support of participants who never applied BSE was significantly lower than ones who rarely performed BSE and who regularly followed the BSE guidelines. Moreover, these researchers argued that high social support was also associated with high educational attainment and high income (Katapodi, Facione, Miaskowski, Dodd, & Waters, 2002).

Concordantly, the study of Messina et al. (2004) studied the effect of functional social support with the MOS social support survey developed by Sherbourne and Steward (1991) on CBE, BSE, and mammography. The study indicated that low level of emotional-informational social support is significantly and independently related with less frequent use of all three female cancer screening behaviors. Same association was found for low levels of positive interactions but not for tangible and affectionate support. Another study included five dimensions of social support (material, emotional, affective, information, and positive social interaction) to see their effects on only BSE. Their results confirmed that women who had higher social support in all five dimensions performed BSE on a high frequency. They suggested that when women are classified into three according to their scores on all five social support dimensions, the ones in the top part reported twice as high, the medium part reported 50% more BSE performances than the ones in the bottom part (Andrade, Chor, Faerstein, Griep, Lopes, & Fonseca, 2005).

1.5.5. Personality Characteristics

Personality characteristics have also been suggested as a possible risk factor for the development of breast cancer; and therefore, they also should be taken into consideration in relevant research. Researchers believed that Type C personality, which is the combination of self sacrificing behavior and emotional non-expressiveness, puts women under the risk of breast cancer (Eysenck, 1994; Ogden, 2004; Temoshok, 1987). Others, however, put forward that only anti-emotionality is associated with the development of breast cancer (Bleiker, van der Ploeg, Hendriks, & Adér, 1996).

The maladaptive nature of pessimistic personality is reported to affect breast cancer screening negatively (Brain et al., 2008). A study conducted with highly educated younger women (lower than the age of 50) concluded that higher extraversion and conscientiousness and lower depression predict adherence to mammography screening (Siegler, Feaganes, & Rimer, 1995). This is supporting Booth-Kewly and Vickers' conclusion that conscientiousness and agreeableness can predict health promoting behaviors in young women (1994). In addition to these

personality characteristics, Kreitler, Chaitchik, and Kreitler maintained that individuals low on neuroticism do regularly attend to mammography screening (1990).

1.6. Aims of the Study

In the light of the literature mentioned above, the aim of this study is to examine the predictors of breast cancer screening behaviors with a multi-factorial assessment. More specifically, the relationship of personal, social, psychological, and environmental factors related to BSE and mammography will be examined. Hence, the associations between the factors mentioned in the HBM (i.e., perceived susceptibility, perceived seriousness, benefits of BSE, barriers of BSE, self efficacy, and health motivation, benefits and barriers of mammography) and other variables (i.e., dispositional optimism, breast cancer fear, social support and big 5 personality characteristics, mammography self efficacy) on breast cancer screening behaviors, namely BSE and mammography will be studied. The possible relationship among mentioned factors and women's adherence to these health promoting behaviors can offer some advantages for early detection and intervention programs for breast cancer.

In the study, the differences between breast self examiners and non-examiners; and mammography performers and non-peformers will be examined in terms of the HBM, dispositional optimism, breast cancer fear, social support and big 5 personality characteristics, mammography self efficacy. The hypotheses are as follow. For BSE, (1.a.) high perceived susceptibility will be related with BSE performance; (1.b.) high perceived seriousness will be related with BSE performance; (1.c.) high perceived benefits of BSE with will be related with BSE performance; (1.d.) low perceived barriers of BSE will be related with BSE performance; (1.e.) high BSE confidence will be related with BSE performance; (1.f.) high health motivation will be related with BSE performance; (1.g.) high dispositional optimism will be related with BSE performance; (1.h.) high breast cancer fear will be related with BSE performance; (1.i.) high functional social support will be related with BSE performance; (1.j.) high extraversion will be

related with BSE performance; (1.k) high conscientiousness will be related with BSE performance and (1.l) low neuroticism will be related with BSE performance.

For the mammography performance; (2.a.) high perceived susceptibility will be related with mammography performance; (2.b.) high perceived seriousness will be related with mammography performance; (2.c.) high perceived benefits of mammography will be related with mammography performance; (2.d.) low perceived barriers of mammography will be related with mammography performance; (2.e.) high self efficacy for mammography will be related with mammography performance; (2.f.) high health motivation will be related with mammography performance; (2.g.) high dispositional optimism will be related with mammography performance; (2.h.) high breast cancer fear will be related with mammography performance; (2.i.) high functional social support will be related with mammography performance; (2.j.) high extraversion will be related with mammography performance; (2.k.) high conscientiousness will be related with mammography performance; (2.l.) low neuroticism will be related with mammography performance.

The predictive abilities of the independent variables will be assessed by running hierarchical logistic regression. The variables were preferred to be entered at fidderent variables in terms of their proximity to the self. In other words, more central (temperamental) variables such as personality characteristics were entered to the regression equation at previous steps; however, more peripheral variables such as social support were entered to the regression equation at later steps. Therefore, the hierarchical logistic regression will be run by entering personality characteristics and dispositional optimism at first, self efficacy for mammography and HBM factors at second, breast cancer fear at third and social support for the last step. Therefore, it is hypothesized that (3.a.) the largest share in explaining BSE performance will be accounted by personality characteristics and optimism, self efficacy and the HBM, breast cancer fear, and social support in a descending manner; (3.b.) the largest share in explaining mammography performance will be accounted by personality characteristics and optimism, self efficacy and the HBM, breast cancer fear, and social support in a descending manner

In order to test abovementioned hypotheses, measurement of all variables should be reliable and valid in Turkish. The measurement of multidimensional social support was planned to be done by using the Medical Outcomes (MOS) Social Support Survey which was originally developed by Sherbourne and Steward (1991). There were many reasons lying behind choosing the MOS Social support survey. First, since the test was developed out of a two-year study with patients with chronic conditions including cancer, it is brief, multidimensional, and easy to administer. Second, the test assesses both structural and functional social support. The first question of the survey assesses structural support (number of close friends and relatives) and the remaining 19 assess types of functional support: emotional-informational, tangible, affectionate support and positive social interaction. However, the MOS Social Support Survey was only available in English and it needed to be translated to Turkish and its psychometric properties should be tested. In order to achieve this, Study 1 was conducted.

CHAPTER II

STUDY 1

Since the current definition of health embraces three dimensions, one of which is social factors (Engel, 1977), it can be concluded that health promoting behaviors can be affected by social elements. In the literature, research on social elements like social support, social network (Kahn & Antonucci, 1980), social embeddedness (Barrera, 1986), and social climate (Moos & Lemke, 1992) were studied and especially literature on social support were accrued thoroughly in explaining its effect on health promoting behaviors. Accordingly, researchers identified social support as an exchanged type of assistance and supportive interactions among people belonging to the same community (Uchino, Uno, & Holt-Unstad, 1999; Israel, 1982; Seeman & Berkman, 1988).

In the literature, some researchers claimed that social support can act on health promoting behaviors by many ways. For example, Uchino and colleagues (1999) maintained that social support can decrease the amount of stress resulted by poor health outcomes; and thereby, it can reinforce positive health behaviors. He also pointed that social support can act directly on health behaviors by promoting motivation for a particular health behavior. Similar to this, stress buffering hypothesis proposed by Cohen and Wills (1985) suggested that social support protects people from negative effects of stressors and encourage people become healthier. Likewise, Sherbourne and Stewart (1991) did also support this view by suggesting that social support is an important determinant of daily functioning and emotional wellbeing of patients with chronic diseases.

In a similar fashion, Seeman (2000) proposed that social support can show its effect both in health promoting and health damaging ways in older adults. Thus,

the author concluded that the quality of the social environment is effective on health promoting behaviors in older adults. With this point of view, types of social support can be examined in detail in order to comprehend which part or parts of it can help foster health behaviors.

Because of the fact that social support is thought to be affecting health and emotional wellbeing favorably, there is an increase in the studies searching for the link between social support and health related issues, for example, mortality (House, Landis, & Umberson, 1988), maintaining healthy diet, adherence to medical routines and exercise (Jackson, 2006), and cancer screening (Kang, Bloom, & Romano, 1994; Seow, Huang, & Straughan, 2000; Straughan & Seow, 2000; Suarez, Llyord, Weiss, Rainbolt & Pulley, 1994; Suarez et al., 2000; Katapodi, Facione, Miaskowski, Dodd & Waters, 2002; Messina et al., 2004; Andrade, Chor, Faerstein, Griep, Lopes, & Fonseca, 2005). Knowing that social support has an important effect on health behaviors, researchers actually divided it to its parts to understand which parts of it are contributing to the health behaviors. They employed two means to measure social support in this manner.

The first one is to examine the parts of social support since the definition of social support refers mainly to the availability of functional support, which is the extent to which relationships among people serve particular functions (Sherbourne & Stewart, 1991; Uchino, Uno, & Holt-Unstad, 1999; Seeman & Berkman, 1988). House (1981) described five functions of social support, namely (1) emotional support, (2) instrumental support/tangible support, (3) informational support (4) appraisal support, and (5) social companionship. Similar to this, Sherbourne and Stewart (1991) classified four dimensions of functional social support, namely (1) emotional/informational support, (2) tangible support, (3) affectionate support, and (4) positive interactions in a study conducted with chronically disturbed patients. Among many other health behaviors, many studies indicated the relationship between cancer screening behaviors and high functional support (Seow, Huang, & Straughan, 2000, Katapodi, Facione, Miaskowski, Dodd, & Waters, 2002; Messina et al., 2004; Andrade, Chor, Faerstein, Griep, Lopes, & Fonseca, 2005).

The second way to measure social support was measuring the structure of the social support, in other words, the social network indicating the quantity of social interactions. To measure this, social network index was coined by Berkman and Syme (1979). These authors included four different types of structural social interactions and suggested that marital status, number of relatives and friends, church participation, and participations in other organizations can be used to measure social network. This type of measurement was also found to be related with many health behaviors and cancer screening behaviors, in particular (Suarez, Llyord, Weiss, Rainbolt, & Pulley, 1994; Kang, Bloom, & Romano, 1994; Seow, Huang, & Straughan, 2000; Suarez et al., 2000). However, other researchers claimed that assessing social network does not mean the assessment of social support since the number of social ties does not necessitate social interactions and support (Kahn & Antonucci, 1980; Seeman & Berkman, 1988; Sherbourne & Stewart, 1991; Fleishman, Sherbourne, & Crystal, 2000). Langford, Bowsher, Maloney, and Lillis (1997) suggested that the structure of a social interaction is named as social network, whereas the function of this interaction refers to social support. These researchers underlined the distinction between two concepts by proposing that social network, climate, and embeddedness are the antecedents of social support.

Sherbourne and Stewart's social support survey is a multidimensional social support survey and it includes both structural and functional support. It was originally developed in U.S.A and the language of the test is English (1991). Because the main objective of this study is to search for the psychosocial correlates of breast self examination and mammography in a Turkish sample, the survey needed to be adapted to Turkish culture with adequate validity and reliability values. For this interest, the aim of the Study 1 is to conduct the psychometric testing of the Turkish version of the MOS Social Support Survey.

2.1. Method

2.1.1. Participants

The study included pre-test and post-test conditions. Totally 241 participants (189 women and 52 men) were recruited for the pre-test condition (mean age = 25.84, *SD* = 5.437, range = 18—60). They were selected with convenience sampling method. For the post-test condition, out of 241, 99 participants (41.08 %, 71 women and 28 men) were recruited again (mean age = 24.76, *SD* = 4.52, range = 19—42). For both conditions 241 participants contributed to the overall study. The demographic characteristics of the Study 1 participants can be seen in Table 1.

Table 1. *Demographic Characteristics of the Sample of Study 1.*

	Pre-test Group		Post-test Group	
	N	%	N	%
Gender				
Male	52	21.6	28	28.3
Female	189	78.4	71	71.7
Marital Status				
Single (no relationship)	101	41.9	47	47.5
Single (engaged)	102	42.3	37	37.4
Married	36	14.9	15	15.2
Divorced	1	0.4		
Widow	1	0.4		
Education Level				
High school	68	28.2	46	46.5
University	110	45.6	33	33.3
Masters	56	23.2	18	18.2
Doctorate	7	2.9	2	2

2.1.2. Measures

The questionnaire set was composed of a demographic information form, the MOS Social Support Survey, U.C.L.A. Loneliness scale, Symptom Checklist 90-

Revised, Multidimensional Scale of Perceived Social Support, and Inventory of Socially Supportive Behaviors.

2.1.2.1. Demographic Information Form.

The questions of the demographic information form were composed of an e-mail address to reach the participants again for the post-test condition, gender, age, marital status, and education level.

2.1.2.2. The MOS Social Support Survey.

The 20 item The MOS Social Support Survey developed by Sherbourne and Stewart (1991) was used. The items of the test are answered on a 5 point Likert scale and the answers range from *none of the time* (1) and *all of the time* (5). The test includes four subscales, namely emotional-informational support (8 items), positive interaction (3 items), affectionate support (4 items), and tangible support (3 items). The item 14 (someone to do things with to help you get your mind off the things) is a positive interaction subscale in the original scale, it was deleted from further analysis since it did not discriminate its subscale well. The internal consistency reliability estimated by Chronbach's alpha of the total scale was .97 and the test-retest reliability with a 1 year period was estimated with Pearson coefficient was found as .78. For emotional/informational support, positive interaction, affectionate support, and tangible support, internal consistency reliabilities estimated by Chronbach's alpha were .96, .94, .91, and .92; and the test-retest reliability conducted with a 1 year interval was estimated with Pearson coefficient were .72, .72, .76, and .74, respectively (Sherbourne & Stewart, 1991). The validity of the scale was tested by conducting Pearson Moment correlations between health status validity measures like physical health, mental health, both physical and mental health, and social support. The MOS Social Support Survey and its four subscales had higher correlations with social support and lower correlations with physical health measures. Moreover, a higher order factor analysis of physical and mental health and social support was conducted. The subscales of the MOS Social Support Survey were found to be loading under social support factors than any

others. The first question of the MOS Social Support Survey (number of close friends and relatives) did not correlate with either physical/mental health or social support (Sherbourne & Stewart, 1991). With this information, The MOS Social Support Survey was said to be satisfactorily reliable and valid. The test was translated to Turkish in the scope of Study 1. The details are presented in the results section.

2.1.2.3. U.C.L.A Loneliness Scale.

University of California Los Angeles (UCLA) Loneliness Scale was employed for the measurement of the loneliness in participants. The scale was developed by Russell, Peplau and Ferguson (1978) and revised by Russell, Peplau and Cutrona (1980). Turkish adaptation of the test was conducted by Demir (1989). This scale has 20 items and half of them were reversed. It was scored on a 4-point Likert type scale and the answers range between I often feel this way (4) and I never felt this way (1). The higher scores correspond to higher levels of loneliness. The reliability of the Turkish version was calculated by Cronbach's alpha and was found as .96 (Demir, 1989). Test-retest reliability was conducted with a five weeks interval and the Pearson coefficient was found as .94 (Demir, 1989). The correlations between UCLA Loneliness scale and Beck Depression Inventory and Social Introversion subscale of Multidimensional Depression Inventory were found positive and significant (.77 and .82, respectively). Therefore, the scale was found as reliable and valid in a Turkish sample. In the current study, the internal consistency reliability of the scale was found as .93.

2.1.2.4. Symptom Check List 90 Revised (SCL-90-R).

Symptom Checklist-Revised (SCL- 90-R) is a self administered inventory and it consists of 90 items, all answered on a 5 point Likert scale and the answers range from *never* (0) to *always* (4). The inventory assesses psychopathological symptoms. Originally it was developed by Derogatis (1977) and the inventory was adapted to Turkish by Dağ (1991). Nine subscales exist in SCL-90-R and they are somatization, obsession and compulsion, interpersonal sensitivity, depression,

anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The total score and the global severity index (GSI) were considered as a measure of overall psychopathology. The higher GSI means higher level of psychopathological symptoms a person has. The internal consistency reliability of the test was found as .97. Test-retest reliability of GSI was .90 and of 9 subscales was ranged between .65 and .87. SCL-90-R and its all subscales were positively and significantly correlated with Beck Depression Inventory (Beck, Steer, & Brown, 1996) and Minnesota Multiphasic Personality Inventory (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) subscales except lie, masculinity-femininity and hypomania. The inventory was not correlated significantly with State-Trait Anxiety Inventory (Speilberger, 1989). These reveal that SCL-90-R has satisfactory psychometric qualities in Turkish Culture. In the present study, the internal consistency of the scale was estimated as .97.

2.1.2.5. Multidimensional Scale of Perceived Social Support.

Multidimensional Scale of Perceived Social Support (MSPSS) consisting of 12 items questioning the source and the level of social support provided by a significant other, family, and friends (Zimet, Dahlem, Zimet, & Farley, 1988) was employed in order to assess participants' perceived social support levels. The scale is a 7-point Likert-type questionnaire, and the answers range from *very strongly disagree* (1) and *very strongly agree* (7). The higher scores mean higher levels of perceived social support. The reliability of the Turkish version was calculated by Cronbach's alpha and was found to be between .80 and .95 (Eker, Arkar, & Yaldız, 2001). The correlation analyses between MSPSS, Beck Depression Inventory (Hisli, 1989), and State Trait Anxiety Inventory (Önder & Le Compte, 1985) revealed that MSPSS is significantly and negatively correlated with BDI and State Trait Anxiety Scale, suggesting that MSPSS is a valid scale (Eker & Arkar, 1995). In the present study, the internal consistency of the scale was found as .90.

2.1.2.6. Inventory of Socially Supportive Behaviors

Inventory of Socially Supportive Behaviors (ISSB) is composed of 40 items and it measures the amount of the received social support. The scale was originally developed by Barrera, Sandler, and Ramsay (1981) and the Turkish adaptation of it was studied by Erol and Bozo (in press). The scale has three subscales, namely guidance, emotional support, and tangible assistance. According to reliability analysis Chronbach's alpha of the total inventory was found as .95 and the test-retest reliability was .69. For subscales, guidance, emotional support and tangible assistance Chronbach's alpha values for test-retest reliability were .95, .95, and .81, respectively. ISSB and its all subscales were positively and significantly correlated with MSPSS. In sum, ISSB was found as a valid and reliable measurement tool in Turkish sample. In the current study, the internal consistency of the scale was estimated as .96.

2.1.3. Procedure

The MOS Social Support Survey was adapted to Turkish by translation and back-translation process (Brislin, Lonner, & Thorndike, 1973). Three independent translators translated the original scale to Turkish. A bilingual psychologist who is competent both in English and Turkish selected best translated items which represented the original correspondents in the original scale. After the comparison of the items, the scale turned out to its final version.

First, necessary approvals from the Middle East Technical University Research Center for Applied Ethics were obtained before the data collection. Second, the questionnaire booklet was prepared and uploaded to an online data collecting website (www.surveey.com) and the link for the study was delivered to the potential participants. The participants gave their consent by reading the informed consent page at the beginning and clicking the consent button at the bottom of the webpage. Without this, the questionnaire could not be taken. The pre-test condition was completed with the online data gathering process. After a month, participants were reached again by their e-mail addresses and requested to take the survey again for the post-test condition. Ninety-nine out of 241 participants

voluntarily took the test again and by this the post-test condition was also completed by an online data gathering process. The participants were recruited by convenience sampling. Application of the pre-test condition took approximately 30 minutes; whereas the post condition lasted for 10 minutes.

2.2. Results

For the first step, 19 items (all answered on 5-point Likert type scale) measuring functional support of the MOS Social Support Survey were analyzed by varimax rotation. Factor analysis revealed 3 factors with eigenvalues higher than 1 that were generated by using Kaiser Criteria. They explained 73.84 % of the total variance.

However, since the first factor included more than half of the items in the scale, which is not compatible with the original scale, the analysis was renewed and a 4-factor solution of the items was decided. Thereby, the item distribution of the subscales of the Turkish version of the survey became the same with the original one. The 4-factor solution explained more variance from the 3-factor solution; and it was 77.75 % of the total variance. For the item values, factor loadings, eigenvalues, and the explained variance of the MOS Social Support Survey, Table 2 can be referred.

Table 2. *Factor Loadings for The MOS Social Support Scale.*

Item	Factor 1	Factor 2	Factor 3	Factor 4
4. Someone to give you good advice about a crisis	**.86**	.15	.08	.27
17. Someone to turn to for suggestions about how to deal with a personal problem	**.77**	.29	.32	.24
13. Someone whose advice you really want	**.75**	.24	.32	.24
3. Someone you can count on to listen to you when you need to talk	**.65**	.33	.35	.24
8. Someone to give you information to help you understand a situation	**.62**	.26	.60	.10
19. Someone who understands your problems	**.57**	.37	.52	.11
9. Someone to confide in or talk to about yourself or your problems	**.59**	.29	.60	.12
16. Someone to share your most private worries and fears with	**.52**	.25	.60	.22
14. Someone to do things with to help you get your mind off the things	**.88**	.06	.20	.26
18. Someone to do . something enjoyable with	.21	**.86**	.25	.17
11. Someone to get together for relaxation	.26	**.78**	.35	.19
7. Someone to have a good time with	.26	**.75**	.41	.08
6. Someone who shows you love and affection	.22	.25	**.66**	.50
20. Someone to love and make you feel wanted	.83	.41	**.65**	.30
10. Someone who hugs you	.29	.27	**.64**	.39
5. Someone to take you to the doctor if you needed it	.27	.03	.15	**.81**
12. Someone to prepare your meals if you were unable to do it yourself	.11	.20	.18	**.80**
2. Someone to help you if you were confined to bed	.18	.07	.08	**.77**
15. Someone to help with daily chores if you were sick	.14	.27	.25	**.74**
Eigenvalue	10.74	1.88	1.41	.74
Explained variance (%)	56.20	9.88	7.43	3.92
Cronbach's α	.95	.94	.88	.86

Note. Factor 1: Emotional/informational Support, Factor 2: Positive Interaction, Factor 3: Affectionate Support, Factor 4: Tangible Support

The first factor was called as *emotional/informational support*. This factor had a cutoff point of .52. It had 8 items and explained 56.52 % of the total variance. The 4-item second factor was named as *positive interaction* and it explained 9.88 % of the total variance. The cutoff point of the second subscale was .75. The third factor included three items and it was named as *affectionate support*. The third factor explained 7.43 % of the total variance, and its cutoff point was .64. The last factor was called as *tangible support*. It consisted of 4 items and explained 3.92 % of the total variance. Its cutoff point was .74. According to the results of this factor analysis, it can be suggested that the MOS Social Support Survey has construct validity. The internal consistency reliability of the MOS Social Support Survey estimated by Chronbach's alpha was found to be .95. Table 3 presents the summary of reliability analysis and Table 4 shows the internal consistency reliability of the emotional/informational support, positive interactions, affectionate support, and tangible support subscales.

The test-retest reliability of the scale was examined by the re-application of the scale to 99 participants (% 41.08) of the same participants of the pre-test group after a one-month interval ($r = 0.727$, $p < 0.01$). The test-retest reliability values for subscales were emotional/informational support ($r = .73$, $p < 0.001$), for positive interaction ($r = .65$, $p < 0.001$), for affectionate support ($r = .67$, $p < 0.001$), and for tangible support ($r = .58$, $p < 0.001$).

For the discriminant validity, the MOS Social Support Survey was correlated negatively with U.C.L.A Loneliness Scale ($r = -0.65$, $p < 0.01$) and SCL-90-Revised ($r = -0.276$, $p < 0.01$). This means that high functional support is correlated with the less loneliness and lower levels of psychopathology.

Table 3. *Reliability Analysis for The MOS Social Support Survey.*

Item Number	Mean	SD	α if item deleted	Item-Total *r*
2	4.28	.84	.956	.48
3	4.34	.81	.952	.77
4	4.26	.87	.953	.68
5	4.29	.96	.955	.57
6	4.34	.84	.952	.78
7	4.31	.83	.953	.72
8	4.12	.94	.952	.79
9	4.16	.93	.951	.79
10	4.11	1.09	.952	.76
11	4.18	.92	.952	.76
12	4.02	1.04	.955	.57
13	3.90	1.0	.952	.75
14	4.04	.93	.953	.65
15	3.93	1.04	.954	.63
16	3.67	1.23	.952	.78
17	4.02	.96	.951	.81
18	4.17	.88	.953	.70
19	4.01	.93	.952	.78
20	4.17	.95	.952	.79
All scale	78.33	13.43		

Note: Internal consistency reliability of the total scale calculated by Cronbach alpha is .95.

Table 4. *Reliability Analysis of the Subscales of the MOS Social Support Scale.*

Item Number	Mean	SD	α if item deleted	Item-Total *r*
*Emotional/Informational Support**				
4	4.26	.87	.94	.74
17	4.02	.96	.93	.86
13	3.90	.99	.94	.79
3	4.34	.81	.94	.78
8	4.12	.94	.93	.85
19	4.01	.93	.95	.80
9	4.16	.94	.93	.84
16	3.67	1.22	.94	.80
Total subscale	32.49	6.58		
*Positive Interaction***				
14	4.04	.93	.92	.84
18	4.17	.88	.90	.88
11	4.18	.92	.91	.85
7	4.31	.83	.92	.82
Total subscale	10.55	3.25		
*Affectionate Support****				
6	4.34	.84	.81	.79
20	4.17	.95	.82	.76
10	4.11	1.1	.85	.74
Total subscale	12.62	6.68		
*Tangible Support*****				
5	4.29	.96	.81	.71
12	4.02	1.0	.80	.73
2	4.28	.84	.84	.63
15	3.93	1.0	.80	.74
Total subscale	16.52	10.56		

Note. * Internal consistency reliability as measured by Cronbach alpha is .95.
** Internal consistency reliability as measured by Cronbach alpha is .93.
*** Internal consistency reliability as measured by Cronbach alpha is .88.
**** Internal consistency reliability as measured by Cronbach alpha is .86.

For the convergent validity, the MOS Social Support Survey was correlated with MSPSS ($r = 0.657$, $p < 0.01$) and ISSB ($r = 0.404$, $p < 0.01$). In other words, higher social support as measured by the MOS Social support Survey is related with

high perceived social support from a significant other, family, and friends and high received socially supportive behaviors. Accordingly, it can be suggested that the MOS Social Support Survey has convergent and divergent validities (Table 5). Additionally, in the original scale, the first question of the MOS Social Support Survey measuring the structural support (number of close relatives and friends) was added to the divergent validity analysis. The results yielded that this single item was also significantly and positively correlated with 19-item The MOS Social Support Scale (r = -0.422, $p < 0.01$). Moreover, the number of close relatives and friends was significantly and negatively correlated with U.C.L.A Loneliness Scale (r = -0.48, $p < 0.01$) and SCL-90-Revised (r = -0.15, $p < 0.05$). Hence, large amount of close relatives and friends was correlated with less loneliness and the psychopathology. Similar to the original scale, it was also significantly and positively correlated with MSPSS (r = 0.36, $p < 0.01$) and ISSB (r = 0.16, $p < 0.05$). That is to say, higher structural support is positively correlated with perceived functional support, perceived social support from a significant other, family, and friends, and high received socially supportive behaviors. Table 5 presents correlation coefficients of this item with other measures.

Table 5. *Correlation Coefficients of the Scales Used in Assessing Divergent and Convergent Validities.*

	StSS	MOS	UCLA	MSPSS	SCL	ISSB
StSS						
MOS	.42**	(.95)				
UCLA	-.42**	-.65**	(.93)			
MSPSS	.36**	.66**	-.71**	(.91)		
SCL	-.15*	-.28**	.48**	-.36**	(.97)	
ISSB	.16*	.40**	-.28**	.34**	.03	(.96)

Note 1: * $p < .05$, ** $p < .01$

Note 2: StSS: Structural Social Support item, MOS: The MOS Social Support Scale, UCLA: U.C.L.A Loneliness Scale, MSPSS: Multidimensional Scale of Perceived Social Support, SCL: Symptom Checklist 90 Revised, ISSB: Inventory of Socially Supportive Behaviors.

Note 3: Values in parentheses indicate the internal consistency reliability of the related scales.

2.3. Discussion

This study was conducted in order to adapt the MOS Social Support Survey developed in English by Sherbourne and Stewart (1991) to Turkish with satisfactory reliability and validity properties.

The study had two phases: pretest and posttest conditions. The pretest condition was carried out with 241 participants (189 women and 52 men) aged between 18 and 60 (mean age = 25.84, *SD* = 5.437, range = 18—60). The posttest condition was employed with 99 participants (mean age = 24.76, *SD* = 4.52, range = 19—42) who had 74 women and 29 men.

All participants' informed consents were asked. The adaptation of the scale into Turkish was carried out with translation-back translation method (Brislin, Lonner, Thorndike, 1973). Results of the analyses indicated that the Turkish version of the MOS Social Support survey had satisfactory psychometric properties.

The results of this study were largely consistent with the reliability and validity study of the original study (Sherbourne & Stewart, 1991). The authors excluded the positive interaction item, the item 14 (someone to do things with to help you get your mind off things), since it did not discriminate its subscale well. They also excluded the first item, measuring structural support since it was a continuous item. Then they run a multitrait correlation matrix with 18 item The MOS Social Support Survey and (1) tangible support, (2) affectionate support, (3) positive social interaction, (4) emotional/informational support, (5) number of close friends/relatives, (6) social activity limitations, (7) mental health index, (8) loneliness or emotional ties, (9) family satisfaction, (10) happiness with family life, (11) current health perceptions. They found that all items had higher correlations (> .72) with their hypothesized scales. However, for the Turkish version of the scale, 14th item was not excluded since in the factor analysis it loaded under the positive interaction subscale well (Table 4).

The other difference between the original scale and its Turkish version is related to the 1st item of the scale. Sherbourne and Stewart (1991) found that single item- structural support measuring number of close friends and relatives showed low correlations with functional support items so they argued it was different from functional support, which is confirming previous findings (Kahn & Antonucci, 1980; Seeman, & Berkman, 1988; Sherbourne, & Stewart, 1991; Fleishman, Sherbourne & Crystal, 2000). However, as it could be seen from Table 5, in our analysis, this item correlated significantly with the MOS Social Support survey

itself and other scales used to measure divergent and convergent validity. Its correlation coefficients ranged between .42 and .15. Thus, this result can be supportive of the Langford, Bowsher, Maloney and Lillis' argument (1997). They proposed that social network is different than social support but social network is an antecedent of social support. Therefore, single structural support item can be positively correlated with 19 item functional support scale.

The aim of the Study 1 was to translate The MOS Social Support Survey (Sherbourne & Stewart, 1991) to Turkish culture with satisfactory psychometric qualities. Analyses revealed that the Turkish version of the scale seems to be reliable and valid, and it can be used in Study 2.

CHAPTER III

STUDY 2

3.1. Method

3.1.1. Participants

Two hundred and thirty women (mean age = 33.9, *SD* = 12.23, range = 18—75) were recruited in the scope of this study. They were selected with convenience sampling method. All participants were asked whether they had breast cancer. The ones answered negatively were included in the study so that all participants were breast cancer free individuals and they did not have any type of cancer history. Participants were different cities of Turkey (İzmir, Ankara, Antalya, İstanbul) and they were either housewives or working women.

Single participants made up 53.9 % of the sample (*n* = 124) whereas 37 % of the sample consisted of married (*n* = 85), 5.7 % of the sample made up of divorced (*n* = 13), and 3.5 % of the sample consisted of widow participants (*n* = 8). For comparison, single, divorced and widow participants were merged and they consisted of 63 % of the sample (*n* = 145), and the remaining 37 % of the sample was comprised of married participants (*n* = 85). For comparative reasons, single, divorced and widow participants were merged, whereas married participants were not in order to have two equal groups. Marital status was related with social support and status may determine the level of social support one has. With this rationale, merging of single, widow and divorced participants made possible for comparing them with their married counterparts.

For education level, the sample included 38 participants, who had at most secondary school level education (16.5 %), 41 high school graduates (17.8 %), 92 university graduates (40 %) and 59 participants who had postgraduate education

(25.7 %). When the occupation of the participants was asked, it was seen that 100 of the participants were housewife or not working (43.5 %) whereas 130 of the participants were working as a worker or an officer (56.5 %).

Majority of the participants (81.7 %) reported they inhabit in a metropolis (*n* = 188), 11.7 % of them reported they live in a city (*n* = 27)., while 5.7 % and .9% of them reported that they were residents of town (*n* = 13) and village (*n* = 2)., respectively. Socioeconomic status of the participants were categorized into three, high (11.3 %, *n* = 26), middle (77 %, *n* = 177), and low (11.7 %, *n* = 27). Vast majority of the participants reported that they had health insurance (93.5 %, *n* = 215), the remaining 6.5 % reported they did not (*n* = 15).

Mean menarche age of the participants was 13.07 (*SD* = 1.35, range = 9—17). Participants reporting they had menopause made up 18.7 % of the total participants (*n* = 43). Of the participants confirming they had menopause, the mean age was 46.98 (*SD* = 5.04, range = 34—59).

Two hundred twenty seven participants answered whether they did use birth control pills or not. Of them, 61 % reported they did not use birth control pills (*n* = 137); the remaining 39 % reported they did (*n* = 86). Of 142 participants who indicated the time of birth control pill usage time, the mean was found as 14.75 months (*SD* = 31.61, range = 0—180 months). Vast majority of the participants indicated they had knowledge about breast cancer (83.9 %, *n* = 193) whereas 16.1 % of them reported they did not (*n* = 37).

Other than knowledge, participants were asked whether they practiced breast cancer screening. Nearly half of the participants answered positively (43.9 %, *n* = 101). Some participants indicated they had multiple ways of breast cancer screening. When all participants were asked which ways of the breast cancer screening they had, thirty nine percent of them reported they had practiced BSE (*n* = 90); 9.1 % of them reported they practiced CBE (*n* = 21), 14.8 % of them reported they had mammography (*n* = 34) and 4.8 % of them reported they had other ways of screening such as breast ultrasound (*n* = 11).

In addition, some other health behavior questions such as cigarette and alcohol usage, sport and maintenance balanced diet were asked. 21.7 % of the participants

confirmed they used cigarette (n = 62), 37.4 % of them reported they used alcohol (n = 86). For sport, nearly half of the participants stated they did sports (46.1, n = 106). Seventy one percent of the participants confirmed they maintained balanced diet (n = 163). The demographic characteristics of the Study 1 participants can be seen in Table 6.

Table 6. *Demographic Characteristics of the Sample of Study 1.*

		N	%			N	%
Age (m = 33.9, sd = 12.33)							
Marital status	Single	124	53.9	Birth control pill usage time (m = 14.75, sd = 31.61)			
	Married	85	37				
	Divorced	13	5.7				
	Widow	8	3.5	Breast cancer knowledge			
Education level	At most secondary school	38	16.5		Yes	193	83.9
					No	37	16.1
	High school	41	17.8	Breast cancer screening			
	University	92	40		Yes	101	43.9
	Postgraduate	59	25.7		No	129	56.1
Job	Housewife/ non-working	100	43.5	Breast cancer screening type			
				BSE	Yes	90	39.1
	Working	130	56.5		No	140	60.9
Living place	Metropolis	188	81.7	CBE	Yes	21	9.1
	City	27	11.7		No	209	90.9
	Town	13	5.7	Mammography	Yes	34	14.8
	Village	2	.9		No	196	85.2
SES	High	26	11.3	Others	Yes	11	4.8
	Middle	177	77		No	219	95.2
	Low	27	11.7	Cigarette usage	Yes	62	27.3
Health insurance	Owner	215	93.5		No	165	72.7
	Not-owner	15	6.5	Alcohol usage	Yes	86	37.4
Menarche age (m = 13.07, sd = 1.35)					No	144	62.6
Menopause	Yes	43	18.7	Sports	Yes	106	46.5
	No	174	75.7		No	122	53.5
Menopause age (m = 46.98, sd = 5.04)				Balanced diet	Yes	163	70.9
Birth control pills	Yes	86	39		No	67	29.1
	No	137	61				

3.1.2. Measures

The questionnaire set was composed of a demographic information form, Champion's Health Belief Model Scale, Life Orientation Test- Revised, Basic Personality Traits Inventory, Champion Breast Cancer Fear Scale, Champion Mammography Self Efficacy Scale, and The MOS Social Support Survey.

3.1.2.1. Champion's Health Belief Model Scale.

Champion's Health Belief Model Scale (CHBMS) was used to assess health beliefs concerning breast self examination and mammography screening among participants. The scale was originally developed by Champion in 1984 and revised

in 1993, 1997 (Champion & Scott, 1997), and lastly in 1999. The adaptation of this scale into Turkish was studied by Secginli and Nahcivan (2004). CHBMS is a self report measure consisting of 53 items. It has 8 subscales namely, susceptibility to breast cancer (5 items), seriousness of breast cancer (7 items), benefits of BSE (6 items), barriers of BSE (6 items), confidence (11 items), health motivation (7 items), benefits of mammography (6 items), and barriers of mammography (5 items). The scale is a 5-pointLikert-type questionnaire and the choices range from *strongly disagree* (1) to *strongly disagree* (5). About the reliability of the Turkish version of CHBMS, the Cronbach's alpha was found to be between .75 and .87 for all subscales (Secginli & Nahcivan, 2004). The construct validity of the scale was assessed separately for BSE and mammography by principal component factor analysis using oblique rotation. Concerning BSE, totally 40 items were loaded on one of the seven factors. These factors had eigenvalues higher than one and they explain 56 % of the total variation. All items were found to be loaded on the expected factors and their factor loadings ranged between 0.386 and 0.880. Concerning mammography, 30 items of CHBMS were loaded on 6 factors. These factors had eigenvalues higher than one and they explained 59 % of the total variation. In the current study, the internal consistency of the subscales of CHBMS were estimated between .91 and .67.

3.1.2.2. Life Orientation Test- Revised

Life Orientation Test- Revised (LOT-R) was used in this study in order to assess dispositional optimism levels of the participants. The test was originally developed by Scheier, Carver and Bridges (1994). The test was adapted to Turkish by Aydın and Tezer (1991). Then, LOT-R was revised by Türküm in 2001. The test contains 8 items and it is a 5 point Likert-type questionnaire and the answers range between *strongly agree* and *strongly disagree*. As a result of the factor analysis, like in the original scale, in Turkish version of the LOT-R, items loaded under two factors and their explained variance as 57.7%. The internal consistency reliability of Turkish version of the test was .50 and the test-retest reliability of it was found as .77. In the present study, the internal consistency of the scale was estimated as .65.

3.1.2.3. Basic Personality Traits Inventory.

Basic Personality Traits Inventory (BPTI) was applied to measure personality characteristics of the participants. The test was developed for Turkish culture by Gençöz and Öncül (2012). BPTI includes 45 short adjectives loaded under 6 factors, namely extraversion (8 items), conscientiousness (8 items), agreeableness (8 items), neuroticism (9 items), openness to experience (6 items) and negative valence (6 items). These 6 factors explained 53.25 % of the variance. About the reliability, Cronbach's alpha for 6 factors ranged between .71 and .89. The test-retest reliability of BPTI was found between .71 and .84 for 6 factors. In the present study, the internal consistency of the subscales of BPTI were estimated between .86 and .63.

3.1.2.4. Champion Breast Cancer Fear Scale.

Champion Breast Cancer Fear Scale (CBCFS) was used to measure breast cancer fear in participants. Originally developed by Champion et al. (2004), the scale consists of 8 items. The scale was scored on a 5 point Likert scale and the answers range between *strongly agree* (5) and *strongly disagree* (1). Higher total scores specify more fear about breast cancer.

The test was adapted to Turkish by Secginli (2011). The Chronbach's alpha correlation coefficient and test-retest reliability value of Turkish version of CBCFS were .90 and .60, respectively. A principal component analysis resulted in two factors with eigenvalues higher than one; and both of these factors explained 73.24 % of the variance. First factor had 5 items representing intrusive thoughts and accounted for 60.25 % of the variance. The second factor included 3 items representing physiological arousal and explained 12.99 % of the variance. Cronbach's alpha values of these two factors were .90 and .83, respectively. When combined, the alpha value was .90 and a positive correlation emerged between the two factors (r = .63). These results were taken as an evidence for combining two factors into one factor for CBCFS-T. In the present study, the internal consistency of the scale was found as .91.

3.1.2.5. Champion Mammography Self Efficacy Scale.

Champion Mammography Self Efficacy Scale (CMSES) was originally developed by Champion, Skinner, and Menon (2005). It determines the efficacy about having a mammogram screening. The scale includes 10 items and they are scored on a 5-point Likert type scale ranging between *strongly agree* (5) and *strongly disagree* (1). Higher total scores specify higher potential of having a mammogram screening.

This scale was adapted to Turkish by Secginli (2011). The Chronbach's alpha correlation coefficient of Turkish version of CMSES was .90. The test-retest reliability of CBCFS-T was found as .56. A principal component analysis with Varimax rotation was run for CMSES-T. The results indicated that items formed one factor for the scale and this factor explained 53.79 % of the total variance. Items loadings ranged between .62 and .83. In the current study, the internal consistency of the scale was estimated as .90.

3.1.2.6. The MOS Social Support Survey.

The MOS Social Support Survey was developed by Sherbourne and Stewart (1991). It is used to assess the level of social support in participants. It is designed to measure social support in chronically ill participants, and therefore, it is a relatively short scale representing multiple dimensions of social support. The scale includes 20 items; first item measures the number of close friends and relatives and it is used to assess structural support of the participants. The remaining 19 items determine functional support of the participants. The scale is scored on a 5-point Likert type scale and the answers range between *all of the time* (5) and *none of the time* (1). Higher total scores indicate more social support. This scale was adapted to Turkish in the scope of this present study (Yılmaz, 2012). For details, Study 1 can be referred.

The Chronbach's alpha correlation coefficient of the Turkish version of the MOS Social Support Survey was .95. The test-retest reliability of the Turkish version of The MOS Social Support Survey was found as .73.

Items of Turkish version of the MOS Social Support Survey loaded under four factors; emotional/informational support (8 items), tangible support (4 items), positive interaction (4items), and affectionate support (3 items). This factor structure is similar to the original factor structure of the scale. The only difference between the original and the Turkish version is that 14th item (someone to do things with to help you get your mind off) was deleted from further analysis in the original scale; however, since this factor loaded well, it was retarded in the Turkish version. Four factors explained 77.75 % of the total variance. First factor included 8 items and they represented *emotional and informational support*. It explained 56.52% of the variance. The second factor consisted of 4 items and accounted for 9.88% of the variance. It represented *positive interactions* domain of the functional support. The third factor was composed of 3 items and it is named as *affectionate support*. It explained 7.43% of the variance. The fourth and last factor was named as *tangible support* and it had 4 items. It accounted for 3.92% of the variance. Cronbach's alpha values of these factors were .95, .93, .88, and .86, respectively. The test re-test reliability of Turkish version of MOS Social Support Survey was found between .58 and .73 for four factors. In the present study, the internal consistency of the scale was estimated as .95.

3.1.3. Procedure

The data was collected from women without cancer diagnosis from different cities in Turkey between June 2012 and August 2012. Necessary approvals from the Middle East Technical University Research Center for Applied Ethics were obtained before the data collection. Data collection was administered in two different ways. Participants either filled paper-pencil tests or used internet to complete the questionnaires.

After purpose of the study was explained and confidentiality was guaranteed, informed consent forms were obtained from the participants. The questionnaire booklet was provided to the participants who gave their consent to participate to the

study. For participants who used internet, they were also provided informed consents and they indicated their consent for participation by selecting consent button at the web page. Completion of questionnaires lasted for 20 minutes on average. After the administration, all participants were provided either hardcopy or softcopy brochures which were prepared by Turkish Association for Cancer Prevention and Control with the support of Avon Cosmetics Inc. These three brochures were about breast self examination, mammography and facts about breast cancer.

3.1.4. *Data Analysis*

To test the differences between the HBM on BSE and mammography in terms of study variables t test analyses were run. To see the differences among the levels of the demographic variables several t test analyses and one way Analysis of Variances (ANOVAs) were run. Two hierarchical logistic regression analyses were employed to understand which variables explain the performance of BSE and mammography. To test the hierarchical logistic regression model and other hypotheses, the data was analyzed by Statistical Package for Social Sciences (SPSS) (Green, Salkind, & Akey, 1997).

3.2. *Results*

3.2.1. *Group Comparisons*

To understand whether participants differentiated between demographic variables with regard to the dependent variables, a series of independent samples t-test analyses and one way ANOVAs were run. For marital status, job status, menopause, birth control pill usage, breast cancer knowledge, breast cancer protection, BSE, CBE, mammography, other breast cancer screening methods, cigarette usage, alcohol usage, doing sports, and maintaining balanced diet independent samples t-test analyses were run. For education level and SES, one way ANOVAs were performed. For all analyses, same dependent variables were entered,

which were big 5 personality traits (extraversion, agreeableness, openness to experience, neuroticism, and negative valence), dispositional optimism, the HBM subscales (perceived susceptibility, seriousness, BSE benefit, BSE barrier, health motivation, mammography benefit and mammography barrier), the MOS social support subscales (structural support, functional support and its parts such as emotional/informational support, tangible support, affectionate support, positive interactions), breast cancer fear, and mammography self efficacy. The reported results were the significant ones among the others.

Marital status had two groups. Single, divorced, and widow participants were merged to constitute the first group, and the second group was composed of married participants. There were significant differences between these two groups in terms of conscientiousness ($t(228) = -2.39$, $p < .05$), neuroticism ($t(228) = 2.70$, $p < .01$), and negative valence ($t(228) = 2.21$, $p < .05$). Married participants obtained significantly higher scores on conscientiousness ($m = 32.98$, $sd = 4.67$) than single, widow, and divorced participants ($m = 31.24$, $sd = 5.66$). Married participants got significantly lower scores of neuroticism ($m = 23.62$, $sd = 6.10$) than single, widow, and divorced participants ($m = 25.90$, $sd = 6.20$). Similarly, married participants obtained lower scores on negative valence ($m = 8.91$, $sd = 2.65$) than single, widow, and divorced participants ($m = 9.75$, $sd = 2.87$) (See Table 7).

Table 7. *Descriptive Statistics and t-test Results for Marital Status.*

		n	*m*	*sd*	*t (228)*	*p*
Conscientiousness	Married	85	32.98	4.67	-2.39	.05
	Single	145	31.24	5.66	-2.39	.05
Neuroticism	Married	85	23.62	6.10	2.70	.01
	Single	145	25.90	6.20	2.70	.01
Negative valence	Married	85	8.91	2.65	2.21	.05
	Single	145	9.75	2.87	2.21	.05

Job had two groups, namely housewife/nonworking and working (worker/ officer) groups. There was a significant difference between two groups on emotional/informational support ($t(228) = -2.46$, $p < .05$). Housewife/nonworking

group acquired significantly lower scores in emotional/informational support (*m* = 31.59, *sd* = 6.98) than their working counterparts (*m* = 33.75, *sd* = 6.31) (See Table 8).

Table 8. *Descriptive Statistics and t-test Results for Job.*

		n	*m*	*sd*	*t (228)*	*p*
Emotional/ informational Support	Non-working	100	31.59	6.98	-2.46	.05
	Working	130	33.75	6.31	-2.46	.05

As Table 9 illustrates, there were significant differences between women who experienced menopause and who did not in terms of seriousness ($t(215) = 2.87$, $p < .01$), BSE benefit ($t(215) = 2.54$, $p < .05$), mammography benefit ($t(215) = 2.52$, $p < .05$), conscientiousness ($t(215) = -2.80$, $p < .01$), openness to experience ($t(215) = -2.26$, $p < .05$), negative valence ($t(215) = -2.10$, $p < .05$), dispositional optimism ($t(215) = -2.66$, $p < .01$), emotional-informational support ($t(215) = 3.35$, $p < .001$), affectionate support ($t(215) = 2.33$, $p < .05$), and functional support ($t(215) = 3.02$, $p < .01$). Women who did not experience menopause obtained significantly higher scores on seriousness (*m* = 21.02, *sd* = 5.29) than their counterparts who experienced menopause (*m* = 18.37, *sd* = 5.90). Women who did not experience menopause obtained significantly higher scores on BSE benefit (*m* = 21.58, *sd* = 4.02) than their counterparts who experienced menopause (*m* = 19.84, *sd* = 4.11). Women who did not experience menopause obtained significantly higher scores on mammography benefit (*m* = 23.86, *sd* = 3.53) than their counterparts who experienced menopause (*m* =22.32, *sd* = 3.73). Women who did not experience menopause obtained significantly higher scores on emotional/informational support (*m* = 33.75, *sd* = 6.70) than their counterparts who experienced menopause (*m* = 29.55, *sd* = 6.33). Women who did not experience menopause obtained significantly higher scores on affectionate support (*m* = 12.86, *sd* = 2.68) than their counterparts who experienced menopause (*m* = 11.79, *sd* = 2.72). Last, women who did not experience menopause obtained significantly higher scores on functional support (*m* = 79.66, *sd* = 14.41) than their counterparts who experienced menopause (*m* =

72.25, *sd* = 14.23). On the contrary, women who experienced menopause obtained significantly higher scores on conscientiousness (*m* = 33.82, *sd* = 5.20) than their counterparts who did not experience menopause (*m* = 31.29, *sd* = 5.33). Women who experienced menopause obtained significantly higher scores on openness to experience (*m* = 23.46, *sd* = 3.19) than their counterparts who did not experience menopause (*m* = 22.10, *sd* = 3.62). Women who experienced menopause obtained significantly higher scores on negative valence (*m* = 10.29, *sd* = 3.51) than their counterparts who did not experience menopause (*m* = 9.28, *sd* = 2.63). Women who experienced menopause obtained significantly higher scores on dispositional optimism (*m* = 17.74, *sd* = 3.24) than their counterparts who did not experience menopause (*m* = 16.10, *sd* = 3.69).

There was a significant difference on mammography benefit ($t(221) = -2.38$, $p < .05$) between women who used birth control pills and women who did not. Women who reported they used birth control pills had significantly higher scores on mammography benefit (*m* = 24.28, *sd* = 3.21) than their counterparts who did not use birth control pills (*m* = 23.14, *sd* = 3.62) (See Table 10).

Table 9. *Descriptive Statistics and t-test results for Women Who Had Menopause and Women Who Did Not Have.*

		n	*m*	*sd*	*t (228)*	*p*
Serioussness	Menopause +	43	18.37	5.90	2.87	.01
	Menopause -	174	21.02	5.29	2.87	.01
BSE benefit	Menopause +	43	19.84	4.11	2.54	.05
	Menopause -	174	21.58	4.02	2.54	.05
Mammography	Menopause +	43	22.32	3.73	2.52	.05
benefit	Menopause -	174	23.86	3.53	2.52	.05
Conscientiousness	Menopause +	43	33.82	5.20	-2.80	.01
	Menopause -	174	31.29	5.33	-2.80	.01
Openness to	Menopause +	43	23.46	3.19	-2.26	.05
experience	Menopause -	174	22.10	3.62	-2.26	.05
Negative valence	Menopause +	43	10.29	3.51	-2.10	.05
	Menopause -	174	9.28	2.63	-2.10	.05
Dispositional	Menopause +	43	17.74	3.24	-2.66	.01
optimism	Menopause -	174	16.10	3.69	-2.66	.01
Emotional/	Menopause +	43	29.55	6.33	3.35	.001
informational	Menopause -	174	33.35	6.70	3.35	.001
Support						
Affectionate	Menopause +	43	11.79	2.72	2.33	.05
Support	Menopause -	174	12.86	2.68	2.33	.05
Functional	Menopause +	43	72.25	14.23	3.02	.01
Support	Menopause -	174	79.66	14.41	3.02	.01

Table 10. *Descriptive Statistics and t-test Results for Women Who Used Birth Control Pills and Who Did Not.*

		n	*m*	*sd*	*t (228)*	*p*
Mammography	Pills +	86	24.28	3.21	-2.38	.05
Benefit	Pills -	137	23.14	3.62	-2.38	.05

As Table 11 demonstrates, women who had knowledge about breast cancer significantly differentiated from women who did not have knowledge about breast cancer in terms of BSE barrier ($t(228) = 2.33$, $p < .05$), BSE confidence ($t(228) = -5.84$, $p < .001$), mammography barrier ($t(228) = 2.70$, $p < .01$), breast cancer fear ($t(228) = 2.24$, $p < .05$), and mammography self efficacy ($t(228) = -1.98$, $p < .05$). Women who did not have breast cancer knowledge obtained significantly higher scores on BSE barrier ($m = 13.43$, $sd = 3.48$) than women who had breast cancer

knowledge (*m* = 11.74, *sd* = 4.12). Women who did not have breast cancer knowledge obtained significantly higher scores on mammography barrier (*m* = 12.46, *sd* = 3.44) than women who had breast cancer knowledge (*m* = 10.94, *sd* = 3.07). Similarly, women who did not have breast cancer knowledge obtained significantly higher scores on breast cancer fear (*m* = 26.19, *sd* = 5.27) than women who had breast cancer knowledge (*m* = 23.45, *sd* = 7.05). Rather, women who had breast cancer knowledge acquired significantly higher scores on BSE confidence (*m* = 36.72, *sd* = 7.54) than women who did not have breast cancer knowledge (*m* = 28.65, *sd* = 8.52). Women who had breast cancer knowledge acquired significantly higher scores on mammography self efficacy (*m* = 41.24, *sd* = 5.96) than women who did not have breast cancer knowledge (*m* = 39.08, *sd* = 6.63).

Table 11. *Descriptive Statistics and t-test Results for Women Who Had Knowledge About Breast Cancer and Women Who Did Not Have.*

		n	*m*	*sd*	*t(228)*	*p*
BSE barrier	Knowledge +	37	11.74	4.12	2.33	.05
	Knowledge -	193	13.43	3.48	2.33	.05
BSE confidence	Knowledge +	37	36.72	7.54	-5.84	.001
	Knowledge -	193	28.65	8.52	-5.84	.001
Mammography barrier	Knowledge +	37	10.94	3.07	2.70	.01
	Knowledge -	193	12.46	3.44	2.70	.01
Breast cancer fear	Knowledge +	37	23.45	7.05	2.24	.05
	Knowledge -	193	26.19	5.27	2.24	.05
Mammography self efficacy	Knowledge +	37	41.24	5.96	-1.98	.05
	Knowledge -	193	39.08	6.63	-1.98	.05

Women who practiced breast cancer protection differentiated significantly from women who did not practice breast cancer protection on BSE benefit ($t(228) = -2.49$, $p < .05$), BSE barrier ($t(228) = 4.05$, $p < .001$), BSE confidence ($t(228) = -6.50$, $p < .001$), health motivation ($t(228) = -3.83$, $p < .001$), mammography benefit ($t(228) = -2.75$, $p < .01$), mammography barrier ($t(228) = 3.02$, $p < .01$), mammography self efficacy ($t(228) = -3.74$, $p < .001$), openness to experience ($t(228) = -2.19$, $p < .05$), and dispositional optimism ($t(228) = -2.25$, $p < .05$). Women who practiced breast cancer protection had significantly higher scores in BSE benefit (*m* = 21.88, *sd* = 3.82) than women who did not practice breast cancer

protection (*m* = 20.52, *sd* = 4.31). Women who practiced breast cancer protection had significantly higher scores in BSE confidence (*m* = 39.09, *sd* = 6.74) than women who did not practice breast cancer protection (*m* = 32.55, *sd* = 8.18). Women who practiced breast cancer protection had significantly higher scores in health motivation (*m* = 27.14, *sd* = 3.45) than women who did not practice breast cancer protection (*m* = 25.24, *sd* = 3.94). Women who practiced breast cancer protection had significantly higher scores in mammography benefit (*m* = 24.17, *sd* = 3.30) than women who did not practice breast cancer protection (*m* = 22.87, *sd* = 3.79). Women who practiced breast cancer protection had significantly higher scores in mammography self efficacy (*m* = 42.55, *sd* = 5.38) than women who did not practice breast cancer protection (*m* = 39.60, *sd* = 6.35). Women who practiced breast cancer protection had significantly higher scores in openness to experience (*m* = 22.99, *sd* = 3.31) than women who did not practice breast cancer protection (*m* = 21.97, *sd* = 3.64). Women who practiced breast cancer protection had significantly higher scores in dispositional optimism (*m* = 17.01, *sd* = 3.19) than women who did not practice breast cancer protection (*m* = 15.93, *sd* = 3.90). On the contrary, women who did not practice breast cancer protection had significantly higher scores in BSE barrier (*m* = 12.94, *sd* = 4.41) than women who practiced breast cancer protection (*m* = 10.83, *sd* = 3.22). Women who did not practice breast cancer protection had significantly higher scores in mammography barrier (*m* = 11.73, *sd* = 3.21) than women who practiced breast cancer protection (*m* = 10.48, *sd* = 2.98) (See Table 12).

Table 12. *Descriptive Statistics and t-test results for Women Who Practiced Breast Cancer Protection and Women Who Did Not Practice.*

		n	*m*	*sd*	*t(228)*	*p*
BSE benefit	Practice +	101	21.88	3.82	-2.49	.05
	Practice -	129	20.52	4.31	-2.49	.05
BSE barrier	Practice +	101	10.83	3.22	4.05	.001
	Practice -	129	12.94	4.41	4.05	.001
BSE confidence	Practice +	101	39.09	6.74	-6.50	.001
	Practice -	129	32.55	8.18	-6.50	.001
Health Motivation	Practice +	101	27.14	3.45	-3.83	.001
	Practice -	129	25.24	3.84	-3.83	.001
Mammography	Practice +	101	24.17	3.30	-2.75	.01
benefit	Practice -	129	22.87	3.79	-2.75	.01
Mammography	Practice +	101	10.48	2.98	3.02	.01
barrier	Practice -	129	11.73	3.21	3.02	.01
Mammography	Practice +	101	42.55	5.38	-3.74	.001
self efficacy	Practice -	129	39.60	6.35	-3.74	.001
Openness to	Practice +	101	22.99	3.31	-2.19	.05
experience	Practice -	129	21.97	3.64	-2.19	.05
Dispositional	Practice +	101	17.01	3.19	-2.25	.05
optimism	Practice -	129	15.93	3.90	-2.25	.05

As Table 13 shows, there were significant differences between women who reported they used cigarette and women who reported they did not in terms of neuroticism ($t(225) = -2.86$, $p < .01$) and tangible support ($t(225) = 2.12$, $p < .05$). Smoking women had significantly higher scores in neuroticism ($m = 27.03$, $sd = 6.34$) than non-smoking women ($m = 24.47$, $sd = 5.88$). They also had significantly lower scores in tangible support ($m = 15.35$, $sd = 4.16$) than non-smoking women ($m = 16.47$, $sd = 3.24$).

Table 13. *Descriptive Statistics and T-test results for Women Who Smoked Cigarette and Women Who Did Not*.

		n	*m*	*sd*	*t(228)*	*p*
Neuroticism	Smoking	62	27.03	6.34	-2.86	.01
	Non-smoking	165	24.47	5.88	-2.86	.01
BSE confidence	Smoking	62	15.35	4.16	2.12	.05
	Non-smoking	165	16.47	3.24	2.12	.05

Alcohol using and abstinent women showed significant differences with regard to susceptibility ($t(228) = -2.68$, $p < .01$), conscientiousness ($t(228) = 4.42$, $p < .001$), emotional/informational support ($t(228) = -2.18$, $p < .05$), and functional support ($t(225) = -1.96$, $p < .05$). Alcohol using women scored significantly higher in susceptibility ($m = 11.75$, $sd = 4.26$) than abstinent women ($m = 10.35$, $sd = 3.58$). Alcohol using women scored significantly higher in emotional/informational support ($m = 34.05$, $sd = 6.55$) than abstinent women ($m = 32.08$, $sd = 6.68$). Alcohol using women scored significantly higher in functional support ($m = 81.14$, $sd = 14.19$) than abstinent women ($m = 77.30$, $sd = 14.50$). Abstinent women, on the other hand, scored significantly higher in conscientiousness ($m = 33.04$, $sd = 5.03$) than alcohol using women ($m = 29.93$, $sd = 5.40$) (See Table 14).

Table 14. *Descriptive Statistics and t-test results for Women Who Consumed Alcohol and Women Who Did Not.*

		n	*m*	*sd*	*t(228)*	*p*
Susceptibility	Alcohol +	86	11.75	4.26	-2.68	.01
	Alcohol -	144	10.35	3.58	-2.68	.01
Conscientiousness	Alcohol +	86	29.93	5.40	4.42	.001
	Alcohol -	144	33.04	5.03	4.42	.001
Emotional/ Informational Support	Alcohol +	86	34.05	6.55	-2.18	.05
	Alcohol -	144	32.08	6.68	-2.18	.05
Functional Support	Alcohol +	86	81.14	14.19	-1.96	.05
	Alcohol -	144	77.30	14.50	-1.96	.05

As Table 15 illustrates, there were significant differences between women who did sports and who did not do on health motivation ($t(226) = -4.04$, $p < .001$), and extraversion ($t(226) = -2.30$, $p < .05$). Women who reported they did sports obtained significantly higher scores on health motivation ($m = 27.10$, $sd = 3.67$) than women who reported they did not do sports ($m = 25.11$, $sd = 3.73$). Likewise, women who reported they did sports obtained significantly higher scores on extraversion ($m = 30.74$, $sd = 5.44$) than women who reported they did not do sports ($m = 28.93$, $sd = 6.30$).

Table 15. *Descriptive Statistics and t-test results for Women Who Did Sports and Women Who Did Not.*

		n	*m*	*sd*	*t(228)*	*p*
Health motivation	Sports +	106	27.10	3.67	-4.04	.001
	Sports-	122	25.11	3.73	-4.04	.001
Extraversion	Sports +	106	30.74	5.44	-2.30	.05
	Sports-	122	28.93	6.30	-2.30	.05

Women who maintained balanced diet and women who did not significantly differentiated on seriousness ($t(228) = 3.46$, $p < .001$), health motivation ($t(228) = -3.28$, $p < .001$), neuroticism ($t(228) = 2.82$, $p < .01$), and dispositional optimism ($t(228) = -3.78$, $p < .001$). Women who maintained balanced diet got significantly higher scores on health motivation ($m = 26.59$, $sd = 3.80$) than women who did not maintain balanced diet ($m = 24.81$, $sd = 3.66$). Similarly, women who maintained balanced diet got significantly higher scores on dispositional optimism ($m = 16.97$, $sd = 3.29$) than women who did not maintain balanced diet ($m = 15.03$, $sd = 4.09$). On the contrary, women who did not maintain balanced diet got significantly higher scores on seriousness ($m = 22.48$, $sd = 5.53$) than women who maintained balanced diet ($m = 19.87$, $sd = 5.30$). Likewise, women who did not maintain balanced diet got significantly higher scores on neuroticism ($m = 26.85$, $sd = 6.92$) than women who maintained balanced diet ($m = 24.33$, $sd = 5.82$) (See Table 16).

Table 16. *Descriptive Statistics and t-test results for Women Who Had Balanced Diet Who Did Not Have.*

		N	*m*	*sd*	*t(228)*	*p*
Seriousness	Balanced Diet +	163	19.87	5.30	3.46	.001
	Balanced Diet -	67	22.48	5.53	3.46	.001
Health motivation	Balanced Diet +	163	26.59	3.80	-3.28	.001
	Balanced Diet -	67	24.81	3.66	-3.28	.001
Neuroticism	Balanced Diet +	163	24.33	5.82	2.82	.01
	Balanced Diet -	67	26.85	6.92	2.82	.01
Dispositional optimism	Balanced Diet +	163	16.97	3.29	-3.78	.001
	Balanced Diet -	67	15.03	4.09	-3.78	.001

To see the effects of education and SES on study variables, two separate one way ANOVAs were run. The first one-way ANOVA yielded that the effects of education on susceptibility ($F(3, 226) = 2.67$, $p < .05$), BSE barrier ($F(3, 226) = 3.56$, $p < .05$), mammography benefit ($F(3, 226) = 3.06$, $p < .05$), mammography self efficacy ($F(3, 226) = 5.50$, $p < .001$), conscientiousness ($F(3,226) = 5.83$, $p < .001$), agreeableness ($F(3, 226) = 5.25$, $p < .01$), openness to experience ($F(3, 226) = 3.96$, $p < .01$), emotional/informational support ($F(3, 226) = 5.35$, $p < .001$), and functional support ($F(3, 226) = 3.61$, $p < .05$) were significant. When differences among education groups namely at most secondary school, high school, university and postgraduate were examined with Tukey HSD test, it was found that high school graduates had significantly lower scores on susceptibility ($m = 9.34$, $sd = 3.36$) than participants with postgraduate degree ($m = 11.35$, $sd = 4.52$). That is, high school graduate participants found themselves less susceptible to breast cancer than those with postgraduate degree (See Table 17).

Table 17. *Descriptive Statistics, Analysis of Variance, and Tukey HSD Tests for the Scales and Education Level.*

	At Most Secondary		High		University		Postgraduate		One-way ANOVA		
Scales	*m*	*sd*	*m*	*sd*	*m*	*sd*	*m*	*sd*	*df*	*F(3,226)*	*p*
Susceptibility	11.13	3.30	9.34_a	3.36	11.15	3.81	11.35_b	4.52	3	2.67	.05
BSE Barrier	13.34_a	4.27	12.93	4.81	11.64	3.51	11.12_b	3.93	3	3.56	.05
Mammography benefit	22.89	3.84	22.26_a	4.28	23.63	3.10	24.32_b	3.60	3	3.06	.05
Mammography self efficacy	39.87	6.68	38.06_a	5.54	41.47_b	5.82	42.64_b	5.89	3	5.50	.001
Conscientiousness	34.53_a	5.51	33.07	4.37	30.90_b	5.80	30.86_b	4.53	3	5.83	.001
Agreeableness	36.37_a	4.07	35.38	3.45	34.60	3.56	33.52_b	3.52	3	5.25	.01
Openness to experience	24.03_a	3.57	22.78	2.98	21.94_b	3.69	21.86_b	3.33	3	3.96	.01
Emotional/ informational support	30.95	6.23	30.02_a	7.29	34.01_b	6.37	34.09_b	6.30	3	5.35	.001
Functional support	75.51	13.97	73.68_a	16.65	80.56_b	13.62	81.47_b	13.51	3	3.61	.05

Note. The mean scores that do not share the same subscript on the same row are significantly different from each other at .05 alpha level of Tukey's HSD test.

Participants with at most secondary school degree got significantly higher scores on BSE barrier (*m* = 13.34, *sd* = 4.27) than participants with postgraduate education (*m* = 11.12, *sd* = 3.93). This means that participants with at most secondary school degree had more BSE barriers than those with postgraduate degree.

High school graduate participants did also achieve significantly lower scores on mammography benefit (*m* = 22.26, *sd* = 4.28) than those with postgraduate level (*m* = 24.32, *sd* = 3.60). Hence, participants with high school degree reported lower mammography benefit than those with postgraduate level.

High school graduates had significantly lower scores on mammography self efficacy (*m* = 38.06, *sd* = 5.54) than participants with university degree (*m* = 41.47, *sd* = 5.82) and postgraduate degree (*m* = 42.64, *sd* = 5.98). That is to say, high school graduates had lower mammography self efficacy than those with university or higher level education.

Participants with at most secondary school degree achieved significantly higher scores on conscientiousness (*m* = 34.53, *sd* = 5.51) than participants with university degree (*m* = 30.90, *sd* = 5.80) and postgraduate degree (*m* = 30.86, *sd* = 4.53). Therefore, participants with at most secondary school degree were more conscientious than participants with university or higher level education.

Participants with at most secondary school degree acquired significantly higher scores on agreeableness (*m* = 36.37, *sd* = 4.07) than participants with postgraduate degree (*m* = 33.52, *sd* = 3.52). Hence, participants with at most secondary school degree were more agreeable than those with postgraduate degree.

Participants with at most secondary school degree did also obtain significantly higher scores on openness to experience (*m* = 24.03, *sd* = 3.57) than participants with university degree (*m* = 21.94, *sd* = 3.69) and postgraduate degree (*m* = 21.86, *sd* = 3.33). Therefore, participants with at most secondary school degree were more open to experience than those with university or higher level education.

High school graduates had significantly lower scores on emotional/ informational support (m = 30.02, sd = 7.29) than participants with university degree (m = 34.01, sd = 6.37) and postgraduate degree (m = 34.09, sd = 6.30). In other words, high school graduate participants had lower level of emotional/ informational support than those with university or higher level education.

High school graduates did also obtain significantly lower scores on functional support (m = 73.68, sd = 16.65) than participants with university degree (m = 80.56, sd = 13.62) and postgraduate degree (m = 81.47, sd = 13.51). Hence, high school graduates had lower level of functional support than participants with university or higher level education.

The second one-way ANOVA revealed that the effects of SES on agreeableness ($F(2, 227) = 4.21$, $p < .05$) and positive interaction ($F(2, 227) = 3.71$, $p < .05$) were significant. When differences among SES namely low, middle and high were examined with Tukey HSD test, it was found that participants with high SES obtained significantly lower scores on agreeableness (m = 33.11, sd = 4.40) than participants with low SES (m = 36.02, sd = 3.77). That is, participants with high SES were less agreeable than participants with low SES.

Moreover, participants with low SES obtained significantly lower scores on positive interaction (m = 15.44, sd = 13.51) than participants with middle SES (m = 17.17, sd = 3.12). In other words, participants with low SES had lower levels of positive interaction type of social support than participants with middle SES (See Table 18).

Table 18. *Descriptive Statistics, Analysis of Variance, and Tukey HSD Tests for the Scales and Socioeconomic Status.*

	Low		Middle		High		One-way ANOVA		
Scales	*m*	*sd*	*m*	*sd*	*m*	*sd*	*df*	*F (2,227)*	*p*
Agree-ableness	36.02_a	4.10	34.80	3.58	33.11_b	4.10	2	4.21	.05
Positive Interaction	15.44_a	3.44	17.17_b	3.12	17.31	2.88	2	3.71	.05

Note. The mean scores that do not share the same subscript on the same row are significantly different from each other at .05 alpha level of Tukey's HSD test.

3.2.2. *Testing the HBM Notions*

The HBM was used to understand its subscales effect on determining BSE, mammography, and on CBE, other ways of breast cancer screening (such as breast ultrasound). The HBM stipulates that if a woman perceives herself as highly susceptible to breast cancer, and perceives breast cancer as a serious disease, she would be more likely to perform breast cancer screening methods. Likewise, if she perceives more benefits and fewer barriers for BSE, she would be more likely to practice BSE. Moreover, the women who have higher levels of health motivation and who feel higher confidence for practicing BSE would be more likely to adopt BSE. The same proposal is also valid for mammography. Therefore, independent samples t-test was calculated to test the validity of HBM notions on breast cancer screening methods (Champion, 1993).

The results suggested that there were significant differences between the women who practiced BSE and who did not on BSE benefit ($t(228) = -3.26$, $p < .001$), BSE barrier ($t(228) = 4.52$, $p < .001$), BSE confidence ($t(228) = -7.17$, $p < .001$), and health motivation ($t(228) = -3.28$, $p < .001$). However, susceptibility ($t(228) = -1.77$, $p > .05$) and seriousness ($t(228) = 1.50$, $p > .05$) was not significantly differed between women who practiced BSE and who did not. The women who practiced BSE had significantly higher scores on BSE benefit ($m = 22.21$, $sd = 3.85$) than women who did not practice BSE ($m = 20.42$, $sd = 4.20$). Similarly, BSE practicing women had significantly higher scores on BSE

confidence (*m* = 39.82, *sd* = 6.93) than women who did not practice BSE (*m* = 32.60, *sd* = 7.78). In addition, BSE practicing women obtained significantly higher scores on health motivation (*m* = 27.08, *sd* = 3.32) than women who did not practice BSE (*m* = 25.42, *sd* = 4.02) (See Table 19).

Table 19. *Descriptive Statistics and t-test Results for Women Who practiced BSE and Who Did Not.*

		n	*m*	*sd*	*t (228)*	*p*
Susceptibility	BSE Practice	90	11.44	4.19	-1.77	.078
	BSE Non-practice	140	10.51	3.66	-1.77	.078
Seriousness	BSE Practice	90	19.89	5.08	1.50	.134
	BSE Non-practice	140	21.00	5.72	1.50	.134
BSE benefit	BSE Practice	90	22.21	3.85	-3.26	.001
	BSE Non-practice	140	20.42	4.20	-3.26	.001
BSE barrier	BSE Practice	90	10.57	3.37	4.52	.001
	BSE Non-practice	140	12.95	4.20	4.52	.001
BSE confidence	BSE Practice	90	39.82	6.93	-7.17	.001
	BSE Non-practice	140	32.60	7.78	-7.17	.001
Health Motivation	BSE Practice	90	27.08	3.32	-3.28	.001
	BSE Non-practice	140	25.42	4.02	-3.28	.001

The results revealed that there was no significant difference between women who had mammograms and who did not have on susceptibility (*t*(228) = -.48, *p* = .63), seriousness (*t*(228) = 1.91, *p* = .057), health motivation (*t*(228) = -1.77, *p* = .078), mammography benefit (*t*(228) = -.45, *p* = .65), mammography barrier (*t*(228) = .78, *p* = .43), and mammography self efficacy (*t*(228) = -1.14, *p* = .25). Therefore, the HBM components were not able to significantly differentiate women who had mammography and who did not have. Upon these results, independent samples t-test was employed again with other remaining independent variables: big 5 personality characteristics, dispositional optimism, breast cancer fear, and social support measures namely, structural support, functional support, emotional/ informational support, positive interaction, affectionate support, and tangible support. The second t-test results demonstrated that there were significant differences between women who had mammography and who did not have on

emotional/informational support ($t(228) = 3.70$, $p < .001$), positive interaction ($t(228) = 2.03$, $p < .05$), affectionate support ($t(228) = 2.77$, $p < .05$), tangible support ($t(228) = 4.05$, $p < .001$), and functional support ($t(228) = 3.66$, $p < .001$). For all types of social support, women who did not have mammography acquired significantly higher scores than those who had mammography. First, women who did not have mammography acquired significantly higher scores on emotional/informational support ($m = 33.47$, $sd = 6.63$) than women who had mammography ($m = 29.00$, $sd = 5.68$). Second, women who did not have mammography acquired significantly higher scores on positive interaction ($m = 17.16$, $sd = 3.22$) than women who had mammography ($m = 15.97$, $sd = 2.64$). Third, women who did not have mammography acquired significantly higher scores on affectionate support ($m = 12.95$, $sd = 2.60$) than women who had mammography ($m = 11.58$, $sd = 2.84$). Fourth, women who did not have mammography acquired significantly higher scores on tangible support ($m = 16.58$, $sd = 3.38$) than women who had mammography ($m = 14.00$, $sd = 3.66$). Last, women who did not have mammography acquired significantly higher scores on functional support ($m = 80.16$, $sd = 14.27$) than women who had mammography ($m = 70.56$, $sd = 13.02$) (See Table 20).

Table 20. *Descriptive Statistics and t-test Results for Women Who Had Mammography and Who Did Not Have.*

		n	*m*	*sd*	*t (228)*	*p*
Emotional/Informational Support	M. Practice	34	29.00	5.68	3.70	.001
	M. Non-practice	196	33.47	6.63	3.70	.001
Positive Interaction	M. Practice	34	15.97	2.64	2.03	.05
	M. Non-practice	196	17.16	3.22	2.03	.05
Affectionate Support	M. Practice	34	11.58	2.84	2.77	.05
	M. Non-practice	196	12.95	2.60	2.77	.05
Tangible Support	M. Practice	34	14.00	3.66	4.05	.001
	M. Non-practice	196	16.58	3.38	4.05	.001
Functional Support	M. Practice	34	70.56	13.02	3.66	.001
	M. Non-practice	196	80.16	14.27	3.66	.001

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The HBM components were also analyzed by independent samples t-test to see their effect on CBE and other ways of breast cancer screening (such as breast ultrasound). Women who had CBE and who did not have significantly differentiated on susceptibility ($t(228) = -3.09$, $p < .01$), mammography barrier ($t(228) = 2.48$, $p < .01$) , and mammography self efficacy ($t(228) = -3.38$, $p < .001$). Women who had CBE got significantly higher scores on susceptibility ($m = 13.34$, $sd = 4.56$) than women who did not have CBE ($m = 10.63$, $sd = 3.75$). Likewise, women who had CBE acquired significantly higher scores on mammography self efficacy ($m = 45.09$, $sd = 4.68$) than women who did not have CBE ($m = 40.47$, $sd = 6.09$). However, women who did not have CBE obtained significantly higher scores on mammography barrier ($m = 11.35$, $sd = 3.11$) than women who had CBE ($m = 9.57$, $sd = 3.40$) (See Table 21).

Table 21. *Descriptive Statistics and t-test Results for Women Who practiced CBE and Who Did Not.*

		n	*m*	*sd*	*t (228)*	*p*
Susceptibility	CBE Practice	21	13.34	4.56	-3.09	.01
	CBE Non-practice	209	10.63	3.75	-3.09	.01
Mammography	CBE Practice	21	9.57	3.40	2.48	.01
Barrier	CBE Non-practice	209	11.35	3.11	2.48	.01
Mammography	CBE Practice	21	45.09	4.68	-3.38	.001
Self Efficacy	CBE Non-practice	209	40.47	6.09	-3.38	.001

There were significant differences between women who had other ways of breast cancer screening (such as breast ultrasound) and women who did not have on health motivation ($t(228) = -3.05$, $p < .01$), mammography barrier ($t(228) = 2.07$, $p < .05$), and mammography self efficacy ($t(228) = -3.42$, $p < .001$). Women who had other ways of breast cancer screening obtained significantly higher scores on health motivation ($m = 29.45$, $sd = 4.16$) than women who did not have ($m = 25.90$, $sd = 3.75$). Similarly, women who had other ways of breast cancer screening obtained significantly higher scores on mammography self efficacy ($m = 46.90$, $sd = 4.01$) than women who did not have ($m = 40.59$, $sd = 6.05$). However, women who did not have other ways of breast cancer screening acquired significantly higher scores on

mammography barrier (*m* = 11.28, *sd* = 3.17) than women who had other ways of breast cancer screening (*m* = 9.27, *sd* = 2.72) (See Table 22).

Table 22. *Descriptive Statistics and t-test Results for Women Who Had Other Ways of Breast Cancer Screening and Who Did Not Have*

		n	*m*	*sd*	*t (228)*	*p*
Health Motivation	Others Practice	11	29.45	4.16	-3.05	.01
	Others Non-practice	219	25.90	3.75	-3.05	.01
Mammography Barrier	Others Practice	11	9.27	2.72	2.07	.05
	Others Non-practice	219	11.28	3.17	2.07	.05
Mammography Self Efficacy	Others Practice	11	46.90	4.01	-3.42	.001
	Others Non-practice	219	40.59	6.05	-3.42	.001

All these results pointed out the effect of the HBM variables on several types of breast cancer screening such as BSE, mammography, CBE, and other ways such as breast ultrasound. Independent samples t-test analyses for all breast cancer screening types concluded that not all the HBM components were able to differentiate women who had breast cancer screening and who did not have. Specifically, although the HBM included susceptibility and seriousness, the results excluded these two components and showed that the perceived benefit and barrier for BSE, confidence in performing BSE, and health motivation were able to significantly differentiate women who practiced BSE and who did not. For mammography, the HBM was not able to differentiate women who had mammography and who did not have. Rather, social support significantly clarified the difference between women who had mammography and women who did not have. For CBE, among the HBM components susceptibility, mammography barrier, and mammography self efficacy were effective in creating significant differences between women who had CBE and who did not have. Different from others, susceptibility was an effective independent variable for CBE. For breast ultrasound or other methods, health motivation, mammography barrier, and mammography self efficacy were able to create significant differences between women who had them and those who did not have (Table 23). Since mammography, CBE, and breast

ultrasound all share that they have been conducted at hospitals, mammography barriers and mammography self efficacy components were shared by the last two methods of breast cancer screening.

Table 23. *Schematic Appearance of Testing the HBM Notions*

The HBM variables	BSE	Mammography	CBE	Other Methods
Seriousness	x	x	x	x
Susceptibility	x	x	✓	x
Health motivation	✓	x	x	✓
BSE confidence	✓	x	x	x
BSE benefit	✓	x	x	x
BSE barrier	✓	x	x	x
Mammography benefit	x	x	x	x
Mammography barrier	x	x	✓	✓
Mammography self efficacy*	x	x	✓	✓

Note. *Mammography self efficacy is a separate scale.

3.2.3. *Correlations*

Zero order correlation coefficients among the measures were examined to investigate the relationships among twenty five variables included in the current study. These variables were composed of two continuous demographic variables namely, age, and menarche age, and the study variables namely, the HBM factors (susceptibility, seriousness, BSE benefit, BSE barrier, BSE confidence, health motivation, mammography benefit, and mammography barrier), breast cancer fear, mammography self efficacy, big 5 personality traits (extraversion, agreeableness, conscientiousness, neuroticism and negative valence), optimism, the MOS social support factors (structural support, functional support, emotional/informational support, tangible support, positive interactions and affectionate support (See Table 24).

Table 24. *Correlation Coefficients among Measures*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Age	1																								
2. Menarche age	.10	1																							
3. Susceptibility	-.03	.03	1																						
4. Seriousness	-.22**	-.08	.32**	1																					
5. BSE benefit	-.15*	-.06	-.02	-.07	1																				
6. BSE barrier	.02	.14*	-.00	.32**	-.33**	1																			
7. BSE confidence	.04	.07	-.01	-.30	.43**	-.39**	1																		
8. Health motivation	-.30	.02	-.09	-.21**	.28**	-.23**	.29**	1																	
9. Mammography benefit	-.18**	.03	.12	.11	.41**	-.30	.19**	.31**	1																
10. Mammography barrier	.00	-.04	-.11	.15*	-.16*	.43**	-.23**	-.18**	-.27**	1															
11. Breast Cancer Fear	-.10	-.05	.20**	.63**	-.07	.27**	-.24**	-.05	.00	.24**	1														
12. Mammography self efficacy	-.08	-.08	.01	-.11	.23**	-.37**	.27	.27**	.28**	-.39**	-.13*	1													
13. Extraversion	.08	-.06	-.18**	-.17**	.00	-.15*	.08	.24**	.04	-.15*	-.09	.25**	1												
14. Conscientiousness	.22**	.13*	-.15*	-.10	.02	.04	.05	.15*	.05	.00	-.06	.00	.28	1											
15. Agreeableness	.08	.06	-.03	-.04	-.05	.00	.14*	.21**	.09	-.09	.02	.09	.36**	.37**	1										
16. Neuroticism	-.15*	-.17*	.16*	.29**	.00	.03	-.13	-.11	.05	.01	.21**	-.07	-.19	-.19**	-.29**	1									
17. Openness to experience	.17*	-.04	-.23**	-.18**	-.05	-.02	.08	.22**	.03	.00	.14*	.16*	.53**	-.27**	.42**	-.18**	1								
18. Negative valence	.15*	-.06	.15*	.13	.00	.05	-.06	-.15*	-.05	.08	.13	-.15*	-.27**	-.23**	-.38**	.44**	-.12	1							
19. Dispositional Optimism	.19**	-.07	-.30**	-.34**	.16*	-.16*	.11	.23**	.03	-.05	.17*	.13	.31**	.13*	.18**	.28**	.36**	-.18**	1						
20. Structural support	-.03	-.08	-.09	-.10	.05	-.02	.11	.09	-.00	-.09	-.10	.11	.02	-.05	-.02	-.02	-.01	-.06	.20**	1					
21. Emotional/info support	-.29**	-.12	-.07	-.07	.17*	-.15*	.19**	.07	.03	-.15*	-.02	.33*	.15*	.04	.18**	-.11	-.02	-.21**	.13	.30**	1				
22. Positive interaction	-.24**	-.18**	-.11	-.10	.13	-.18**	.16*	.16*	.06	-.14	-.05	.30*	.21**	.09	.12	-.09	.07	-.19**	.12	.29**	.78**	1			
23. Affectionate support	-.19**	-.12	-.13*	-.11	.12	-.15*	.15	.15*	-.00	-.14*	-.08	.27*	.19**	.12	.14*	-.19**	.02	-.28**	.16*	.29**	.77**	.78**	1		
24. Tangible support	-.21**	-.02	-.15*	-.08	.06	-.10	.10	.12	.02	-.09	-.03	.24**	.09	.00	.15	-.16	.04	-.28**	.13*	.29**	.72**	.63**	.69**	1	
25. Functional support	-.28**	-.12	-.12	-.09	.14*	-.16	.18**	.13	.03	-.15*	-.04	.32**	.17**	.06	.17**	-.14*	.02	-.26**	.15*	.33**	.95**	.88**	.88**	.84**	1

Note. For all correlations $N = 230$, *$p < .05$, ** $p < .01$

Age was significantly and positively correlated with conscientiousness (r = .22, p < .05), openness to experience (r = .17, p < .01), and negative valence (r = .15, p < .01), optimism (r = .19, p < .05). Age was significantly and negatively correlated with seriousness (r = -.22, p < .05), BSE benefit (r = .15, p < .01), mammography benefit (r = -.18, p < .05), neuroticism (r = -.15, p < .01), emotional/informational support (r = -.29, p < .05), positive interaction (r = -.24, p < .05), affectionate support (r = -.10, p < .05), tangible support (r = -.21, p < .05), and functional support (r = -.28, p < .05).

Compared with age, menarche age was correlated with fewer variables. It was significantly and positively correlated with seriousness (r = .14, p < .01), and conscientiousness (r = .13, p < .01). Menarche age was significantly and negatively correlated with neuroticism (r = -.17, p < .01), and positive interaction (r = -.18, p < .05). The correlations among other dependent variables can be seen from Table 24.

3.2.4. *Nonparametric Correlations of BSE, and Mammography*

In order to see whether there was a correlation between the number of friends or relatives with breast cancer, and BSE, CBE, mammography performance, and breast cancer protection, Spearman's ρ was computed. First, participants with a friend or relative who had breast cancer were calculated. Out of 230 participants, 133 participants indicated that at least one of their friends and/or relatives had breast cancer. They were merged into one variable named as "the number of acquaintances" (mean = .58, *SD* = .58, range = 0—3) and each cell represented the number of friends/relatives with breast cancer. Then, since this new variable was a continuous one, Spearman's ρ was employed. The results suggested that acquaintance was significantly and positively correlated with BSE (r_s = .213, p < .01), CBE (r_s = .258, p < .01), mammography performance (r_s = .189, p < .01), and breast cancer protection (r_s = .299, p < .01). Therefore, it could be inferred that as the number of acquaintances increases, people were more likely to perform breast cancer screening, BSE, CBE or more likely to have mammography (See Table 25).

Table 25. *Non-parametric Correlation Coefficients between The Number of Friends/Relatives with Breast Cancer, and BSE, CBE, Mammography and Breast Cancer Protection.*

	The number of friends/relatives with breast cancer
1. The number of friends /relatives with breast cancer	1
2. BSE	.213*
3. CBE	.258*
4. Mammography	.189*
5. Breast cancer protection	.299*

Note. For all correlations $N = 230$, $*p < .01$

3.2.5. *Predictors of BSE*

A hierarchical logistic regression analysis was employed to predict BSE group membership with personality characteristics, the HBM components for BSE, breast cancer fear and social support (See Table 26). At the first step personality characteristics, that is extraversion, conscientiousness, neuroticism, and dispositional optimism were entered. At the second step the HBM components specific for BSE namely susceptibility, seriousness, BSE benefit, BSE barrier, BSE confidence and health motivation were entered. At the third step breast cancer fear was added. At the last step social support measures were added. In the null model for BSE, the Wald statistics was significant ($W_j = 10.69$, $p < .001$), which suggested that the model was no better than predicting by chance. The classification table showed that 60.9 % of the cases could be classified by chance. The first step variables explained 2 % of the group membership. Hosmer and Lemeshow test was not significant ($\chi^2 = 3.56$, $p > .05$) suggesting the goodness of fit. Among the first step variables, none of them were able to predict membership (Nagelkerke $R^2 = .02$, $\chi^2 (4, 230) = 2.73$, $p > .05$). The second step variables significantly explained 31 % of the group membership (Nagelkerke $R^2 = .31$, $\chi^2 (10, 230) = 60.74$, $p < .001$). Hosmer and Lemeshow test was not significant ($\chi^2 = 4.439$, $p > .05$) suggesting the goodness of fit. Among the second step variables, confidence ($W_j = 20.10$, $p < .001$), and susceptibility ($W_j = 3.76.$, $p < .05$) were significant predictors of group

membership. The third (Nagelkerke R^2 = .32, χ^2 (11, 230) = 60.98, p > .05) and fourth step variables (Nagelkerke R^2 = .32, χ^2 (13, 230) = 62.049, p > .05) were not significant predictors of the group membership. At the third step Hosmer and Lemeshow test was not significant (χ^2 =5.078, p > .05) suggesting the goodness of fit. For the fourth step Hosmer and Lemeshow test was not significant (χ^2 = 6.429, p > .05), too; suggesting the goodness of fit. After all variables were entered, the classification table revealed that variables in the equation were able to classify 73.9 % of the cases correctly. According to the odds ratios, confidence (B = 1.137) was the most important predictor of the model, which meant that women with higher levels of confidence had 1.137 times higher likelihood of being in BSE performance group than women with lower levels of confidence. The second predictor of being in BSE performance group or not was susceptibility (B = 1.096). That is, women with higher levels of susceptibility had 1.096 times higher likelihood of being in BSE performance group than women with lower levels of susceptibility.

Table 26. *Summary of the Hierarchical Logistic Regression Variables Predicting BSE*

	Model 1			Model 2			Model 3			Model 4		
Variable	*Wj*	*B*	*p*	*Wj*	*B*	*p*	*Wj*	*B*	*p*	*Wj*	*B*	*p*
Extraversion	1.375	1.03	.24									
Conscientiousness	.724	.97	. 395									
Neuroticism	.144	1.00	.70									
D. optimism	.476	1.03	.49									
Susceptibility				3.757	1.096*	.53						
Seriousness				.143	1.013	.70						
BSE benefit				.133	.98	.72						
BSE barrier				2.444	.925	.118						
BSE confidence				20.097	1.137**	.00						
Health motivation				1.54	1.062	.215						
Breast cancer fear							.239	.985	.625			
Structural support										1.03	.96	.31
Functional support										.094	1.004	.76
Nagelkerke R^2		.02			.31			.32			.32	
χ^2		2.73^{ns}			60.74**			60.98^{ns}			62.049^{ns}	

Note. *p < .05, **p < .001.

3.2.6. *Predictors of Mammography*

A hierarchical logistic regression analysis was employed to predict BSE group membership with personality characteristics, the HBM components for mammography, and mammography self efficacy, breast cancer fear and social support (See Table 27). At the first step big 5 personality characteristics, that is extraversion, conscientiousness, neuroticism, and dispositional optimism were entered. At the second step the HBM components specific for mammography namely susceptibility, seriousness, mammography benefit, mammography barrier, and mammography self efficacy were entered. At the third step breast cancer fear was added. At the last step social support measures were added. In the null model for mammography, the Wald statistics was significant ($W_j = 88.91$, $p < .001$), which suggested that the model was no better than predicting by chance. The classification table showed that 85.2 % of the cases could be classified by chance. The first step variables explained 2 % of the group membership (Nagelkerke $R^2 = .02$, $\chi^2 (4, 230) = 3.63$, $p > .05$). Hosmer and Lemeshow test was not significant ($\chi^2 = 12.834$, $p > .05$) suggesting the goodness of fit. Among the first step variables, none of them were able to predict mammography group membership. The second step variables explained 7 % of the group membership (Nagelkerke $R^2 = .07$, $\chi^2 (10, 230) = 9.202$, $p > .05$). Hosmer and Lemeshow test was not significant ($\chi^2 = 7.553$, $p > .05$) suggesting the goodness of fit. Among the second step variables, none of them were able to predict the mammography group membership. The third step variables explained 7 % of the group membership (Nagelkerke $R^2 = .07$, $\chi^2 (11, 230) = 9.238$, $p > .05$). Hosmer and Lemeshow test was not significant ($\chi^2 = 5.989$, $p > .05$) suggesting the goodness of fit. None of the third step variables were able to predict the mammography group membership. The fourth step variables significantly explained 22 % of the group membership (Nagelkerke $R^2 = .22$, $\chi^2 (13, 230) = 30.884$, $p < .01$). Hosmer and Lemeshow test was not significant ($\chi^2 = 8.055$, $p > .05$) suggesting the goodness of fit. Functional support was able to predict mammography group membership ($W_j = 18.41$, $p < .001$). After all variables were entered, the classification table revealed that variables in the equation were able to

classify 85.7 % of the cases. According to the odds ratios, functional support (*B* = .930) was the most important predictor of the model, which meant that women with higher levels of functional support had .93 times higher likelihood of being in mammography performance group than women with lower levels of functional support.

Table 27. *Summary of the Hierarchical Logistic Regression Variables Predicting Mammography*

	Model 1			Model 2			Model 3			Model 4		
Variable	W_j	*B*	*p*	W_j	*B*	*p*	W_j	*B*	*p*	W_j	*B*	*p*
Extraversion	.317	.981	.574									
Conscientiousness	.014	1.004	. 907									
Neuroticism	.80	.972	.371									
D. optimism	1.45	1.073	.229									
Susceptibility				1.61	1.072	.204						
Seriousness				1.868	.945	.172						
Mammography benefit				.014	.993	.904						
Mammography barrier				.001	1.002	.979						
Mammography self efficacy				.323	0.57	.00						
Health motivation				1.426	1.077	.232						
Breast cancer fear							.036	.993	.849			
Structural support										1.358	1.068	.24
Functional support										18.406	.93**	.00
Nagelkerke R^2		.02			.07			.07			.22	
χ^2		3.63^{ns}			9.202^{ns}			9.238^{ns}			30.884*	

Note. $*p < .01$, $**p < .001$

CHAPTER IV

DISCUSSION

Many factors determining several health behaviors have been under research to improve screening programs and thereby, the quality of medical services. Since cancer is a chronic condition causing disability and mortality worldwide, preventive programs have been organized to arouse public opinion and awareness regarding the disease. Among all cancer types, breast cancer is the most frequent cancer type seen in women (Parkin, Bray, Ferlay, & Pisani, 2005). Due to its likelihood of good prognosis as long as it is detected at an early phase, implementation of the screening programs have gained importance. Breast cancer screening methods were breast self-examination (BSE), clinical breast examination (CBE), mammography, and other methods such as breast ultrasound. One of the leading theories in explaining the factors related with breast cancer screening behaviors is the Health Belief Model, which suggests that personal beliefs and perceptions are important in determining health seeking behavior (Champion & Skinner, 2008). As one of the objectives of this study, the effect of the HBM on breast cancer screening behaviors, primarily on BSE and mammography was examined. Other than the HBM, this study intended to find out other psychosocial correlates of these breast cancer screening methods, namely personality characteristics, breast cancer fear, social support, and mammography self efficacy. The results of the study, clinical implications, and the limitations of the study and recommendations for further studies were discussed in the succeeding sections.

4.1. *The Results of the Study*

The results of the study were discussed under three headings: the effect of demographic variables, predictors and correlates of BSE and mammography, and testing the notions of the HBM regarding the screening behaviors.

In predicting the factors related to breast cancer screening, the HBM included eight components. Champion developed a 53-item scale to assess the distinctive ability of the HBM for breast cancer screening behaviors (1999). The scale was adapted to Turkish by Secginli and Nahcivan (2004). The present study did not only test the HBM in relation to breast cancer, but also did examine other psychological and social factors which could be related with breast cancer screening behaviors. One of these factors, social support, was measured by the MOS Social Support survey, originally developed by Sherbourne and Stewart (1991). In order to test hypotheses of the present study, study 1 was conducted to attain the adaptation of the MOS Social Support survey to Turkish culture. The internal consistency reliability of the whole scale was found as .95 and of the subscales ranged between .86 and .95 for the Turkish adaptation. The MOS Social Support survey was correlated significantly and positively with MSPSS and ISSB, and it was also significantly and negatively correlated with U.C.L.A Loneliness Scale and SCL-90-revised, which pointed out the convergent and divergent validity values of the scale. These reliability and validity values were similar to the adaptation of the same survey to Brazilian Portuguese (Soares et al., 2012) and to French (Robitaille, Orpana, & McIntosh, 2011). Thus, the results suggested that Turkish version of the MOS Social Support survey is a psychometrically sound instrument.

In study 2, all dependent variables were examined with regard to their relationship with independent variables. At this point, the confidence subscale of the HBM was referred as BSE confidence since the items of the subscale was related only with BSE rather than mammography. To measure confidence in mammography, an additional mammography self efficacy scale was used, which was originally developed by the developer of the HBM itself (Champion, Skinner, & Menon, 2005).

4.1.1. *The Effects of Demographic Variables*

When married and single (single, divorced and widow) participants were compared and contrasted, it was seen that married participants differ from single participants in terms of some of the personality characteristics. The results suggested that married participants were more conscientious; whereas they were less neurotic and had less negative valence than their single counterparts. This result might be occurred due to the necessities of enduring a relationship. One needs to have responsibility and to make positive comments rather than negative criticisms to endure a marriage and avoid divorce (Claxton, O'Rouke, Smith, & DeLongis, 2012). Marital status did not have a relationship with social support although it was thought to be related with increased number of friends/relatives. The reason lying behind this result was in line with the explanations of the developers of the MOS Social Support survey (Sherbourne & Stewart, 1991). These authors suggested that marital status was not related with the quantity of close friends/relatives (structural support) and was moderately related with functional social support (Sherbourne & Stewart, 1991). Neither age nor marital status, as the results demonstrated, had an effect on breast cancer screening preferences, or on any of the HBM constructs. This result is similar to the results of other studies (Allen, Sorensen, Stoddard, Peterson, & Colditz, 1999; Farmer, Reddick, D'Agostino, & Jackson, 2007). Allen, Sorensen, Stoddard, Peterson, and Colditz (1999) found that having screening or not was unrelated with age, job status and marital status, rather health care provider recommendation was able to predict mammography and CBE. Likewise, Farmer, Reddick, D'Agostino, and Jackson (2007) concluded that education and dispositional optimism were related with perceived barriers, whereas social support and dispositional optimism were related with benefits for mammography; however marital status was not.

Another demographic variable of which effect was examined on the study variables was working status. This variable did only have an effect on one of the social support subscales, namely emotional/informational support. It was concluded that housewives and non-working participants were more likely have low levels of

emotional/informational support. Similar to marital status and age, employment did not have an effect on either breast cancer screening methods or the HBM constructs, which is in line with other studies (Allen, Sorensen, Stoddard, Peterson, & Colditz, 1999; Messina et al., 2004). Allen, Sorensen, Stoddard, Peterson, and Colditz (1999) stressed the importance of provider recommendation for screening and the women's belief about the approval of screening in their close social network; they did not find a difference regarding screening in women who had different job status. Messina et al. (2004) put forward that marital status and working status were not related with CBE rather older age, lower income and not having medical insurance were related with CBE.

Having gone through menopause was included in the demographic information sheet. It was found to be related with three HBM constructs: seriousness, BSE benefit, and mammography benefit. Additionally, menopause experience had effects on personality characteristics and social support measures. The participants who have gone through menopause were likely to perceive cancer as less serious, to perceive less benefit from BSE and mammography than the ones who have not gone through menopause. These participants did also perceive less emotional/informational, affectionate, and functional support than the ones who have not gone through menopause. On the contrary, the women who went through menopause were more likely to be conscientious, open to new experiences, and optimist; and they were more likely to have higher negative valence. These findings suggested that social support resources of the women who went through menopause may decline; or after entering menopause women might not perceive social support as much as they did before the menopause. Since data for these women were not available for pre and post menopause periods, the reason behind this result could not be ensured. Another factor which could be related with lower levels of social support for the women who went through menopause could be increasing age. With advancing age, social support resources may decline. The women who entered menopause, in addition, perceive less seriousness, and find less benefit in BSE and mammography, which could be explained by the decreased exposure of estrogen

and progesterone levels due to the menopause. The literature suggests as the extent of breast mitotic activity increases, the breast cancer risk is increased. Breast mitotic activity is due to the contribution of estrogen and progesterone exposure during the luteal phase of the menstrual cycle. Therefore, it could be inferred that having a late menopause age increases breast cancer risk (Ferguson & Anderson, 1981) because this means undergoing longer time of estrogen and progesterone exposure. Hence, in line with this argument, women might think that since their estrogen and progesterone levels declined with menopause they would be less vulnerable to breast cancer, thereby they might perceive breast cancer as a less serious condition, and might find BSE and mammography less beneficial for themselves.

In line with the argument above, the women who indicated they used birth control pills reported that they perceive more benefit from mammography as compared to their counterparts who did not use birth control pills. As the literature for oral contraceptives put forward, use of oral contraceptives for longer duration or at an early age is a risk factor for breast cancer (Romieu, Berlin, & Colditz, 1990; Ursin, Ross, Sullivan-Halley, Hanisch, Henderson, & Bernstein, 1998; Malone, Daling, & Weiss, 1993). Therefore, the women who used birth control pills might feel themselves susceptible for breast cancer and might find mammography as beneficial for themselves. If this explanation is feasible, in addition to mammography benefit, susceptibility was expected to be higher in these women; however, it was not. This might be due to the measurement ability of the susceptibility subscale.

Women who had breast cancer knowledge indicated they had lower levels of BSE and mammography barriers, breast cancer fear; whereas they reported they had higher levels of BSE confidence, and mammography self efficacy. Assuming that the ones who had breast cancer knowledge protect themselves from this condition with screening, the proposal of the HBM was confirmed (Champion & Skinner, 2008). Therefore, in Turkey the intervention and protection programs gain importance in the light of these results and the cumulative literature supporting them

(Ceber, Yücel, Mermer, & Özentürk, 2009; Karayurt, Özmen, & Çakmakçı-Çetinkaya, 2008).

Another demographic variable which was related with the HBM was breast cancer protection practices. The participants who indicated that they practiced at least one of the breast cancer screenings were more likely to perceive more BSE and mammography benefit, BSE confidence, mammography self efficacy, and health motivation than those who did not practice screening for breast cancer. Moreover, supporting these results, the women who practiced breast cancer screening perceived less BSE and mammography barriers than their non-practicing counterparts. These results supported the HBM formulation by showing high perceived benefit, confidence, and health motivation; and low BSE and mammography barrier are related with screening practices (Champion & Skinner, 2008). In addition to these, women who performed breast cancer screening were also higher on openness to new experiences and dispositional optimism characteristics, which might be directed these women to practice some new procedures; introducing screening procedure in their lives, and getting used to it. Therefore, these results could support the stance of the researchers who are in favor of the beneficial effect of dispositional optimism for preventive health behaviors like breast cancer screening (O'Brien et al., 1995; Lai et al., 2004, Henderson et al., 2008).

In addition to above mentioned questions, participants were asked whether they used cigarette (Hirose et al.,1995; Gammon et al, 1999; Wrensch et al., 2003; Li, Daling, Porter, Tang, & Malone, 2009), alcohol (Hirose et al.,1995; Wrensch et al., 2003; Li, Daling, Porter, Tang, & Malone, 2009) whether they did sports and maintained balanced diet (Hirose et al.,1995; Li, Daling, Porter, Tang, & Malone, 2009), which are all related with breast carcinogenesis. Cigarette using participants were more likely to have higher levels of neuroticism and parallel to this, lower levels of tangible support than those who reported they no smoking behavior. However, participants who used cigarette and who did not were differentiated neither on the HBM constructs nor on breast cancer screening practices. Participants

who used alcohol reported themselves as more susceptible, had more emotional/informational, and functional support; however they reported lower conscientious than abstinent participants. High social support of the alcohol using participants' could be advocated by the argument of Rosenquist, Murabito, Fowler, and Christakis (2010). These researchers claimed that behavior of the close network of a person (friends and relatives) contribute to the maintenance of alcohol consumption. Hence, with the accompanying alcohol consuming social network and the functional support they provided, these participants might continue drinking. Obesity occurrence which is closely linked with malnutrition and sedentary lifestyle was counted as a breast cancer risk factor (Hirose et al., 1995; Li, Daling, Porter, Tang, & Malone, 2009). Participants with high health motivation and high extraversion were more likely to be in the group who reported doing sports than others. Participants who reported they maintained balanced nutrition were more likely to have higher health motivation, and dispositional optimism; and to have lower levels of seriousness and neuroticism. These two health behaviors were expected to be related with health motivation and the results confirmed this. In addition, these behaviors were found to be relevant with positive personality characteristics rather than negative ones.

Education level mattered in the HBM constructs, personality characteristics, and social support. Mostly, participants with at most secondary level education and high school degree were differentiated from those with university or a higher level degree. High school graduates perceived more BSE barrier; less mammography benefit and mammography self efficacy than the participants with postgraduate level education. Taking this information into account, it can be suggested that due to differences in employment, social, and medical facilities between the high school graduates and participants with university and higher education, high school graduates might feel themselves as more susceptible to breast cancer, reported more barriers for BSE and felt incompatible to have mammography since they were not informed how they could have a free mammogram (Miller & Champion, 1997) or cannot afford having a mammogram screening (Stein, Fox, & Murata, 1991). This

explanation was further supported by the social support differences between high school graduates and participants with postgraduate level education. High school graduates reported that they had lower levels of emotional/informational and functional support, which strengthens the belief that they were not in an informative environment for breast cancer (Yilmaz, Güler, Bekar, & Güler, 2011). Participants with at most secondary level education reported they were high on conscientiousness, agreeableness, and openness to new experiences than participants with university or higher education. These might be the result of the fact that (1) high education is found to be related with higher likelihood of breast cancer risk (Menvielle et al., 2006; Naieni et al., 2007; Çam & Babacan-Gümüş, 2009), (2) women with less education are less likely to practice screening behaviors (Juon, Seo, & Kim, 2002), and (3) women with higher education have more access to more medical knowledge and are less traditional, so they accept invitations for free screening (Straughan & Seow, 2000). The inconsistency between feeling more conscientiousness, agreeableness and openness to new experiences and being less likely to report screening could be rationalized by high barriers such as less access to physicians (Miller & Champion, 1997).

Socioeconomic status showed its effect on agreeableness and positive interaction kind of social support. High SES participants reported they were low on agreeableness than their low SES counterparts. Middle SES participants reported they had more positive interactions than low SES participants. Although SES is stated to be linked with screening behavior in the literature (Stein, Fox, & Murata, 1991; Danø, Andersen, Ewertz, Petersen, & Lynge, 2003; Hussain, Lenner, Sundquist, & Hemminki, 2008; Fujino et al., 2008), some researchers take an opposite stance and argue that SES is not related with breast cancer screening (Van Loon, Goldbohm, & Van Den Brandth, 1994). The results of the present study supported the latter researchers' argument.

4.1.2. *Predictors and Correlates of BSE and Mammography*

Two hierarchical logistic regression analyses were carried out for BSE and mammography. Big 5 personality traits and dispositional optimism were entered at the first step. The HBM factors and self efficacy were entered at the second step. Breast cancer fear was added at the third step; and for the last step social support measures were added to the equation. For BSE, hierarchical logistic regression yielded no significant predictors but BSE confidence and susceptibility from the HBM, which were entered to the equation at the second step. Therefore, it can be concluded that performance of BSE can be related with feeling susceptible to breast cancer, and feeling confident in applying BSE procedure. For mammography, the hierarchical logistic analysis resulted that only functional support, which was entered at the fourth step was significant. Therefore, it can be concluded that perceiving functional social support, not the number of social support resources, has a predictive ability for mammography to be executed.

Upon the results of these analyses, it was seen that variables entered to the regression equation were not able to determine group membership such as practicing BSE and not practicing BSE, or having mammography or not. A variable named "the number of acquaintances with breast cancer" was computed by adding the number of friends/relatives with breast cancer. Then non-parametric correlation coefficients were computed with BSE, CBE, mammography, and breast cancer protection. Spearman's ρ values were all significant at $p < .01$ level between the number of acquaintances, and BSE, CBE, mammography, and breast cancer protection. In other words, these results suggested that as the number of acquaintances with breast cancer increases, participants had higher likelihood of performing one type of breast cancer screening. That is to say, there was a strong relationship between having at least one of friends/relatives with breast cancer and practicing breast cancer screening for oneself. This supports one of the established results of other studies in the literature, familial breast cancer history is a risk factor for breast cancer due to genetic contributions and transmission of some genes such as $BRCA_1$ and $BRCA_2$ genes (Hirose et al., 1995; McPherson, Steel, & Dixon, 2000; Parkin, Bray, Ferlay, & Pisani, 2005).

4.1.3. *The Differences between BSE and Mammography Performers in terms of the HBM*

Participants who practiced BSE and who did not significantly differentiated on BSE benefit, BSE barrier, BSE confidence, and health motivation according to the independent-samples t-test analyses. The women who practiced BSE had higher levels of confidence and health motivation; and they perceived higher levels of benefit and fewer barriers. The HBM offered susceptibility and seriousness in addition to abovementioned four constructs; however, susceptibility and seriousness were not significantly differentiated between BSE practicing and non-practicing women. In fact, many studies concluded that seriousness is not a significant predictor of BSE in several cultures such as China (Lu, 1995), Korea (Eun-Hyun, 2003), Jordan (Petro-Nustas & Mikhail, 2002), and the U.S. (Sortet & Banks, 1997; Champion, 1987). The reason for this was explained by Eun-Hyun (2003) as seriousness might not predict breast cancer screening since many women regardless of their breast cancer screening performance perceive breast cancer as a serious event and find breast cancer affecting many domains of life in a negative way. BSE and mammography performance groups, in a similar vein, did not significantly differ on susceptibility in the current study. However, it was found to be related with the previous BSE performance (Eun-Hyun, 2003¸ Champion, 1993) and the intention to perform BSE in future (Petro-Nustas & Mikhail, 2002). The reason for the negative result for susceptibility to affect breast cancer screening might be related with its measurement ability.

As many studies suggested, the women who perceive more BSE benefit are more likely to practice it was confirmed by the results of the present study (Secginli & Nahcivan, 2003; Champion, 1993; Holm, Frank, & Curtin, 1999). Supportively, women who practiced BSE reported that perceived lower levels of BSE barrier than their counterparts who did not practice it. This result was in line with Champion's argument on the importance of decreasing levels of BSE barriers and the increasing likelihood of BSE practice (1993). In addition to benefits and barriers, women who practiced BSE and who did not had significantly different on BSE confidences. BSE

performing women indicated that they perceived more confidence than others; therefore, the HBM notions specific for BSE were confirmed (Champion, & Skinner, 2008).

For mammography behavior, the results of the present study did not support the effectiveness of any of the HBM constructs but the effect of social support. Functional support in general and with its subscales (emotional/informational, affectionate, tangible support, and positive interactions) had significant associations with mammography screening. This result is similar to the results of the study of Canbulat and Uzun (2008). These researchers were not able to find any relationship between the HBM and mammography screening except for susceptibility. However, as discussed before, BSE performance groups were not successfully differentiated on susceptibility (Petro-Nustas & Mikhail, 2002; Eun-Hyun, 2003), and this might be valid for mammography, as well. Therefore, it was concluded that above the assumptions of the HBM, perceived social support has a critical importance in mammography screening behavior; therefore, an informative and supportive environment might encourage women to have mammography (Allen, Sorensen, Stoddard, Peterson, & Colditz, 1999).

For CBE, the results yielded that susceptibility, mammography barrier and mammography self efficacy were significant in the determination of CBE groups membership. Yilmaz, Güler, Bekar, and Güler (2011) suggested that the HBM constructs for BSE may be similar to CBE; however the results of the current study did not support their views. Instead, CBE groups significantly differed on constructs specific for mammography: mammography barrier and mammography self efficacy. This might be advocated by the similar application places for both screening types; both of them are performed in hospitals.

When other studies in Turkish literature were reviewed, it was seen that there is variability in their results. Many of them entreated BSE performance rather than mammography. For instance, Ceber, Yücel, Mermer, and Özentürk (2009) found BSE benefit and barrier as significantly related with for BSE in academicians.

Canbulat and Uzun conducted a research in health workers and they concluded that susceptibility, health motivation, BSE benefit, and BSE self efficacy were significantly differed in BSE groups (2008). Similar to this, Karayurt, Coşkun, and Cerit carried out their research with a nurse sample. Their results showed susceptibility, BSE benefit, BSE barrier, health motivation and BSE confidence as important variables in differentiating BSE groups (2008). In a less specific group, Gürsoy et al. (2011) concluded that BSE confidence and BSE barriers were important determinants of BSE group membership. Likewise, in a female workers sample, Aydin-Avci (2008) concluded that women who performed BSE and who did not are significantly different on health motivation and BSE confidence. These variations in results could be due to different sample characteristics; in other words, each study contained samples with different levels of breast cancer information and awareness, different SES etc. In addition, sample sizes of each study were also different from each other.

4.2. *Clinical Implications of the Study*

As it was stressed in the breast cancer screening literature in Turkey, knowledge about BSE and mammography contributes to the performance, the maintenance, and regularity of BSE and mammography (Yilmaz, Güler, Bekar, & Güler, 2011; Aydin-Avci, 2008; Karayurt, Çoşkun, & Cerit, 2008). Moreover, as Gürsoy et al. (2011) pointed out, the knowledge about BSE was found to be equipping women to perform CBE and mammography; thereby, these authors underlined the importance of education. Participants of the current study were provided brochures which were prepared by Turkish Association for Cancer Prevention and Control with the support of Avon Cosmetics Inc. These brochures were about how to perform breast self examination, how to have a mammography and facts about breast cancer. Therefore, the participants were supported some brief and useful information about breast cancer and screening.

As the results suggested, in addition to demographic characteristics, high perceived benefit from the action, low perceived barrier to conduct the action, high

confidence to execute the action, and high level of motivation to stay healthy contribute to BSE performance. For mammography, perceived functional support had a place in explaining mammogram screening. Since BSE requires a primary education regarding the commonest female malignancy and it is a self administered procedure, the youth could be offered informative and preventive programs regarding breast cancer and BSE, which is recommended to be performed after age 20 by ACS and Turkish Ministry of Health. Since nowadays, TV channels broadcast public spots prepared by several Turkish Ministries regarding many preventable environmental concerns and donation for the ones who need help etc., there could be some short informative notes on screens to inform women from any kind of SES, since media is an easy way to attain several parts of the community. If women would be provided information, there would be public awareness and social support on mammography screening, which may facilitate women to visit hospitals and especially Cancer Early Diagnosis, Screening, and Education Centers (Kanser Erken Teşhis, Tarama ve Eğitim Merkezi (KETEM), in Turkish) to screen their breasts. Although there have been some campaigns aiming above mentioned targets, accessibleness of the campaigns is important. Thus, media should be incorporated with the campaigns of the credible resources such as Turkish Ministry of Health (Gürsoy et al., 2011).

In the scope of the current study, the MOS Social Support survey (Sherbourne & Steward, 1991), a multidimensional social support measure was adapted to Turkish. This scale was developed with an objective of being applicable to patients with chronic conditions; therefore, the items were designed to be relatively short and easy to comprehend. This measurement tool can be administered in any clinic for the chronically ill patients; therefore the availability of perceived social support can be assessed.

4.3. *Limitations of the Study and Recommendations for Further Studies*

The present study was conducted with female participants; therefore, the results can only be generalized to women. Breast cancer could also be seen in

males; however, the current study included females and the results should only be interpreted for them. The scope of the generalizability was additionally precluded by the sample size. Further studies can be carried out with much larger sample sizes. Third, the data for the present study were gathered from two resources, with booklets and online data collection. Since internet surfing is more common among the younger than the elder, it may lead to some sample differences. To avoid any differences between participants from either group, one kind of resource can be preferred for further studies. Fourth, since the present study was a cross sectional study and the sampling was performed by convenience sampling, cause-effect conclusions cannot be drawn. Future studies may design a longitudinal research and therefore can keep track of breast cancer screening frequency of the participants that may help deducing causal effects. For this, hospital support will be needed.

Last, the hierarchical logistic regression equations for screening behaviors were not significant for all steps. This could be interpreted as personality characteristics, the HBM, breast cancer fear and social support might not predict BSE/ mammography group membership. However, when independent-samples t test analyses were run, these independent variables were significantly differentiated between BSE/mammography groups except for breast cancer fear, the literature of which proposes argumentative results (Champion, 2004). This might be explained by the similar and undistinguishable fear existed between the women who perform screening and the women who did not. It was similar to the case of seriousness discussed above; in other words, both groups may perceive breast cancer fear with similar levels. In conclusion, these independent variables could be important in differentiating women performing breast cancer screening as suggested by Champion and Skinner (2008), but they might not be powerful enough to predict BSE/mammography group membership. Instead, as it was discussed above, family history or the number of friends with breast cancer may have a strong relationship with BSE/ mammography group membership. Considering this, future studies may design the scope of the research accordingly.

4.4. *Conclusion*

The findings of the current study supported the HBM proposed by (Champion, & Skinner, 2008) for BSE behavior except for seriousness and susceptibility constructs. Rather than the HBM, functional social support has strong association for mammogram screening. Breast cancer fear did not show any significant associations with screening behaviors. However, other independent variables and some demographic variables were important in determining women who practice breast cancer screening and who do not.

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APPENDICES

APPENDIX A: Study 1 Informed Consent

Bu çalışma Orta Doğu Teknik Üniversitesi, Psikoloji Bölümü, Klinik Psikoloji Yüksek Lisans Tez çalışması kapsamında ilgili program öğrencisi Psk. Tuğba Yılmaz ve süpervizörü Doç. Dr. Özlem Bozo tarafından gerçekleştirilmektedir. Çalışma Medical Outcomes Study Sosyal Destek Ölçeği'nin (Sherbourne ve Steward, 1991) Türkçe'ye çevirisinin gerçekleştirmeyi amaçlamaktadır. Çalışmaya katılım tamamen gönüllülük esasına dayanmaktadır. Anketlerin doldurulması için katılımcılardan herhangi bir kişisel bilgi istenmemektedir. Sorulara vereceğiniz cevaplar tamamen gizli tutulacak ve kimse ile paylaşılmayacaktır. Toplanan veriler sadece araştırmacılar tarafından analiz edilerek, tezin yazımı ve bilimsel kongre ve makalelerin hazırlanmasında kullanılacaktır. Çalışmada yer alan tüm soruların cevaplanması yaklaşık olarak 20 dakika sürmektedir. Anketlerde yer alan sorular katılımcılarda herhangi bir psikolojik ya da fizyolojik stres yaratmamaktadır. Ancak soruların doldurulması esnasında herhangi bir neden ile rahatsızlık hissederseniz, çalışmadan çekilebilirsiniz. Anketlerin doldurulmasından sonra çalışma hakkında herhangi bir sorunuz varsa bunlar araştırmacılar tarafından cevaplanacaktır. Çalışma ile ilgili bilgi almak istemeniz halinde Psk. Tuğba Yılmaz (email: tugba.yilmaz.psy@gmail.com; Tel: 0312 210 34 14) ile iletişime geçebilirsiniz. Katılımınız için teşekkür ederiz.

ODTÜ öğrencisi iseniz lütfen öğrenci numaranızı yazınız:

Çalışmanın tekrar çalışmasına katılmak istiyorsanız lütfen e-posta adresini yazınız:

Cinsiyetiniz: kadın ___
erkek ___

Yaşınız:

Medeni durumunuz: bekar- ilişkisi yok ___
bekar- ilişkisi var ___
evli ___
boşanmış ___
dul ___

Eğitim durumunuz: ilköğretim mezunu ___
lise mezunu ___
üniversite mezunu ___
yüksek lisans mezunu ___
doktora mezunu ___

APPENDIX B: The MOS Social Support Survey

Aşağıda size verilebilecek destekler ile ilgili sorular yer almaktadır.

1.Yaklaşık olarak kaç tane (yanındayken rahat hissettiğiniz ve aklınızdan geçenleri konuşabildiğiniz) yakın arkadaşınız ve yakın akrabanız vardır?

Yakın arkadaş ve yakın akrabalarınızın sayısını yazınız: _____

Bazen diğer insanların yanımızda olmasını, bize arkadaşlık etmesini ya da başka şekillerde bize destek olmasını isteriz. İhtiyacınız olduğunda aşağıdaki destek türlerini ne sıklıkla alabileceğinizi düşünüyorsunuz?

Her satırdan bir numarayı daire içine alınız.

	Hiçbir zaman	Nadiren	Bazen	Çoğunlukla	Her zaman
2. Yatağa düştüğünüzde size yardım edecek birisi	1	2	3	4	5
3. Konuşmaya ihtiyacınız olduğunda sizi dinleyeceğine güveneceğiniz birisi	1	2	3	4	5
4. Bir sorunla karşılaştığınızda size tavsiye verecek birisi	1	2	3	4	5
5. İhtiyaç duyduğunuzda sizi doktora götürecek birisi	1	2	3	4	5
6. Size sevgi ve şefkat gösteren birisi	1	2	3	4	5
7. Birlikte iyi vakit geçireceğiniz birisi	1	2	3	4	5
8. Kendiniz ya da problemleriniz hakkında konuşabileceğiniz ya da sır verebileceğini birisi	1	2	3	4	5
9. Güvenip içinizi dökebileceğiniz ya da kendinizden veya sorunlarınızdan bahsedebileceğiniz birisi	1	2	3	4	5
10. Size sarılacak birisi	1	2	3	4	5
11. Rahatlamak için bir araya gelebileceğiniz birisi	1	2	3	4	5

12. Kendiniz yapamayacak durumda iken size yemek hazırlayacak birisi	1	2	3	4	5
13. Tavsiyesine gerçekten ihtiyaç duyduğunuz birisi	1	2	3	4	5
14. Kafanızı dağıtmak için bir şeyler yapacağınız birisi	1	2	3	4	5
15. Hasta olduğunuzda günlük işlerinizde yardım edecek birisi	1	2	3	4	5
16. En mahrem/kişisel endişe ve korkularınızıpaylaşacağınız birisi	1	2	3	4	5
17. Başvurduğunuzda, kişisel bir probleminizi çözmek için önerilerde bulunacak birisi	1	2	3	4	5
18. Birlikte eğlenceli bir şeyler yapacağınız birisi	1	2	3	4	5
19. Sorunlarınızı anlayan birisi	1	2	3	4	5
20. Kendinizi değerli hissettirecek ve sizi sevecek birisi	1	2	3	4	5

APPENDIX C: SCL-90-R

Aşağıda ***"zaman zaman herkeste olabilecek"*** yakınma ve sorunların bir listesi vardır. Lütfen her birini dikkatlice okuyunuz. Sonra her bir durumun, **bugün de dahil** olmak üzere ***son on beş gün içinde*** sizi ne ölçüde **huzursuz ve tedirgin ettiğini** göz önünde alarak, cevap kağıdında belirtilen tanımlamalardan

(***Hiç / çok az / Orta derecede / Oldukça fazla / İleri derecede*****)** uygun olanın **(*****yalnızca bir seçeneğin*****)** altındaki parantez arasına bir **(X)** işareti koyunuz. Düşüncelerinizi değiştirirseniz ilk yaptığınız işaretlemeyi silmeyi unutmayınız. Lütfen anlamadığınız bir cümle ile karşılaştığınızda uygulamacıya danışınız.

	Hiç	Çok Az	Orta Derece	Oldukça *Fazla*	İleri Derece
1. Baş ağrısı					
2. Sinirlilik ya da içinin titremesi					
3. Zihinden atamadığınız, yineleyici, hoşa gitmeyen düşünceler					
4. Baygınlık veya baş dönmesi					
5. Cinsel arzu veya ilginin kaybı					
6. Başkaları tarafından eleştirilme duygusu					
7. Herhangi bir kimsenin düşüncelerimizi kontrol edebileceği fikri					
8. Sorunlarımızdan pek çoğu için başkalarının suçlanması gerektiği duygusu					
9. Olayları anımsamada güçlük					
10. Dikkatsizlik ve sakarlıkla ilgili endişeler					
11. Kolayca gücenme, rahatsız olma hissi					
12. Göğüs veya kalp bölgesinde ağrılar					
13. Caddelerde veya açık alanlarda korku hissi					
14. Enerjinizde azalma veya yavaşlama hali					
15. Yaşamınızın sonlanması düşünceleri					

16. Başka kişilerin duymadıkları sesleri duyma					
17. Titreme					
18. Çoğu kişiye güvenilmemesi gerektiği hissi					
19. İştah azalması					
20. Kolayca ağlama					
21. Karşı cinsten kişilerle utangaçlık ve rahatsızlık hissi					
22. Tuzağa düşürülmüş veya yakalanmış olma hissi					
23. Bir neden olmaksızın aniden korkuya kapılma					
24. Kontrol edilemeyen öfke patlamaları					
25. Evden dışarı yalnız çıkma korkusu					
26. Olanlar için kendini suçlama					
27. Belin alt kısmında ağrılar					
28. İşlerin yapılmasında erteleme duygusu					
29. Yalnızlık hissi					
30. Karamsarlık hissi					
31. Her şey için çok fazla endişe duyma					
32. Her şeye karşı ilgisizlik hali					
33. Korku hissi					
34. Duygularınızın kolayca incitilebilmesi hali					
35. Diğer insanların sizin özel düşüncelerinizi bilmesi					
36. Başkalarının sizi anlamadığı veya hissedemeyeceği duygusu					
37. Başkalarının sizi sevmediği yada dostça olmayan davranışlar gösterdiği hissi					
38. İşlerin doğru yapıldığından emin olabilmek için çok yavaş yapma					
39. Kabin çok hızlı çarpması					
40. Bulantı veya midede rahatsızlık hissi					
41. Kendini başkalarından aşağı görme					
42. Adale (kas) ağrıları					

43. Başkalarının sizi gözlediği veya hakkınızda konuştuğu hissi					
44. Uykuya dalmada güçlük					
45. Yaptığınız işleri bir ya da birkaç kez kontrol etme					
46. Karar vermede güçlük					
47. Otobüs, tren, metro gibi araçlarla yolculuk etme korkusu					
48. Nefes almada güçlük					
49. Soğuk veya sıcak basması					
50. Sizi korkutan belirli uğraş, yer ve nesnelerden kaçınma durumu					
51. Hiçbir şey düşünememe hali					
52. Bedeninizin bazı kısımlarında uyuşma, karıncalanma olması					
53. Boğazınıza bir yumru tıkanmış olma hissi					
54. Gelecek konusunda ümitsizlik					
55. Düşüncelerinizi bir konuya yoğunlaştırmada güçlük					
56. Bedeninizin çeşitli kısımlarında zayıflık hissi					
57. Gerginlik veya coşku hissi					
58. Kol veya bacaklarda ağırlık hissi					
59. Ölüm ya da ölme düşünceleri					
60. Aşırı yemek yeme					
61. İnsanların size baktığı veya hakkınızda konuştuğu zaman rahatsızlık duyma					
62. Size ait olmayan düşüncelere sahip olma					
63. Bir başkasına vurmak, zarar vermek, yaralamak dürtülerinin olması					
64. Sabahın erken saatlerinde uyanma					
65. Yıkanma, sayma, dokunma gibi bazı hareketleri yineleme hali					
66. Uykuda huzursuzluk, rahat uyuyamama					
67. Bazı şeyleri kırıp dökme hissi					

68. Başkalarının paylaşıp kabul etmediği inanç ve düşüncelerin olması					
69. Başkalarının yanında kendini çok sıkılgan hissetme					
70. Çarşı sinema gibi kalabalık yerlerde rahatsızlık hissi					
71. Her şeyin bir yük gibi görünmesi					
72. Dehşet ve panik nöbetleri					
73. Toplum içinde yiyip-içerken huzursuzluk hissi					
74. Sık sık tartışmaya girme					
75. Yalnız bırakıldığında sinirlilik hali					
76. Başkalarının sizi başarılarınız için yeterince taktir etmediği duygusu					
77. Başkalarıyla birlikte olunan durumlarda bile yalnızlık hissetme					
78. Yerinizde duramayacak ölçüde huzursuzluk duyma					
79. Değersizlik duygusu					
80. Size kötü bir şey olacakmış duygusu					
81. Bağırma ya da eşyaları fırlatma					
82. Topluluk içinde bayılacağınız korkusu					
83. Eğer izin verirseniz insanların sizi sömüreceği duygusu					
84. Cinsiyet konusunda sizi çok rahatsız eden düşüncelerin olması					
85. Günahlarınızdan dolayı cezalandırılmanız gerektiği düşüncesi					
86. Korkutucu türden düşünce ve hayaller					
87. Bedeninizde ciddi bir rahatsızlık olduğu düşüncesi					
88. Başka bir kişiye asla yakınlık duyamama					
89. Suçluluk duygusu					
90. Aklınızdan bir bozukluğu olduğu düşüncesi					

UCLA-LS

Aşağıda çeşitli duygu ve düşünceleri içeren ifadeler verilmektedir. Sizden istenilen her ifade de tanımlanan duygu ve düşünceyi ne sıklıkta hissetiğinizi ve düşündüğünüzü her biri için tek bir rakkamı daire içine alarak belirtmenizdir.

	Ben bu durumu **HİÇ** yaşamam	Ben bu durumu **NADİREN** Yaşarım	Ben bu durumu **BAZEN** Yaşarım	Ben bu durumu **SIK SIK** Yaşarım
1. Kendimi çevremdeki insanlarla uyum içinde hissediyorum.	4	3	2	1
2. Arkadaşım yok.	1	2	3	4
3. Başvurabileceğim hiç kimsem yok.	1	2	3	4
4. Kendimi tek başınaymışım gibi hissetmiyorum.	4	3	2	1
5. Kendimi bir arkadaş grubunun bir parçası olarak hissediyorum.	4	3	2	1
6. Çevremdeki insanlarla bir çok ortak yönüm var.	4	3	2	1
7. Artık hiç kimseyle samimi değilim.	1	2	3	4
8. İlgilerim ve fikirlerim çevremdekilerce paylaşılmıyor.	1	2	3	4
9. Dışa dönük bir insanım.	4	3	2	1
10. Kendimi yakın hissetiğim insanlar var.	4	3	2	1
11. Kendimi grubun dışına itilmiş hissediyorum.	1	2	3	4
12. Sosyal ilişkilerim yüzeyseldir.	1	2	3	4
13. Hiç kimse gerçekten beni iyi tanımıyor.	1	2	3	4
14. Kendimi diğer insanlardan soyutlanmış hissediyorum.	1	2	3	4
15. İstediğim zaman arkadaş bulabilirim.	4	3	2	1
16. Beni gerçekten anlayan insanlar var.	4	3	2	1
17. Bu derece içime kapanmış olmaktan dolayı mutsuzum.	1	2	3	4
18. Çevremde insanlar var ama benimle değiller.	1	2	3	4
19. Konuşabileceğim insanlar var.	4	3	2	1
20. Derdimi anlatabileceğim insanlar var.	4	3	2	1

APPENDIX E: Multidimensional Scale of Perceived Social Support

Aşağıda 12 cümle ve her bir cümle altında da cevaplarınızı işaretlemeniz için 1'den 7'ye kadar rakamlar verilmiştir. Her cümlede söylenenin sizin için ne kadar çok doğru olduğunu veya olmadığını belirtmek için o cümle altındaki rakamlardan yalnız bir tanesini daire içine alarak işaretleyiniz. Bu şekilde 12 cümlenin her birine bir işaret koyarak cevaplarınızı veriniz. Lütfen hiçbir cümleyi cevapsız bırakmayınız. Sizce doğruya en yakın olan rakamı işaretleyiniz.

1. Ailem ve arkadaşlarım dışında olan ve ihtiyacım olduğunda yanımda olan bir insan (örneğin, flört, nişanlı, sözlü, akraba, komşu, doktor) var.

Kesinlikle hayır 1, 2, 3, 4, 5, 6, 7 Kesinlikle evet.

2. Ailem ve arkadaşlarım dışında olan ve sevinç ve kederlerimi paylaşabileceğim bir insan (örneğin, flört, nişanlı, sözlü, akraba, komşu, doktor) var.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

3. Ailem (örneğin, annem, babam, eşim, çocuklarım, kardeşlerim) bana gerçekten yardımcı olmaya çalışır.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

4. İhtiyacım olan duygusal yardımı ve desteği ailemden (örneğin, annemden, babamdan, eşimden, çocukları mdan, kardeşlerimden) alırım.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

5. Ailem ve arkadaşlarım dışında olan ve beni gerçekten rahatlatan bir insan (örneğin, flört, nişanlı, sözlü, akraba, komşu, doktor) var.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

6. Arkadaşlarım bana gerçekten yardımcı olmaya çalışırlar.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

7. İşler kötü gittiğinde arkadaşlarıma güvenebilirim.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

8. Sorunlarımı ailemle (örneğin, annemle, babamla, eşimle, çocuklarımla, kardeşlerimle) konuşabilirim.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

9. Sevinç ve kederlerimi paylaşabileceğim arkadaşlarım var.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

10. Ailem ve arkadaşlarım dışında olan ve duygularıma önem veren bir insan (örneğin, flört, nişanlı, sözlü, akraba, komşu, doktor) var.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

11. Kararlarımı vermede ailem (örneğin, annem, babam, eşim, çocuklarım, kardeşlerim) bana yardımcı olmaya isteklidir.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

12. Sorunlarımı arkadaşlarımla konuşabilirim.

Kesinlikle hayır 1,2,3,4,5,6,7 Kesinlikle evet

APPENDIX F: Inventory of Socially Supportive Behaviors

Son dört haftada, insanların size nasıl yardım ettigini ya da hayatınızı sizin için nasıl daha iyi yapmaya çalıstıklarını ögrenmek istiyoruz. Asagıda çesitli aktivitelerden olusan bir liste bulacaksınız. Bunların bazılarını geçmiş haftalarda diger insanlar sizin için, size ya da
sizinle birlikte yapmış olabilirler. Lütfen her maddeyi dikkatle okuyunuz ve bu aktivitelerin size son dört haftada ne sıklıkla oldugunu belirtiniz.

Degerlendirmeleriniz için asagıdaki ölçegi kullanınız:

A. Hiç
B. Bir ya da iki kere
C. Yaklasık haftada bir kere
D. Haftada birkaç kere
E. Hemen hemen her gün

Lütfen her maddeyi dikkatlice okuyunuz ve en uygun oldugunu düsündügünüz degerlendirmeyi seçiniz. Son dört haftada, bu aktiviteleri diger insanlar sizin için, size ya da sizinle birlikte ne sıklıkla yapmışlardır:

1. Siz yokken bir aile üyesine gözkulak oldu.	A	B	C	D	E
2. Stresli bir durumda fiziksel olarak sizin yanınızda oldu.	A	B	C	D	E
3. Bir süre uzaklaşabilmeniz için size bir yer sagladı.	A	B	C	D	E
4. Siz yokken size ait şeylere (evcil hayvanlar, bitkiler, ev vb.) gözkulak oldu.	A	B	C	D	E
5. Size, sizin içinde bulunduğunuz duruma benzer bir durumda kendisinin ne yaptığını anlattı.	A	B	C	D	E
6. Aklınızdan bazı seyleri uzaklaştırmanız için					

sizinle birlikte bir aktivitede yer aldı.	A	B	C	D	E
7. Sizinle, ilgilendiginiz bazı şeyler hakkında sohbet etti.	A	B	C	D	E
8. Size, bir işi iyi yaptıgınızı söyledi.	A	B	C	D	E
9. İşinizi halledebilecek birisine sizinle beraber geldi.	A	B	C	D	E
10. Size, böyle, oldugunuz sekilde, gayet iyi oldugunuzu söyledi.	A	B	C	D	E
11. Size, konuştugunuz özel şeylerin sadece ikiniz arasında kalacagını söyledi.	A	B	C	D	E
12. Kendiniz için bir hedef belirlemenizde size yardımcı oldu.	A	B	C	D	E
13. Sizden ne beklendiğini size açıkladı.	A	B	C	D	E
14. Sizin bir yeteneğiniz ya da özelliğinize duyduğu güveni ya da saygısını ifade etti.	A	B	C	D	E
15. Bir seyin nasıl yapılacağı konusunda size bilgi verdi.	A	B	C	D	E
16. Yapmanız gereken bir eylem önerdi.	A	B	C	D	E
17. Size 30 YTL'den fazla para verdi.	A	B	C	D	E
18. Fiziksel yakınlık göstererek sizi rahatlattı.	A	B	C	D	E
19. İçinde bulundugunuz bir durumu anlamanıza yardım etmek için size bazı bilgiler verdi.	A	B	C	D	E
20. Sizi taşıtıyla bir yerlere bıraktı.	A	B	C	D	E
21. Size verilen bir tavsiyeye uyup uymadığınızı kontrol etti.	A	B	C	D	E
22. Size 30 YTL'den az para verdi.	A	B	C	D	E
23. Bir şeyi neden iyi yapamadığınızı anlamanıza yardımcı oldu.	A	B	C	D	E
24. Özel duygularınız hakkında konuşurken sizi dinledi.	A	B	C	D	E
25. İhtiyacınız olan bir şeyi (para dısında fiziksel					

bir obje) size ödünç olarak ya da tamamen verdi.	A	B	C	D	E
26. Yapmak istediğiniz şeyin doğru olduğu konusunda size katıldı.	A	B	C	D	E
27. İçinde bulunduğunuz durumu daha net ve kolay anlamanızı sağlayacak seyler söyledi.	A	B	C	D	E
28. Sizin durumunuza benzer bir durumda kendini nasıl hissettiğini anlattı.	A	B	C	D	E
29. Yardıma ihtiyacınız olduğunda her zaman yanınızda olacağını söyledi.	A	B	C	D	E
30. Sizin iyi olmanız için, sizin için endişelendiğini ifade etti ve size ilgi gösterdi.	A	B	C	D	E
31. Kendisini size çok yakın hissettiğini söyledi.	A	B	C	D	E
32. Yardım almanız için kimi görmeniz gerektiğini söyledi.	A	B	C	D	E
33. Gerçekleşmek üzere olan bir durumdan neler beklemeniz gerektigini söyledi.	A	B	C	D	E
34. Size 30 YTL'den fazla para borç verdi.	A	B	C	D	E
35. Size bir şeyin nasıl yapılacagını öğretti.	A	B	C	D	E
36. İyi veya kötü demeden, nasıl oldugunuza dair size geribildirim verdi.	A	B	C	D	E
37. Sizi neşelendirmek için şakalar yaptı.	A	B	C	D	E
38. Size kalacak bir yer sağladı.	A	B	C	D	E
39. Yapmanız gereken bir iş için geldi ve size yardım etti.	A	B	C	D	E
40. Size 30 YTL'den az para borç verdi.	A	B	C	D	E

APPENDIX G: Study 2 Informed Consent and Demographics Form

Bu çalışma Orta Doğu Teknik Üniversitesi, Psikoloji Bölümü, Klinik Psikoloji Yüksek Lisans Tez çalışması kapsamında ilgili program öğrencisi Psk. Tuğba Yılmaz ve süpervizörü Doç. Dr. Özlem Bozo-İrkin tarafından gerçekleştirilmektedir. Çalışmanın amacı katılımcıların kendi kendine meme muayenesi yapmaları ve mammografi çektirmeleri ile ilgili olan faktörleri incelemektir. Çalışmaya katılım tamamen gönüllülük esasına dayanmaktadır. Anketlerin doldurulması için katılımcılardan **herhangi bir kişisel bilgi istenmemektedir**. Bu gönüllü katılım formu, katılımcıların cevaplayacağı soru kitapçığına eklenmeyecektir. Sorulara vereceğiniz cevaplar *tamamen gizli tutulacak ve kimse ile paylaşılmayacaktır.* Toplanan veriler sadece araştırmacılar tarafından analiz edilerek, tezin yazımı ve bilimsel kongre bildirilerinin ve makalelerin hazırlanmasında kullanılacaktır. Çalışmada yer alan tüm soruların cevaplanması yaklaşık olarak 20 dakika sürmektedir.

Anketlerde yer alan sorular katılımcılarda herhangi bir psikolojik ya da fizyolojik stres yaratmamaktadır. Ancak soruların doldurulması esnasında herhangi bir nedenden dolayı rahatsızlık hissederseniz, çalışmadan katılımınızı çekebilirsiniz.

Anketlerin doldurulmasından sonra çalışma hakkında herhangi bir sorunuz varsa bunlar araştırmacılar tarafından cevaplanacaktır. Çalışma ile ilgili bilgi almak istemeniz halinde Psk. Tuğba Yılmaz (email: tugba.yilmaz.psy@gmail.com; Tel: 0312 210 34 14) ile iletişime geçebilirsiniz.

Katılımınız için teşekkür ederiz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve katılımımı herhangi bir nedenden dolayı çekebileceğimi biliyorum. Bu sorulara verdiğim cevapların bilimsel amaçlarla kullanılması için izin veriyorum.
(Lütfen formu imzalayıp araştırmacıya geri veriniz.)

Tarih:
İmza:

Lütfen aşağıdaki sorulara, size en uygun olduğunu düşündüğünüz cevabın karşısına çarpı işareti koyarak cevap veriniz. Soruları dikkatle okuyunuz ve hepsine cevap verdiğinizden emin olunuz.

1. Cinsiyetiniz: Kadın
2. Yaşınız: _____
3. Medeni durumunuz:
    1. bekar (hiç evlenmemiş) _____
    2. evli _____
    3. boşanmış _____
    4. dul (eşi vefat etmiş) _____
4. Eğitim seviyeniz:

1. okuma yazma bilmiyor _____
2. sadece okuma yazma biliyorum _____
3. ilkokul _____
4. ortaokul _____
5. lise _____
6. üniversite (lisans) _____
7. yüksek lisans _____
8. doktora _____

5. Mesleğiniz:
1. ev hanımı/çalışmıyor _____
2. işçi _____
3. memur _____

6. Yaşamınızın çoğunu geçirdiğiniz yeri seçiniz.
1. büyükşehir (İstanbul, Ankara, İzmir vb.) _____
2. şehir (Aydın, Manisa, Çankırı, Kırşehir vb.) _____
3. ilçe/kasaba _____
4. köy _____

7. Gelir durumunuz
1. çok yüksek _____
2. yüksek _____
3. orta _____
4. düşük _____
5. çok düşük _____

8. Sağlık sigortanız var mı?
1. Evet _____
2. Hayır _____

9. Eşinizin mesleği:
1. çalışmıyor/işsiz _____
2. işçi _____
3. memur _____
4. serbest meslek

10. Eşinizin eğitim düzeyi:
1. okuma yazma bilmiyor _____
2. sadece okuma yazma biliyorum _____
3. ilkokul _____
4. ortaokul _____
5. lise _____
6. üniversite (lisans) _____
7. yüksek lisans _____
8. doktora _____

11. Menarş yaşı (ilk defa adet gördüğünüz yaş): _____

12. Menapoz (adetlerin kesilmesi) yaşadınız mı?
1. Evet _____
2. Hayır _____ (15. Soruya atlayınız)

13. Menapoza girme yaşınız: _____

14. Menopoz için herhangi bir tedavi aldınız mı?
1. Evet _____(lütfen belirtiniz) _____
2. Hayır _____

15. Doğum kontrol hapı kullandınız mı?
1. Evet _____Ne kadar süreyle? _____

2. Hayır _____

16. Meme kanseri hakkında bilginiz var mı?
    1. Evet _____
    2. Hayır _____ (22. Soruya atlayınız)
17. Meme kanseri hakkında bilgiyi nereden edindiniz?
    1. Hastane/doktor _____
    2. Kitap, broşür ya da dergilerden _____
    3. Arkadaş, akraba ya da komşulardan _____
    4. Televizyon ya da radyodan _____
    5. Diğer (lütfen belirtiniz) _____
18. Meme kanseri tanısı alan kişiler varsa işaretleyiniz.
    1. Kendim _____
    2. Annem _____
    3. Kız kardeşim _____
    4. Teyzem _____
    5. Anneannem _____
    6. Arkadaşım _____
    7. Diğer (lütfen belirtiniz) _____
19. Meme kanserinden korunmak için herhangi bir yöntem uyguluyor musunuz?
    1. Evet _____
    2. Hayır _____
20. Kullandığınız yöntemleri işaretleyiniz.
    1. Kendi kendine meme muayenesi _____
    2. Klinik meme muayenesi _____
    3. Mamografi _____
    4. Diğer (lütfen belirtiniz) _____
21. (Varsa) Yaptığınız sağlıklı doğum sayısı: _____
22. (Varsa) Yaptığınız ölü doğum sayısı: _____
23. (Varsa) Yaptırdığınız kürtaj sayısı: _____
24. (Varsa) Çocuklarınızın sayısı: _____
25. İlk kez doğum yaptığınız yaş: _____
26. Ortalama emzirme süreniz (ay olarak): _____
27. Sigara kullanıyor musunuz?
    1.Evet ___
    2. Hayır ___
28. Ne kadar süreyle sigara kullandınız? _____
28. Alkol kullanır mısınız?
    1. Evet _____ Ne kadar?_____
    2. Hayır _____
29. Spor yapar mısınız?
    1. Evet _____
    2. Hayır _____
30. Dengeli beslenir misiniz?
    1. Evet _____
    2. Hayır _____

APPENDIX H: Life Orientation Test-Revised

AÇIKLAMA : Aşağıda 8 cümle verilmiştir. Her cümleyi dikkatle okuyarak beşli ölçek üzerinde uygun dereceyi işaretleyiniz. İşaretlerken seçmeniz gerektiğini düşündüğünüz veya doğru olmasını arzu ettiğiniz cümleyi değil, gerçekten size uygun olan dereceyi seçiniz. “Doğru” ya da “Yanlış” cevap diye bir durum söz konusu değildir.

	Tamamen katılıyorum	Oldukça katılıyorum	Kararsızım	Pek katılmıyorum	Kesinlikle katılmıyorum
1.	Ne olacağını önceden kestiremediğim durumlarda hep en iyi sonucu beklerim.				
2.	Kolayca gevşeyip rahatlayabilirim.				
3.	Bir işimin ters gitme olasılığı varsa mutlaka ters gider.				
4.	Geleceğim konusunda hep iyimserimdir				
5.	Arkadaşlarımla birlikte olmaktan Hoşlanırım.				
6.	Yapacak bir şeylerimin olması benim için önemlidir.				
7.	İşlerimin istediğim gibi yürüyeceğini nerede ise hiç beklemem.				
8.	Başıma iyi şeylerin geleceğine pek bel bağlamam.				

APPENDIX I: Champion's Health Belief Model Scale

Ciddiyet

1. Meme kanseri düşüncesi beni korkutur.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

2. Meme kanserini düşündüğüm zaman kalp atışlarım hızlanır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

3. Meme kanseri hakkında düşünmeye korkarım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

4. Meme kanserine yakalandığımda yaşayacağım sorunlar çok uzun sürecektir.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

5. Meme kanseri erkek arkadaşım ya da eşim ile olan ilişkimi olumsuz yönde etkiler.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

6. Meme kanserine yakalansaydım bütün yaşamım değişirdi.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

7. Meme kanserine yakalansaydım 5 yıldan fazla yaşamazdım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

Yatkınlık

1.Gelecekte büyük bir olasılıkla meme kanseri olacağım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

2. Gelecekte meme kanseri olacağımı hissediyorum.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

3. Büyük bir olasılıkla önümüzdeki 10 yıl içinde meme kanseri olacağım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

4. Meme kanserine yakalanma olasılığım çok yüksektir.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

5. Meme kanserine yakalanma olasılığım herhangi bir kadına göre daha fazladır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

KKMM-Yarar

1. Kendi kendime meme muayenesi yaptığım zaman kendimi iyi hissederim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

2. Kendi kendime meme muayenesini her ay yaptığım zaman meme kanseri hakkında çok fazla endişelenmem.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

3. Her ay kendi kendime meme muayenemi yapmam kitleleri erken bulmamı sağlar.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

4. Önümüzdeki yıl her ay kendi kendime meme muayenemi yaparsam, meme kanserinden ölme olasılığımı azaltırım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

5. Her ay kendi kendime meme muayenemi yaparsam, meme kanseri olduğumda tüm alınması ya da şekil bozukluğu yapacak bir ameliyat olma olasılığımı azaltırım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

6. Her ay kendi kendime meme muayenemi yaparsam, doktor ya da hemşireden önce kanser olabilecek bir kitleyi bulmam kolaylaşır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

KKMM-Engel

1. Kendi kendime meme muayenesi yaparken kendimi tuhaf hissederim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

2.Önümüzdeki yıllarda kendi kendime meme muayenesi yapmak,meme kanseri konusunda beni endişelendirecektir.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

3. Kendi kendime meme muayenesi yapmak beni utandırır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

4. Kendi kendime meme muayenesi yapmak çok fazla zaman alır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

5. Kendi kendime meme muayenesi yapmak hoş olmayan bir durumdur.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

6. Kendi kendime meme muayenesi yapmak için yeterli mahremiyetim yok.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

Güven

1. Kendi kendine meme muayenesinin nasıl yapılacağını biliyorum.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

2. Kendi kendime meme muayenesini doğru yapabileceğimden eminim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

3. Eğer meme kanserine yakalanmış olsaydım, kendi kendime meme muayenesi yaparak kitleyi bulabilirdim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

4. Kendi kendime meme muayenemi tek başıma yaparsam, mememdeki kitleyi bulabilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

5. Ceviz büyüklüğündeki bir meme kitlesini bulabilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

6. Fındık büyüklüğündeki bir meme kitlesini bulabilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

7. Bezelye büyüklüğündeki bir meme kitlesini bulabilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

8. Kendi kendime meme muayenesi yapmak için izlenmesi gereken adımları bildiğimden eminim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

9. Kendi kendime meme muayenesi yaptığım zaman normal ve normal olmayan meme dokusunu anlayabilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

10. Aynaya baktığımda mememdeki normal olmayan değişiklikleri fark edebilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

11. Mememi muayene ederken parmaklarımın doğru kısımlarını kullanabilirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

Sağlık Motivasyonu

1. Sağlık sorunlarımı erken dönemde fark etmek isterim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

2. Sağlıklı kalmak benim için oldukça önemlidir.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

3. Sağlığımın daha iyi olması için yeni bilgileri araştırırım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

4. Sağlığımın daha iyi olmasını sağlayacak etkinliklere katılmanın önemli olduğunu düşünürüm.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

5. Dengeli beslenirim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

6. Haftada en az 3 kez egzersiz yaparım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

7. Hasta olmasam bile düzenli sağlık kontrolü yaptırırım.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

Mammografi-Yarar

1. Önerilen mammografiyi (meme röntgeni) yaptırdığımda, kendimi iyi hissederim.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

2.Mammografi (meme röntgeni) yaptırdığım zaman, meme kanseri hakkında çok fazla endişelenmem.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

3.Mammografi (meme röntgeni) yaptırmak, kitlelerin erken bulunmasına yardım eder.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

4.Mammografi (meme röntgeni) yaptırmak, meme kanserinden ölme ihtimalini azaltır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

5.Mammografi (meme röntgeni) yaptırmak, meme kanseri olduğumda tüm memenin alınması ya da şekil bozukluğu yapacak bir ameliyat olma olasılığımı azaltır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

6.Mammografi (meme röntgeni) yaptırmak, bir kitlenin kendim yada bir sağlık personeli tarafından fark edilmeden önce bulunmasına yardım eder.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

Mammografi-Engel

1.Düzenli mammografi (meme röntgeni) yaptırmak, meme kanseri hakkında beni endişelendirecektir.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

2.Mammografi (meme röntgeni) yaptırmak beni utandırır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

3.Mammografi (meme röntgeni) yaptırmak çok fazla zaman alır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

4.Mammografi (meme röntgeni) yaptırmak ağrılı olur.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

5.Mammografi (meme röntgeni) yaptırmak oldukça pahalıdır.

( )Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamenkatılıyorum

APPENDIX J: Basic Personality Traits Inventory

YÖNERGE:
Aşağıda size uyan ya da uymayan pek çok kişilik özelliği bulunmaktadır. Bu özelliklerden her birinin sizin için ne kadar uygun olduğunu ilgili rakamı daire içine alarak belirtiniz.

		Hiç uygun değil		Uygun değil		Kararsızım
1	Aceleci	1	2	3	4	5
2	Yapmacık	1	2	3	4	5
3	Duyarlı	1	2	3	4	5
4	Konuşkan	1	2	3	4	5
5	Kendine güvenen	1	2	3	4	5
6	Soğuk	1	2	3	4	5
7	Utangaç	1	2	3	4	5
8	Paylaşımcı	1	2	3	4	5
9	Geniş / rahat	1	2	3	4	5
10	Cesur	1	2	3	4	5
11	Agresif(Saldırgan)	1	2	3	4	5
12	Çalışkan	1	2	3	4	5
13	İçten pazarlıklı	1	2	3	4	5
14	Girişken	1	2	3	4	5
15	İyi niyetli	1	2	3	4	5
16	İçten	1	2	3	4	5
17	Kendinden emin	1	2	3	4	5
18	Huysuz	1	2	3	4	5
19	Yardımsever	1	2	3	4	5
20	Kabiliyetli	1	2	3	4	5
21	Üşengeç	1	2	3	4	5
22	Sorumsuz	1	2	3	4	5
23	Sevecen	1	2	3	4	5

		Hiç uygun değil		Uygun değil		Kararsızım
24	Pasif	1	2	3	4	5
25	Disiplinli	1	2	3	4	5
26	Açgözlü	1	2	3	4	5
27	Sinirli	1	2	3	4	5
28	Canayakın	1	2	3	4	5
29	Kızgın	1	2	3	4	5
30	Sabit fikirli	1	2	3	4	5
31	Görgüsüz	1	2	3	4	5
32	Durgun	1	2	3	4	5
33	Kaygılı	1	2	3	4	5
34	Terbiyesiz	1	2	3	4	5
35	Sabırsız	1	2	3	4	5
36	Yaratıcı (Üretken)	1	2	3	4	5
37	Kaprisli	1	2	3	4	5
38	İçine kapanık	1	2	3	4	5
39	Çekingen	1	2	3	4	5
40	Alıngan	1	2	3	4	5
41	Hoşgörülü	1	2	3	4	5
42	Düzenli	1	2	3	4	5
43	Titiz	1	2	3	4	5
44	Tedbirli	1	2	3	4	5
45	Azimli	1	2	3	4	5

APPENDIX K: Champion Breast Cancer Fear Scale

1	Meme kanseri aklıma geldiği zaman korkarım. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
2	Meme kanserini düşündüğüm zaman sinirlenirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım *N* ( )Katılıyorum ( )Tamamen katılıyorum
3	Meme kanseri aklıma geldiği zaman üzülürüm. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım *N* ( )Katılıyorum ( )Tamamen katılıyorum
4	Meme kanserini düşündüğüm zaman depresif olurum. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
5	Meme kanserini düşündüğüm zaman tedirgin olurum. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
6	Meme kanseri aklıma geldiği zaman kalbim hızla çarpar. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
7	Meme kanserini düşündüğüm zaman huzursuz olurum. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
8	Meme kanserini düşündüğüm zaman endişelenirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

APPENDIX L: Champion Mammography Self Efficacy Scale

1	Kendi aracım yada toplu taşıma araçları ile mamografi çekilen merkeze gidip mamografimi çektirebilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
2	Yaşamımdaki diğer işleri ayarlayıp mamografi çektirebilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
3	Mamografi çekilen merkezdeki insanlarla meme kanseri ve mamografiye ilişkin endişelerim hakkında konuşabilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
4	Tedirgin olsam bile mamografi çektirebilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
5	Sonucunun nasıl çıkacağını bilmesem bile mamografi çektirebilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
6	Sağlık güvencem karşılamasa bile ücretini ödeyerek mamografi çektirebilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
7	Mamografi çektirmek için randevu alabilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
8	Gerçekten istersem, mamografi çektirebileceğimden eminim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
9	Mamografi çektirmek için nereye, ne zaman, nasıl gideceğimi, hangi resmi işlemleri yaptıracağımı biliyorum. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum
10	Mamografi çektirecek bir merkez bulabilirim. ( ) Kesinlikle katılmıyorum ( )Katılmıyorum ( )Kararsızım ( )Katılıyorum ( )Tamamen katılıyorum

APPENDIX M: METU LIBRARY THESIS PHOTOCOPY APPROVAL FORM

TEZ FOTOKOPİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ☐

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : YILMAZ
Adı : TUĞBA
Bölümü : PSİKOLOJİ (Klinik Psikoloji Opsiyonu)

TEZİN ADI (İngilizce) : Psychosocial Correlates of Breast Self Examination and Mammography

TEZİN TÜRÜ : Yüksek Lisans ☐ Doktora ☐

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. ☐
2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐
3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

Yazarın imzası ..... Tarih .....