

Running Head: APPRAISALS IN MENOPAUSE

Cognitive Appraisals, Symptom Severity, and Obtained Treatment During the
Perimenopause: A Retrospective Study

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Abstract

Menopause is a prevalent concern for women ranging from the ages of 40 to 60, as it is often associated with significant amounts of physical and emotional distress. Previous research has shown an association between women's attitudes toward menopause and the decision to seek hormone replacement therapy (HRT). In addition, research has shown that women who suffer from many physical symptoms tend to seek HRT. However, there is a lack of research investigating how physical symptoms during menopause may affect the relationship between attitudes toward menopause and the decision to seek HRT, anti-depressant medication, or psychotherapy. The present study examined whether symptom severity served as a significant mediator between menopausal attitudes and the decision to seek HRT or anti-depressant medication during the menopausal transition. Ninety-five postmenopausal women completed a General Information Questionnaire, the Menopause Attitude Scale, the Menopause Representations Questionnaire, the Women's Health Questionnaire, and the NEO Five Factor Inventory. Results indicated that symptom severity significantly mediated the relationship between two menopausal attitudinal variables (general attitudes toward menopause and perceptions that menopause has had a negative impact on one's life) and treatment-seeking. Additional analyses revealed that women who sought treatment experienced more symptoms than those who did not, past reproductive events were not predictive of treatment-seeking or physical and emotional distress during the menopausal transition, and that those who had experienced surgical menopause had a more positive general attitude toward menopause than those who had experienced natural menopause. Further, it was revealed that a dissatisfaction with one's social life predicted both treatment-seeking and physical and emotional distress during the menopausal transition.

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Cognitive Appraisals, Symptom Severity, and Obtained Treatment During the Perimenopause: A Retrospective Study

Menopause is a time in a woman's life that brings about great change and often a great deal of frustration and confusion. It is traditionally defined as a woman's final menstruation, which occurs during the climacteric (Smith & Judd, 1994). The climacteric is a general term used to describe the phase of the aging process in which a woman passes from a reproductive to a non-reproductive period, consisting of three stages: perimenopause, menopause, and postmenopause (Smith & Judd, 1994). The perimenopausal period occurs when the menstrual cycle becomes irregular and when other symptoms begin to develop, and is often called the menopausal transition. Menopause refers to a specific event, a woman's final menstruation. Further, postmenopause refers to the phase of life that follows the final menstrual period (Smith & Judd, 1994). The standard confirmation of menopause occurs after 12 consecutive months without menstruation in the absence of any pathological or physical cause that would terminate menstruation (North American Menopause Society, 2003). Currently, women in the United States typically experience menopause between the ages of 40 and 58, with the mean age of 51 (North American Menopause Society, 2003). However, women may experience menopause anywhere between the ages of 30 and 60.

History of Menopausal Research

Historically, menopause has been a topic of curiosity, although it was rarely discussed in the social realm. It has only been in the past few decades that some researchers have systematically studied the menopausal process and its symptoms. The term "menopause" was derived from the Greek words "men" (meaning "month") and "pauses" (meaning "cessation"). The term "climacteric" originated from the Greek term

for “ladder” or “steps of a ladder” (Utian, 1997). In the 4th century B.C., Aristotle and many other philosophers in classical Greece and Rome cited the age of menopause to occur between 40 and 50 years of age. By the 7th century A.D., writers were in accord that the minimum age for menopause was 35, the average age was 50 and the maximum age was 60 (Amundson & Diers, 1973). In the 18th century, treatment for menopause was aimed at alleviating psychological symptoms or curing the “diseases” that were thought to be tied to the menopausal transition. During this time, treatments varied from blood-letting to purgatives to the consumption of raw eggs (Utian, 1997).

The treatment of menopausal symptoms has become gradually more scientific, and in 1896, three reports were published on the topic of hormone replacement therapy (HRT) (Utian, 1997). Since that time, HRT has grown in popularity due to increased availability and demand, but has become increasingly controversial. HRT has been associated with complications including endometrial cancer, breast cancer, hypertension, and gallbladder disease (Smith & Judd, 1994). Currently, there is a wealth of information in books, on the internet, and in the media for women experiencing menopausal symptoms.

Theories of Menopause

Reproductive cessation has been documented in both human and non-human female primates, lions, and a number of other mammals (Packer, Tartar, & Collins, 1998). Thus, human females and some other mammalian females live for an extended period of time after their ability to reproduce ceases. This is not true for all species, nor is it true for human males who can retain their fertility until they are as old as 94.20 years (Silber, 1991). The menopausal transition is particularly noteworthy for humans because it serves as a significant outlier in normal reproductive progression. Given that the life

expectancy for females is 82.4 years (Statistics Canada, 2003), women are living an average of 32.4 years after their ability to reproduce ceases. Theories about menopause can help explain why this occurs and help determine if menopause is a simple anomaly or if it serves a specific evolutionary function. Currently, there are four evolutionary hypotheses for why the cessation of reproduction occurs in mammals.

One hypothesis posits that women experience menopause because they are living longer due to medical advances and associated decreases in mortality rates (Sherman, 1998). This can also be seen with mammals being kept in artificial zoo environments that live much longer than they would in their natural environment. Ultimately, menopause occurs because the lifespan has increased in mammals with a finite number of eggs (Austad, 1994). During the second trimester, the ovaries in the human fetus have 7 million ovarian follicles that have the potential to become eggs. When the infant is born, this number is reduced to 40,000, and about 400 develop into eggs and are shed during the female's lifetime (Baker & Bellis, 1995). These eggs deplete throughout the lifespan, and eventually menopause occurs when few eggs are left. In other words, the number of years that women are living is increasing, but the number of eggs that a female produces cannot be changed - it is fixed at birth.

A second hypothesis states that menopause occurs because age causes a deterioration of the once well-regulated physiological process of reproduction (Sherman, 1998). This process is similar to the degeneration of eyesight or hearing with age, or urinary incontinence with the deterioration of nerve and muscular bladder control. This occurs because a species has outlived the span of time that they were "designed" (i.e., evolved) to survive (Austad, 1994). This is also simply called the "senescence"

explanation, and support for this theory has been found in females of two mammalian species to date (Packer, Tartar, & Collins, 1998).

A third hypothesis is an adaptive evolutionary hypothesis positing that menopause occurs to protect the gene pool because birth defects increase with maternal age (Sherman, 1998). Therefore, mammals have evolved to stop reproducing after a certain age in order to keep genetic defects out of the population. Joseph and colleagues (2005) found that older maternal age was associated with higher rates of preterm birth, perinatal mortality, and fetal-growth restriction (see also Cleary-Goldman et al., 2005). This trend can also be found in other mammals. For example, baboon pregnancies are more likely to end in miscarriage after the female baboon reaches the age of 21 years (Packer, Tartar, & Collins, 1998). In addition to birth complications, genetic defects in offspring become more prevalent as maternal age increases. For example, the frequency of infants born with Down's syndrome compared to normal births increases from 1/1400 for women between the ages of 20 to 24 to 1/350 for women who are 35 years of age (Hook, Cross, & Schreinemachers, 1983).

Finally, the "grandmother" hypothesis proposes that mammals stop reproducing in order to best care for their offspring so the offspring will grow to be healthy and ultimately reproduce themselves (Alvarez, 2000). After an offspring is born, a mother must devote an increased amount of energy in order to care for a newborn, and may neglect other dependents. Menopause allows a mammal to stop reproducing and focus their attention on their already-present offspring and the children of their offspring (Alvarez, 2000). In evolutionary terms, this is essentially a form of inclusive fitness (Hamilton, 1964) or kin selection (Maynard Smith, 1964).

Despite the ability of various theories to explain disparate areas concerning the onset of menopause, a singular unifying theory has yet to be obtained.

Stages of Menopause

Women may experience either physiological or surgical menopause.

Physiological menopause occurs as a natural process as oocytes (eggs) in the ovary begin to disappear and the few remaining oocytes do not respond to gonadotropins such as luteinizing hormone (LH) and follicle-stimulating hormone (FSH). Surgical menopause, however, occurs when the ovaries are removed or from exposure to radiation therapy, and may occur at any age (Smith & Judd, 1994).

After menarche and prior to the menopausal transition, women experience hormonal fluctuations according to a 28-day cyclic pattern. In a regular menstrual cycle, ovarian estrogen determines the cyclic pattern of both FSH and LH. Around the midpoint of the cycle, high levels of estrogen allow the walls of the uterus to thicken and signal to the pituitary gland to release both FSH and LH. Typically, estrogen levels peak at day 12, and FSH and LH levels tend to peak at day 13 (Coulam, 1986). After these hormones are released, ovulation occurs.

During perimenopause, hormone levels change significantly. The level of estrogens, which are involved in thickening the endometrium and other aspects of menstrual regulation, drop off significantly during this time. In addition, the levels of androgen also plummet (Smith & Judd, 1994). As hormonal levels change, cyclic intervals begin to shorten and ovulation becomes unpredictable (Prior, 1998).

Following menopause, the level of estrogen within the female remains low. However, testosterone levels (an androgen) tend to increase in each decade that follows the menopausal transition (Cutler & Garcia, 1992). In addition, the gonadotropins, LH and

FSH, rise substantially to stimulate the ovaries to increase estrogen production. Due to the cessation of ovarian follicular activity, the oocytes become unresponsive to the gonadotropins and the FSH and LH levels in the body remain high (Smith & Judd, 1994).

Signs of Menopause

Typically, the first sign of menopause that women experience is irregular menses, which occurs when both the amount and duration of menstrual flow decrease, eventually tapering to spotting and cessation (Smith & Judd, 1994). However, the cessation of menstruation varies between women. Some women may experience a sudden disappearance of menstruation and a quick course of menopause, while other women may experience a gradual cessation. In addition, some women may suffer substantially from the accompanying menopausal changes, while some are not bothered by them (Dennerstein, 1996).

The most common menopausal symptom is the hot flush, which is an uncomfortable sensation consisting of sudden flushing of the skin (Kronenberg, 1990). Women who experience hot flashes typically experience a feeling of heat or burning in the neck, face and chest area, which is followed by an outbreak of sweating and a possible feeling of weakness (Smith & Judd, 1994). However, the characteristics of a hot flash vary both between and within individuals (Kronenberg, 1990). Approximately 75 percent of women who experience menopause suffer from hot flashes and 82 percent of these women continue to suffer for more than a year (Smith & Judd, 1994). However, hot flashes may continue for up to five years for many women (Kronenberg, 1990). Hot flashes may last for an average of four minutes and can occur from one to two times per hour to one to two times per week (Smith & Judd, 1994).

Another common menopausal symptom is insomnia due to night sweats, the night-time equivalent of hot flashes. Sleep may be frequently disrupted by uncomfortable sweating, which may lead to various cognitive and affective problems including irritability and memory loss (Smith & Judd, 1994). Night sweats and hot flashes are not the sole contributors to poor sleep patterns during the menopause, however, as higher anxiety levels, higher depression levels, and lower levels of estradiol have also been associated with poor menopausal sleep patterns (Hollander et al., 2001).

Women experiencing menopause typically encounter many physical changes of the reproductive area. For example, vaginal tissue tends to become thin and dry, with less elasticity, leading to vaginal atrophy (North American Menopause Society, 2003). In addition, vaginal lubrication decreases, leading to painful intercourse and post-coital bleeding (Bachmann, 1990). Further, atrophy of the uterus, and regression of breast size may occur (Smith & Judd, 1994). These reproductive changes may lead to a decreased sense of well-being and may decrease sexual desire and pleasure. Moreover, some individuals may experience heightened anxiety during sexual intercourse, stemming from the physical changes of their reproductive organs, which may also lead to decreased pleasure (Bachmann, 1990).

Up to 30 percent of women experience urinary incontinence during mid-life, which may be caused by a decrease in estrogen leading to a thinning of the lining of the urethra (North American Menopause Society, 2003). Although not all women suffer from urinary incontinence, women experiencing menopause may feel the need to urinate more often, may experience painful urination, or may experience the need to get out of bed several times per night to urinate (North American Menopause Society, 2003).

Other common physical symptoms include thinning and loss of elasticity of the skin, changes in patterns of body hair, and a redistribution of body weight (Smith & Judd, 1994). Typically, skin loses collagen and elasticity with age, which results in wrinkling. These changes are particularly evident in the areas that are exposed to light, such as the face, neck, and hands (Smith & Judd, 1994). Women experiencing menopause may also notice changes in patterns of their body hair. Typically, there is a loss of pubic hair, as well as a loss of hair on the upper lip, chin and cheeks. However, there may be an increase in coarse, terminal hair on the upper lip due to the imbalance of androgen to estrogen that occurs during the menopausal transition (Smith & Judd, 1994). In terms of body weight, women experiencing menopause typically notice an increased distribution of fat over the hips and abdomen (Smith & Judd, 1994).

In addition to physical changes, menopause can contribute to psychological changes within the individual. Common psychological symptoms include a variety of mood states, including anxiety, irritability, depression, frustration, and fatigue (Rasgon et al., 2005). Moreover, these psychological symptoms may contribute to increased stress, or an increased vulnerability to stressful situations that may arise (North American Menopause Society, 2003). Harlow and colleagues (1999) conducted a cross-sectional study of 4161 premenopausal women and found that 43.2 percent of all women sampled reported a continuous two week period of depressive symptoms. Moreover, 22 percent of these women scored above 16 on the Center for Epidemiologic Studies Depression Scale (CES-D), and 8.6 percent reported scores of 25 or greater. It should be noted that scores on the CES-D do not necessarily indicate a formal diagnosis of depression, but scores of 16 and above do suggest a diagnosis of a major depressive episode or significant depressive symptomatology (Harlow et al., 1999). Further, a National Comorbidity

Survey found that 5 percent of women between the ages of 45 and 54 are currently suffering from an episode of major depression (Blazer et al., 1994).

Measurement of Menopausal Complaints

Given the scope and potential impact of the varied symptoms of the menopausal transition, it is imperative that the symptoms of menopause can be quantified and measured with some degree of objectivity. Indeed, a number of researchers have developed measures to assess the severity of menopausal symptoms.

One of the first scales developed to measure menopausal symptoms was the Greene Climacteric Scale in 1976, which was later revised in 1998 (Greene, 1998). Originally, the Greene Climacteric Scale was designed to rationally measure climacteric symptoms and the resulting scale consisted of three domains: psychological, somatic, and vasomotor. These factors correlate very little with each other and are assumed to be measuring separate domains. In 1998, Greene revised the scale by replacing and rewording items as well as breaking down the psychological domain into anxiety and depressed mood subscales. This scale demonstrates adequate content validity, as only symptoms with significant factor loadings were included, and construct validity has since been demonstrated in relation to life stress, HRT, and psychological treatment (Zöllner, 2005). Further, each of the subscales on the Greene Climacteric Scale demonstrates good reliability (Zöllner, 2005).

The second major scale to tap the severity of menopausal symptoms is the Women's Health Questionnaire (WHQ), which was published in 1992 (Hunter, 2003). This scale is composed of nine subscales including: depressed mood, somatic symptoms, vasomotor symptoms, anxiety/fears, sexual behaviour, sleep problems, menstrual symptoms, memory/concentration, and attractiveness. Concurrent validity for the

Women's Health Questionnaire was assessed through a comparison with the General Health Questionnaire (GHQ; Goldberg, 1972). The depression scale in the WHQ correlated .86 with the GHQ. For test-retest reliability, the correlations ranged from .78 to .96 across a two-week interval.

A third major scale, the Qualifemme, was developed to measure the effect that menopausal hormone deficiency has on a woman's quality of life (Le Floch et al., 1994). This scale has five domains: psychological, vasomotor, uro-genital, a general domain, and a domain covering pain and problems with the hair and skin. Test-retest reliability for the measure ranged from .84 to .98, with a Cronbach's alpha of .73 (Le Floch et al., 1994).

The Menopause-Specific Quality of Life (MENQOL) was developed in 1996 to assess menopausal symptoms, and consists of four domains: vasomotor, psychosocial, physical and sexual (Hilditch et al., 1996). The test-retest reliability coefficients ranged from .81 for the psychosocial domain to .85 for the vasomotor domain. The test-retest reliability for the overall QOL score was .55. Internal consistency of the measure ranged from .81 to .85. For construct validity, the authors determined the discriminate validity between each domain and a separate validating instrument and found that the validity ranged from .38 (between the sexual domain and its respective validating instrument) and .69 (between the physical domain and its validating instrument), indicating satisfactory construct validity.

The Menopausal Rating Scale (MRS) was also originally developed in 1996 and then later validated in 2000 (Schneider et al., 2000). The MRS is an 11 item scale covering three domains: psychological symptoms, somatovegetative symptoms, and uro-genital symptoms. The MRS has demonstrated good construct validity with the

Kupperman Index (Kupperman et al., 1953) and the Short-Form-36 (SF-36; Ware & Sherbourne, 1992).

The Menopausal Symptom List (MSL) was developed in 1997 to measure the frequency and severity of menopausal symptoms (Perz, 1997). This scale is composed of three domains: psychological, vaso-somatic, and general somatic. Perz conducted test-retest reliability analyses for the frequency of symptom occurrence as well as the severity of the symptoms. For the frequency of occurrence, the test-retest reliability for the domains ranged from .72 (for vaso-somatic) to .92 (for general somatic). For the severity of symptoms, the test-retest reliability for the domains ranged from .73 (for psychological) to .87 (for general somatic). The MSL was correlated with the Greene Climacteric Scale (Greene, 1998) in order to determine convergent validity. As expected, the MSL and the CSRS were strongly and significantly correlated.

The Menopausal Quality of Life Scale (MQOL) was developed in 2000 to determine whether the quality of life for menopausal women changes with menopausal status in addition to other medical and lifestyle variables (Jacobs et al., 2000). This measure consists of both positive and negative items in 7 domains: energy, sleep, appetite, cognition, feelings, interactions, and symptoms impact. The internal consistency of the measure is excellent with a Cronbach's alpha of .92 for the total MQOL and a range from .69 to .91 for each of the domains.

Lastly, The Utian Quality of Life Scale (UQOL) was redeveloped in 2002 to assess physical symptoms as well as a sense of well-being that is distinct from menopausal symptoms (Utian et al., 2002). This instrument has 4 domains: occupational, health, emotional, and sexual. The internal consistency of the measure as a whole is .83, and the test-retest reliability ranges from .75 for the emotional domain to .88 for the

sexual domain. For construct validity, the UQOL was compared with the Short Form-36 (SF-36; Ware & Sherbourne, 1992), and was found to be correlated with the measure.

It is clear that a vast number of menopausal measures have been developed, but each scale differentially emphasizes domains and employs varying response formats. It would seem that there is ambiguity regarding the best measured aspects of menopause and the manner in which they should be measured.

Predictors of Depression and Mood Disturbance in Menopause

For women, associations between depression and reproductive events throughout the lifespan have been extensively documented. As mentioned in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*, boys and girls are equally affected by depression prior to puberty, but depression becomes twice as common in girls after menarche (American Psychiatric Association, 2000). This elevated prevalence for depression in women continues into adulthood, and a significant proportion of women report a worsening of depressive symptoms during the luteal phase of their menstrual cycle (American Psychiatric Association, 2000; see also Brace & McCauley, 1997 for a review). In addition, an increased risk of depression has been observed during the postpartum period, as there is a rapid decline of estrogen and progesterone in the 10-day period following delivery (see Brace & McCauley, 1997 for a review). Ultimately, there is a high association between reproductive life events and an increased risk for depression. Following this trend, research has demonstrated an increased risk for depression in women going through the menopausal transition (see Avis, 2003; Dennerstein et al., 1999; de Novaes Soares et al., 2001; Stewart & Boydell, 1993).

Since depression is so prevalent during the menopausal transition, an extensive amount of research has been conducted to investigate the significant predictors of depressive symptoms during this period.

Dennerstein and colleagues (1999) conducted a prospective study investigating the variables that contribute to negative mood during the menopausal transition. They found that negative mood was predicted by baseline reports of premenstrual complaints, negative attitudes toward aging and menopause, and having only one child. They also found that the number of vasomotor and somatic menopausal symptoms, poor self-rated health, negative feelings towards a partner, current smoking, exercising less than once a week, three or more daily hassles, and moderate or high interpersonal stress also contributed to negative mood during the menopausal transition.

Harlow and colleagues (1999) studied the predictors of depressive symptoms in premenopausal women in a cross-sectional study. They found that menstrual cycle irregularities were unassociated with current or past depression, although premenstrual syndrome (PMS) symptoms such as insomnia, headaches, lack of energy, tension, and irritability were associated with depressive symptoms. Further, women who were widowed, divorced, or separated were twice as likely as married women to have symptoms of depression, and women with one or two children had a 30 percent lower risk of suffering from a mood disorder. Although the women in this study were premenopausal, the findings can provide valuable information as to what can trigger depression during the menopausal transition.

In addition to the factors mentioned above, cognitive appraisals and attitudes about the menopause have also been found to predict depression in the perimenopausal period. Hunter and O'Dea (2001) found in a retrospective study that perceptions of

control over the menopausal transition were negatively associated with depressed mood, and perceptions of negative menopausal consequences were associated with medical help-seeking within the past month. Moreover, Choi and colleagues (2004) found that perceived health status was an important predictor in menopausal depression, as was a negative attitude toward menopause and aging.

Predictors of Hormone Replacement Therapy Use

Surprisingly, little research has been conducted on the variables that influence the use of hormone replacement therapy in menopause. Currently, research pertaining to the prediction of HRT use focuses on physical symptoms, attitudes toward HRT, and the menopausal transition.

One commonly used model in the literature investigates the severity of menopausal symptoms and whether or not HRT was sought. Genazzani and colleagues (2002) compared characteristics of women who participated in HRT to those who had not received treatment. They found that women who participated in HRT were more likely to experience menopausal symptoms for less than three years, and suggest that women tend to seek treatment for bothersome menopausal symptoms, which tend to be more frequent during the early years of menopause (Genazzani, 2002; see also Fauconnier et al., 2000). Moreover, research has demonstrated that women who start HRT tend to report more frequent hot flashes, night sweats, mood swings, irritability, and sleep problems prior to their HRT initiation (Bosworth et al., 2005). Also, research has shown that women who initiate HRT do so to relieve some of these somatic and psychological symptoms, increase well-being, and prevent disease (Collins & Landgren, 1997). Similarly, Breheny and Stephens (2001) found that postmenopausal women who had never used HRT reported fewer visits to the doctor and better health than women who

had used HRT in the past or those that were currently using HRT. A strong weakness of this model is its omission of the attitudinal component for predicting HRT. Attitudes are extremely important in the decision to seek HRT, and this particular model does not investigate how attitudes may be influencing one's decision to seek help.

A second model looks at how symptom severity and attitudes toward the menopausal transition are related. Woods and colleagues (1998) found that women who experienced more menopausal symptoms, and who rated themselves in poor health were less likely to have positive attitudes (e.g., feeling as though menopause was an unwelcome reminder of aging) toward the menopausal transition. Moreover, they found that women who had the most severe symptoms thought of menopause as an endocrine deficiency disease and were more likely to believe that menopause symptoms should be treated with hormones (Woods et al., 1998). In addition, these researchers argue that their findings suggest that women's experiences during the menopause have a significant impact on their attitudes toward the menopausal transition, and how menopausal attitudes are formed (Woods et al., 1998). Other researchers have found that positive attitudes toward menopause were associated with fewer menopausal symptoms, or vice versa (Cheng et al., 2005; Papini et al., 2002; Rotem et al., 2005).

However, a third model does include HRT outcome as well as symptom severity and attitudinal predictors. Breheny and Stephens (2001) found that attitudes toward HRT and menopause were important predictors of HRT use, and they suggest that these attitudes may outweigh the importance of health variables. They found that a positive attitude toward HRT (e.g., "HRT improves the quality of life for women following menopause") and a negative attitude toward menopause (e.g., "a woman feels like less of a woman after menopause") significantly predicted HRT use, over and above age and

health variables (Breheny & Stephens, 2001). However, this study investigated women who had completed the menopausal transition, as well as those who had not yet completed the menopausal transition. It is possible that women who had not yet completed their menopausal transition had not experienced the worst of their symptoms, which would have confounded the results. Without properly measuring symptom severity, it is hard to conclude that attitude toward the menopause is a better predictor of HRT than symptom severity, as the physical symptoms that one experiences could mediate the relationship between attitudes and the decision to seek HRT.

One study conducted by Ekström and colleagues (2003) did examine the relationship between the use of HRT and attitudes, as well as measuring physical symptoms. However, this study measured attitudes toward HRT itself, rather than attitudes toward the menopausal transition. These researchers found that participants who decided to use HRT had a greater number of psychological and physical symptoms, and were less satisfied with their overall quality of life. The researchers used a logistic regression analysis to determine the factors that accounted for the association between attitude toward HRT and the decision to use HRT. Ultimately, they found that health related factors explained the largest proportion of the association. Although this study did look at attitudes, as well as symptoms and the use of HRT, they did not directly test the potential mediating effects of menopausal symptoms on the relationship between attitudes and HRT use. Moreover, this study used attitudes toward HRT rather than attitudes toward the menopausal transition.

Predictors of Psychotherapy Use During Menopause

Given the many physical and psychological changes that women experience and the high incidence of mood disorders during the menopausal transition, one might expect

that there would be existing literature on predictors of psychotherapy or counselling use during the menopausal transition. However, a literature search was conducted using Medline and Psychlit with keywords “perimenopause” or “menopause” and “psychotherapy” or “counseling”, and the results yielded very few relevant articles. The available research does suggest that psychotherapy can be a beneficial treatment option for women suffering from both physical symptoms and psychological distress. One study compared the efficacy of Cognitive Behavioural Therapy (CBT) with a supportive group program, and found them both to be effective treatments for women going through the menopausal transition, although CBT was found to be more beneficial (Ayen & Hautzinger, 2004). Other studies have found that psychotherapy is especially helpful for treating stress during the menopausal transition (Busari, Osiki, & Uwakwe, 2004), the frequency of hot flashes and the anxiety associated with them (Hunter & Liao, 1996), general psychosocial difficulties (Greene & Hart, 1987), and helping to diminish negative beliefs during the menopausal transition (Rotem et al., 2005). Additionally, it appears that there are a number of self-help groups on the internet for women searching for support. These support groups include www.power-surge.com, <http://menopause.meetup.com/>, <http://www.menopauseadvice.com/>, among many others. Despite the numerous online support groups and the few relevant research studies, the predictors of psychotherapy use during the menopausal transition have not been systematically studied.

The Present Study

The purpose of this study was to determine the relative roles of both attitudes towards the menopause and symptom severity in predicting HRT use, anti-depressant use, and psychotherapy during the menopausal transition. As discussed above, Breheny

and Stephens (2001) found that attitudinal predictors of HRT use may outweigh the importance of health variables. However, Woods and colleagues (1998) have found that women who experience more menopausal symptoms tend to have less positive attitudes toward the menopausal transition and suggest that women's experiences during the menopause have an effect on how menopausal attitudes are formed. Although Ekström and colleagues (2003) have investigated the relationship between menopausal symptoms, attitudes toward HRT, and the decision to seek HRT, there was no research (prior to this study) examining the potential mediating effect of physical symptoms on the relationship between attitudes toward menopause and the decision to seek HRT, anti-depressant use, or psychotherapy. This study builds on prior research by investigating how symptom severity affects the relationship between attitudes toward menopause and the decision to seek HRT, anti-depressants, or psychotherapy. We hypothesized that symptom severity would serve as a significant mediator in the relationship between attitudes toward menopause and HRT and anti-depressant use. Specifically, we predicted that the relationship between attitudes and treatment-seeking would be significant, and this significant relationship would disappear after symptom severity was entered into the equation.

In addition to testing the main hypothesis, we conducted a number of supplementary or exploratory analyses to examine the role of other potential variables in treatment-seeking or menopausal distress. Specifically, we predicted that women who sought treatment would have more symptoms than women who did not seek treatment, that past reproductive variables would predict treatment-seeking during the menopause, and that our general rating of menopausal distress would predict treatment-seeking.

Method

Participants

One hundred and twenty participants were recruited to participate in this study. Participants were recruited through newspaper advertisements, flyers, and community bulletins in the Thunder Bay area. In addition, participants from other communities outside the Thunder Bay area learned of and participated in this study through word-of-mouth, or through the Lakehead University e-mail communications bulletin. The advertisements sought women who had completed the menopausal transition (i.e., had not had a menstrual period in at least 12 months).

Participants were excluded from the analyses if the subject had undergone a hysterectomy ($n = 22$), or if they had undergone a partial hysterectomy ($n = 2$). Additionally, one participant was excluded who did not indicate whether she had undergone a hysterectomy. Demographic variables for these groups can be found in Table 1.

In total, 95 participants were included in the analyses. The women ranged in age from 49 to 88 years ($M = 59.8$, $SD = 8.2$). The mean for age at which menopause began was 48.5 years ($SD = 3.7$), and mean length of the menopausal transition was 54.2 months ($SD = 43.7$). The majority of the women were from the Thunder Bay area (53.7%) or other Ontario (26.3%) regions. Approximately 70 percent of participants were either married or living in common-law relationships, 14 percent were divorced or separated, 12 percent were widowed, and 4 percent were single. The majority of participants self-identified as Caucasian (92.6%), followed by European (5.3%), and Asian (1.1%). Approximately 55 percent of participants were currently employed, 40

Table 1

Demographics – Means, Standard Deviations and Raw Frequencies (N = 120)¹

Variable	Type of menopause		
	Natural (n = 95)	Surgically- induced (n = 22)	Other (n = 3)
Means and standard deviations			
Age (Years)	M = 59.8 (SD = 8.2)	M = 61.4 (SD = 10.6)	M = 57.0 (SD = 5.2)
Age at Menopause	M = 48.5 (SD = 3.7)	M = 41.6 (SD = 7.0)	M = 49.0 (SD = 1.4)
Length of Menopausal Transition (in months)	M = 54.2 (SD = 43.7)	M = 110.1 (SD = 105.1)	M = 87.0 (SD = 63.6)
Raw frequencies (percent)			
Area:			
Thunder Bay	51 (53.7 %)	11 (50.0 %)	3 (100 %)
Other regions of Ontario	25 (26.3 %)	5 (22.7 %)	-
Eastern Canada	1 (1.1 %)	1 (4.5 %)	-
Nunavut	-	1 (4.5 %)	-
Marital Status:			
Married/Common-law	67 (70.5 %)	14 (63.6 %)	2 (66.7 %)
Divorced/Separated	13 (13.7 %)	5 (22.7 %)	-
Widowed	11 (11.6 %)	3 (13.6 %)	-
Single	4 (4.2 %)	-	1 (33.3 %)
Ethnic Background:			
Caucasian	88 (92.6 %)	21 (95.5 %)	2 (66.7 %)
European	5 (5.3 %)	-	-
Asian	1 (1.1 %)	1 (4.5 %)	-
Other	-	-	1 (33.3 %)
Employment:			
Employed	52 (54.7 %)	9 (40.9 %)	2 (66.7 %)
Retired	38 (40.0 %)	9 (40.9 %)	1 (33.3 %)
Not employed	5 (5.3 %)	4 (18.2 %)	-

Table 1 (continued)	Natural (n = 95)	Surgically- Induced (n = 22)	Other (n = 3)
Education:			
Some High School	5 (5.3 %)	3 (13.6 %)	1 (33.3%)
High school diploma	13 (13.7 %)	3 (13.6 %)	-
Some college	5 (5.3 %)	1 (4.5 %)	-
College diploma	17 (17.9 %)	7 (31.8%)	2 (66.7 %)
Some university	11 (11.6 %)	2 (9.1 %)	-
Undergraduate Degree	27 (28.4 %)	4 (18.2 %)	-
Master's Degree	15 (15.8 %)	2 (9.1 %)	-
Doctoral Degree	1 (1.1 %)	-	-
Type of Questionnaire:			
Paper	59 (62.1 %)	16 (72.7 %)	3 (100 %)
Online	36 (37.9 %)	6 (27.3 %)	-

¹Note: This table contains missing data due to unanswered items

percent were retired and approximately 5 percent were unemployed. The majority of participants had obtained their undergraduate degree as the highest level of achieved education (28.4%), followed by those achieving a college diploma (17.9%), and those achieving a Master's Degree (15.8%). Approximately 62 percent of participants filled out the paper-and-pencil version of the questionnaire, while approximately 38 percent filled the questionnaire out online.

Measures

General Information Questionnaire. In order to obtain demographic information and information about each participant's menstrual history, a General Information Questionnaire was created, and can be found in Appendix A. This questionnaire included questions tapping areas that have been found to be associated with depressive symptoms during the menopause such as perceived stress, number of children, level of exercise and work satisfaction, among others (see Choi et al., 2004; Dennerstein et al., 1999;

Dennerstein et al., 2002; Harlow et al., 1999). Also included were variables found to predict the decision to seek HRT, such as educational attainment and socioeconomic status (see Bosworth et al., 2005; Ekström et al., 2003; Fauconnier et al., 2000). In addition, this questionnaire included questions regarding the participants' sexual and reproductive history.

Attitudes. To measure participants' attitudes toward the menopausal transition in general, the Menopause Attitude Scale (MAS; Bowles, 1986) was utilized, which can be found in Appendix B. This scale consists of 20 items, or 20 pairs of adjectives describing feelings toward the menopausal transition. Each item consists of a negative adjective with a response score of 1 and a positive adjective with a response score of 7. The total score of this measure was calculated by adding the responses. The Cronbach's alpha for this measure is .96, and it has a test-retest reliability of .87. The MAS has demonstrated convergent validity with the Attitudes Toward Menopause Scale (Neugarten et al., 1963) ($r = .63$), and discriminant validity with the Attitudes Toward Old People Scale (Ivester & King, 1977) ($r = .42$).

In addition, we used the Menopause Representations Questionnaire (MRQ; Hunter & O'Dea, 2001) to measure the participants' specific attitudes toward their own menopause, which can be found in Appendix C. For the purposes of our study, the name was changed to the Menopause Experiences Questionnaire. This questionnaire differs from the MAS (mentioned above) because it measures attitudes toward a woman's unique menopausal experiences, while the MAS measures attitudes toward the menopause in general. This measure demonstrates good concurrent validity as depressed mood on the WHQ (Hunter, 1992) is associated with negative perceptions about the impact of menopause ($r = -.33$) and beliefs that it will have a long duration ($r = .33$)

(Hunter & O'Dea, 2001). The test-retest reliability for this measure ranges from .54 to .92 (Hunter & O'Dea, 2001). The symptom portion of the MRQ was scored by summing the scores for all of the items (0, 1 or 2). The remaining items are scored on a five-point scale ranging from strongly agree (5) to strongly disagree (1) and summed to provide a total score. In order to score across separate subscales, the total score from each subscale is divided by the number of items per subscale.

Symptom Severity. In order to measure the menopausal symptom severity during the menopausal transition, the Women's Health Questionnaire (WHQ; Hunter, 1992) was used. As discussed above, the WHQ taps many menopausal symptom domains and has very good reliability. The WHQ is a 37-item self-report measure that taps 9 domains: depressed mood, somatic symptoms, vasomotor, anxiety/fears, sexual behaviour, sleep problems, menstrual symptoms, memory/concentration, and attractiveness. For this project, the original WHQ items were reworded to the past tense, because we were asking participants about their past experiences during the menopausal transition. The reworded questionnaire can be found in Appendix D. This scale has good test-retest reliability with correlations ranging from .78 to .96 (Hunter, 2003). The depression scale on the WHQ demonstrates excellent concurrent validity with the General Health Questionnaire (Goldberg, 1972) ($r = .86$). The WHQ was scored by adding all items, and then reflecting the total score. In the original scoring method for the WHQ, lower scores indicate more significant distress. We reflected these scores so that higher scores represented menopausal distress.

Neuroticism. The neuroticism subscale from the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992) was included in our measures as a general measure of maladjustment and emotional distress. We included this measure to explore the

relationship between reporting menopausal complaints and neuroticism. This scale includes 12 items and can be found in Appendix E. The internal consistency of the Neuroticism domain of the NEO-FFI is .92 and demonstrates excellent convergent and divergent validity (Costa & McCrae, 1992).

Infrequency. Eight items were included from the infrequency scale of the Personality Research Form (PRF; Jackson, 1984). In the PRF, a high number of positive responses to the infrequency items indicate poor comprehension, carelessness, confusion or passive non-compliance (Jackson, 1984). This measure was included as a response style measure to detect non-purposeful responding.

Procedure

Ethical clearance for this study was obtained from Lakehead University's Senate Research Ethics Board, and recruitment materials were given clearance through the Department of Communications. All women who were interested in participating in the study received a package of questionnaires pertaining to their experiences during their menopausal transition. They were told that they would be participating in a study to determine how physical and emotional symptoms experienced during the menopause may affect one's attitudes toward the menopausal transition. The participants had the option of filling out the questionnaires in "paper and pencil" form or they could answer the questions on a secure website.

Before filling out the questionnaires, participants were required to read and fill out the consent form found in Appendix F. It was outlined that participation in the study was voluntary, that subjects could withdraw from the study at any time without penalty, and that all data would remain anonymous and confidential. After signing the consent form, participants filled out the General Information Questionnaire, MAS, MRQ, WHQ

and NEO-FFI. After the participants completed the questionnaires, they were asked to read the debriefing form found in Appendix G.

Data Analyses

Descriptive statistics were calculated and examined for statistical outliers, as recommended by Tabachnick and Fidell (2007). Outliers were defined as scores greater than three standard deviations above or below the mean. Preliminary analyses were conducted to determine the internal consistency and reliability of the measures.

In our original design, we had planned to analyze statistics on three types of treatment: HRT, anti-depressant medication, and psychotherapy. However, we did not use treatment through psychotherapy in our main analyses because too few participants sought this method of treatment during their menopausal transition ($n = 5$).

In order to use a single symptom severity scale for our analyses, a composite symptom severity score was created. This global symptom severity score was calculated by adding the Z scores from the MRQ symptom severity subscale and the WHQ total scores and dividing by 2. In addition, only one of our attitudinal measures, the MAS, yielded a global score. Therefore, we used the attitudinal subscales of the MRQ for our analyses.

As suggested by Tabachnik and Fidell (2007), we used a multiple regression procedure for our main analysis to identify whether symptom severity served as a significant mediator between menopausal attitudes and the decision to seek HRT, anti-depressants or psychotherapy. This procedure is suggested when the researcher has only two groups and sample sizes are approximately equal (Tabachnik & Fidell, 2007). In this case, the dependent variable was coded into no treatment (0) and treatment sought (1). In

addition, we used discriminant function analyses in order to obtain classification rates to supplement our multiple regression equations.

We followed the steps outlined by both Baron and Kenny (1986), and Frazier, Tix, and Barron (2004) in order to determine if symptom severity served as a significant mediator between attitudes and treatment-seeking. First, we regressed treatment seeking (the outcome variable) onto the various subscales of attitudes toward menopause (the predictor variable) in a number of regression equations to determine which attitudes were significantly related to treatment seeking. Next, we regressed symptom severity onto the significant attitudinal predictors to determine whether the mediator is related to the outcome. Finally, treatment seeking was regressed onto both the symptom severity and the significant attitudinal predictors to test whether the mediator is related to the outcome, and whether attitudes significantly contribute to treatment-seeking after symptom severity has been accounted for in the equation.

Exploratory analyses were conducted on the differences in attitudes, symptom severity, and treatment seeking for those who had experienced natural menopause and those who had undergone hysterectomies through a number of *t*-tests. Second, a multiple regression analysis was conducted to determine whether various lifetime reproductive variables (i.e., significant premenstrual distress, post-partum mood change) significantly predicted treatment seeking during the menopausal transition. Third, multiple regression analyses were conducted to determine whether demographic and sociological variables predict treatment-seeking. Finally, multiple regression analyses were conducted to explore whether reproductive and sociological variables predicted a general global rating of the menopausal distress (asked in our General Information Questionnaire).

Results

Data Screening

Prior to data analyses, the raw data for all variables were examined for the presence of obvious errors and univariate outliers. Any values exceeding three standard deviations above or below the mean were replaced with this ($M \pm 3SD$) value. In total, six values were identified and replaced with a value representing 3 standard deviations above or below the mean. Specifically, one score was changed from the MRQ symptoms subscale, one score was changed from the MRQ negative impact subscale, two scores were changed from the MRQ relief subscale, one score was changed from the MRQ control/cure subscale, and one score was changed from the WHQ depressed subscale.

In addition, we examined the infrequency scores to determine whether any participants had endorsed over three items, resulting in an invalid questionnaire. However, no questionnaires were invalidated as no participants endorsed over 3 infrequency items.

Internal Consistency and Reliability of Measures

Cronbach's alpha coefficients were calculated for all measures and their corresponding subscales. The internal consistencies, means and standard deviations of all subscales can be found in Table 2. The internal consistencies of all measures were quite good, although one subscale in the MRQ (long time; $\alpha = .35$) and one subscale from the WHQ (sex behaviour; $\alpha = .39$) did not perform well. The internal consistency of the MAS was .95, the internal consistency of the MRQ subscales ranged from .35 to .80, the internal consistency of the WHQ subscales ranged from .39 to .81. The attractiveness

Table 2

Scale Means, Standard Deviations and Internal Consistencies (n = 95)

Scale	Means	Standard Deviations	Internal Consistency
Menopause Attitude Scale	81.45	20.61	.95
Menopause Representations Questionnaire			
Symptoms	23.18	7.71	.80
Negative impact	3.22	0.70	.62
Relief	1.88	0.84	.64
New phase	2.92	0.91	.44
Short time	2.89	1.02	.77
Long time	2.67	0.80	.35
Control/cure	2.34	0.88	.61
Women's Health Questionnaire			
Depressed mood	0.25	0.21	.59
Somatic symptoms	0.40	0.26	.62
Memory/concentration	0.53	0.37	.62
Vasomotor symptoms	0.77	0.39	.81
Anxiety/fears	0.33	0.34	.74
Sex behaviour	0.52	0.33	.39
Sleep Problems	0.58	0.35	.54
Menstrual Symptoms	0.42	0.35	.69
Attractive ¹	0.29	0.45	–
NEO Five Factor Inventory	36.85	10.27	.87
Infrequency Measure	0.13	0.45	.47

¹Note: single item scale, internal consistency not calculable

subscale could not be calculated because one item was accidentally omitted from the questionnaire, leaving only one item for that particular subscale. Lastly, the internal consistency for the NEO-FFI was .87.

Main Analyses

As mentioned above, three regression analyses were used to determine whether symptom severity served as a significant mediator between menopausal attitudes and treatment seeking. Following these analyses, the mediator was tested for significance using a macro program for SPSS described in Preacher and Hayes (2004).

First, various attitudinal variables were entered into the regression analysis in a stepwise method to predict treatment-seeking. Panel 1 of Table 3 displays the standardized regression coefficients (β), R , adjusted R^2 , and R^2 change. Two attitudinal variables emerged as significant predictors of treatment-seeking: the MRQ Negative Impact subscale, adjusted $R^2 = .11$, $F(1, 82) = 11.11$, $p < .01$, and the Menopause Attitude Scale, adjusted $R^2 = .08$, $F(1, 87) = 8.48$, $p < .01$. Other subscales from the MRQ did not emerge as significant predictors of treatment-seeking. The correlations between all attitude subscales and treatment-seeking can be found in Table 4. When the MRQ Negative Impact Subscale was entered into a discriminant function analysis to predict treatment group membership (i.e., sought treatment vs. did not seek treatment), 64 percent of participants were classified correctly. Moreover, when the total scores from the MAS were entered into a discriminant function analysis to predict treatment group membership, approximately 65 percent of participants were correctly classified into their respective treatment groups.

Table 3

Summary of Regression Analyses For Testing The Mediation of Symptom Severity Between Attitudes and Treatment-Seeking (n = 95)

Variable	R	Adjusted R ²	R ² Change	β
Panel 1: Stepwise MRQ Negative Impact and Treatment-Seeking				
MRQ Negative Impact	.35	.11	.12**	-.35**
MAS Total	.30	.08	.09**	-.007**
Panel 2a: MRQ Negative Impact and Symptom Severity				
MRQ Negative Impact	.70	.48	.48**	-.70**
Panel 2b: MRQ MAS total and Symptom Severity				
MAS Total	.29	.07	.08*	-.29*
Panel 3a: Full Mediation Analysis for MRQ Negative Impact, Symptom Severity and Treatment-Seeking				
Step 1				
Symptom Severity	.38	.13	.15*	.38**
Step 2				
Symptom Severity				.33
MRQ Negative Impact	.43	.16	.04	-.20
Panel 3b: Full Mediation Analysis for MAS Total, Symptom Severity and Treatment-Seeking				
Step 1				
Symptom Severity	.38	.14	.15**	.38**
Step 2				
Symptom Severity				.279*
MAS Total	.40	.13	.01	-.15

* $p < 0.05$

** $p < 0.01$

Table 4

Correlations between Attitude Subscales and Treatment-Seeking (n = 95)

Variable Name		Treatment-Seeking
MAS Total Attitudes	<i>r</i>	-.23*
MRQ Negative Impact	<i>r</i>	-.31**
MRQ New Phase	<i>r</i>	.24*
MRQ Short Time	<i>r</i>	.00
MRQ Long Time	<i>r</i>	-.12
MRQ Control/Cure	<i>r</i>	.15
MRQ Relief	<i>r</i>	.08

* $p < .05$ ** $p < .01$

Second, the significant attitudinal predictors were each entered into a regression equation to determine if menopausal attitudes predict symptom severity (the proposed mediator). Panels 2a and 2b of Table 3 display the standardized regression coefficients (β), R , adjusted R^2 , and R^2 change for each of these regression equations. The first attitude variable, the MRQ negative impact subscale, significantly predicted symptom severity, adjusted $R^2 = .48$, $F(1, 65) = 60.98$, $p < .01$. The second attitude variable, the total scores from the MAS, also significantly predicted symptom severity, adjusted $R^2 = .06$, $F(1, 61) = 5.54$, $p < 0.05$.

Third, sequential regression analyses were performed on each significant attitudinal variable to determine whether symptom severity is a significant mediator in the relationship between menopausal attitudes and treatment seeking. Panels 3a and 3b of Table 3 display the standardized regression coefficients (β), R , adjusted R^2 , and R^2 change for each of these regression equations. For the first regression equation, the Global Symptom variable was entered first, followed by the MRQ Negative Impact subscale. When entered into the equation, the Global Symptom variable was significant, adjusted $R^2 = .13$, $F(1, 65) = 11.26$, $p < .01$. When MRQ Negative Impact was entered into the equation, it remained significant, adjusted $R^2 = .16$, $F(2, 64)$, $p < 0.01$, but did not significantly improve R^2 , indicating that the Global Symptom measure mediated the relationship between the MRQ Negative Impact subscale and Treatment-Seeking. Classification rates were determined using a discriminant function analysis, which indicated that approximately 70 percent of participants were correctly classified into their respective treatment groups using both the Global Symptom variable and MRQ Negative Impact subscale.

For the second regression equation, the Global Symptom variable was entered first, followed by the MAS Total Score variable. When entered into the equation, the Global Symptom variable was significant, adjusted $R^2 = .14$, $F(1, 61) = 10.57$, $p < .01$. When the MAS Total Score variable was entered into the equation, it remained significant, adjusted $R^2 = .13$, $F(2, 60) = 6.85$, $p < .01$, but did not significantly improve R^2 , indicating that the Global Symptom measure mediated the relationship between the MAS Total Score variable and Treatment-Seeking. When the MAS total variable and Global Symptom variable were entered into a discriminant function analysis, approximately 63 percent of participants were correctly classified into their respective treatment groups.

Finally, for both regression equations, we used a formula outlined by Frazier, Tix, and Barron (2004) to determine whether the relationship between the significant menopausal attitudes and treatment-seeking was significantly reduced after symptom severity was entered into the equation. According to Frazier et al. (2004), the mediated effect divided by its standard error yields a z score of the mediated effect. If this score is greater than 1.96, the effect is significant. For the first regression equation, $z = -3.06$, indicating that symptom severity served as a full mediator between MRQ negative impact and treatment-seeking. For the second regression equation, $z = -1.97$, indicating that symptom severity served as a full mediator between the MAS variable and treatment-seeking.

Supplementary Analyses

Comparison of Symptom Means for Women Seeking Treatment versus No Treatment

A t -test was conducted to compare whether women who had sought treatment differed from women who had not sought treatment in terms of their symptom severity

scores. Women who had sought treatment ($M = 0.24$, $SD = 0.93$) differed significantly from women who had not sought treatment ($M = -0.28$, $SD = 0.90$), $t(81) = -2.56$, $p < .05$, indicating that women who had sought treatment experienced a greater number of symptoms and/or more severe symptoms than women who had not sought treatment.

Comparison of Means for Treatment Groups

A series of one-way ANOVAs were performed to determine whether the treatment groups (i.e., no treatment, HRT treatment, and anti-depressant treatment) differed in terms of symptoms experienced or menopausal attitudes. A significant difference was found between the groups for the Global Symptom Severity variable, $F(2, 58) = 6.01$, $p < .01$, with anti-depressant treatment group experiencing the most symptoms ($M = 0.86$, $SD = 0.71$), followed by the HRT treatment group ($M = 0.22$, $SD = 0.86$), and the no treatment group ($M = -0.26$, $SD = 0.84$). Another significant difference was found between the groups for the MRQ Negative Impact variable, $F(2, 78) = 7.84$, $p < .01$, with the anti-depressant treatment group experiencing the greatest negative impact ($M = 2.62$, $SD = 0.71$), followed by the HRT treatment group ($M = 3.15$, $SD = 0.64$), and the no treatment group ($M = 3.46$, $SD = 0.61$).

Reproductive Predictors of Treatment-Seeking

A number of reproductive variables from our General Information Questionnaire were entered into a regression equation predicting treatment-seeking in a stepwise manner. These included: age when menopause began, how long the menopausal transition lasted, number of times pregnant, number of biological children, negative mood change experienced during the postpartum period, formal diagnosis of postpartum depression, number of different sexual partners, age at menarche, mood change during puberty, characteristics of menstruation, use of oral contraceptives, mood change due to

oral contraceptive use, significant trouble associated with premenstrual distress (PMS), and mood change associated with premenstrual symptoms. None of these reproductive variables emerged as significant predictors of treatment-seeking.

Social and Demographic Predictors of Treatment-Seeking

A number of social and demographic variables from our General Information Questionnaire were entered into a regression equation predicting treatment-seeking in a stepwise manner. These included: marital status, ethnicity, level of education, episode(s) of depression not associated with childbirth, whether or not participant smokes, satisfaction with social life during the menopausal transition, satisfaction with work during the menopausal transition, familial support during the menopausal transition, whether the participant was physically active during the menopausal transition. One sociological variable, satisfaction with one's social life during the menopausal transition, emerged as significant, adjusted $R^2 = .06$, $F(1, 79) = 6.5$, $p < .05$.

Comparison of Means Between Natural and Surgical Menopause

A series of *t*-tests were conducted to determine whether women who had experienced natural menopause differed significantly on the menopausal attitude variables, symptom severity, or treatment seeking. For the MAS total variable, there was a significant difference between women who had experienced natural menopause ($M = 81.44$, $SD = 20.61$) and those who had undergone hysterectomies ($M = 92.05$, $SD = 24.91$), $t(107) = -2.00$, $p < 0.05$. This indicates that women who had undergone hysterectomies had a more positive general attitude towards menopause than women who had experienced natural menopause. There was also a significant difference on the MRQ Negative Impact Subscale for women who had experienced natural menopause ($M = 3.22$, $SD = 0.70$) and those who had undergone hysterectomies ($M = 3.24$, $SD = 0.74$), t

(99) = 2.00, $p < 0.05$. This indicates that women who had experienced natural menopause felt that menopause had had a greater negative impact on their lives than women who had undergone hysterectomies.

General Rating of Menopausal Distress

A number of analyses were conducted on a variable that served as a general rating of emotional and physical stress during the menopausal transition. This variable asked participants to rate how emotionally and/or physically distressing the menopausal transition was on a seven-point Likert scale.

First, a multiple regression analysis was completed to determine whether the general menopause distress rating significantly predicted treatment-seeking. The general rating of distress did significantly predict treatment seeking, adjusted $R^2 = .13$, $F(1, 92) = 15.36$, $p < .01$.

Second, we entered 18 reproductive variables into a stepwise regression equation to predict general emotional and physical distress during the menopausal transition. One reproductive variable, length of menopausal transition, emerged as a significant predictor of general physical and emotional distress, adjusted $R^2 = .14$, $F(1, 55) = 10.07$, $p < .01$.

Third, we entered 10 social and demographic variables into a stepwise regression equation to predict general emotional and physical distress during the menopausal transition. One social variable, dissatisfaction with one's social life during the menopausal transition, emerged as a significant predictor, adjusted $R^2 = .09$, $F(1, 79) = 8.71$, $p < .01$.

NEO-FFI Scores, Menopausal Symptoms, and Treatment-Seeking

The total NEO-FFI scores were correlated with all symptom variables to determine whether neuroticism is related to symptom reporting. The neuroticism scores

were only significantly correlated with two symptom variables: WHQ sex behaviour, $r(91) = .30, p < .01$, and WHQ attractiveness $r(94) = .22, p < .05$. Next, we entered the NEO-FFI total scores into a regression equation to see whether neuroticism significantly predicted treatment-seeking, but we found that the regression equation was not significant.

Discussion

The primary aim of this study was to test symptom severity as a mediator in the relationship between menopausal attitudes and treatment-seeking. Many studies to date have found a significant relationship between menopausal attitudes and treatment-seeking, as well as symptom severity and treatment-seeking, but no such studies have investigated the possible mediation effects of symptom severity on the relationship between menopausal attitudes and treatment-seeking.

Main Hypothesis

The obtained results partially supported our main hypothesis. In our regression equations, we found that two attitudinal variables were significantly related to treatment-seeking, and our Global Symptom Severity variable. Moreover, we found that our Global Symptom Severity variable significantly predicted treatment-seeking. Finally, we found that our Global Symptom Severity variable served as a significant mediator between menopausal attitudes and treatment-seeking. Unexpectedly, there was an overall weaker relationship between attitudes and treatment-seeking, as only 2 of the 7 attitudes entered into the equation emerged as significant.

These results are analogous to Ekström and colleagues' (2003) findings, although there were some significant differences between the two studies. Although Ekström and colleagues did not directly test the possible mediation effect of symptom severity on

treatment-seeking, they did find that health-related factors explained the most variance when exploring the relationship between attitudes toward HRT and HRT use. Our study used attitudes toward menopause rather than attitudes toward HRT, and used HRT and anti-depressant medication for treatment-seeking rather than HRT alone. Despite these differences in measurement, it is clear that symptom severity is very important in explaining the relationship between attitudes and treatment-seeking, whether it is solely HRT, or a combination of HRT and anti-depressant medication.

Our finding that symptom severity serves as a mediator for treatment-seeking contradicts the findings of Breheny and Stephens (2001), who found that attitudes toward HRT predicted HRT use over and above health variables, such as physical symptoms experienced during the menopausal transition. However, when doing their analyses, these researchers used women who had passed or reached menopause. Although Breheny and Stephens (2001), found that health variables were less important as predictors than attitudes, one could argue that by using women who had not fully completed menopause, their results may have been confounded. It is possible that women who have not yet completed menopause may experience more severe symptoms in the future, and may eventually seek HRT treatment. In fact, Breheny and Stephens (2001) found that older women were significantly more likely to be using HRT than the younger women in their study. Our study analyzed women who had already passed the menopausal transition, and therefore had experienced the worst of their symptoms. Although a retrospective study introduces some bias, it ensures that participants' menopausal symptoms had dissipated, and there was no possibility that they would seek HRT in the future.

It is important to note that Breheny and Stephens (2001) measured attitudes toward HRT, while we measured attitudes toward the menopausal transition, which may

partially explain the discrepancy with our findings. Although Breheny and Stephens (2001) found that attitudes toward HRT were significant predictors of HRT use, they found that attitudes toward menopause were not. This contradicts our findings, which is likely explained by their use of a different scale to measure menopausal attitudes. The scale they used yielded a total menopausal attitude score, while we used separate subscales for different types of menopausal attitudes. Although using a measure with many subscales is more cumbersome, we felt that using such a scale would more accurately capture menopausal attitudes than a single polarized scale (i.e., positive vs. negative attitude toward the menopausal transition). It is likely that using a more comprehensive measure of menopausal attitudes yielded more information, and therefore, a stronger relationship with treatment-seeking.

Although we did find that two attitudinal predictors were related to treatment-seeking, our results indicate that attitudinal predictors were not as robust as expected. We entered many attitudinal predictors thought to be associated with treatment seeking (i.e., feelings of lack of control over the menopausal transition, feelings that menopause would last a long time, etc.) into our regression equation, but only two variables emerged as significant: general perceptions of the menopausal transition, and perceptions that menopause had a negative impact on one's life.

One possible explanation for this result is that our sample size was not large enough to detect significant attitudinal predictors if they were present. However, none of the attitudinal predictors neared a significant level, the closest being $p = .10$. It is likely that none of the other menopausal attitudes would significantly predict treatment-seeking with the addition of more participants.

A second explanation could be that we did not accurately capture menopausal attitudes with our MRQ scale, because we omitted one item on the control/cure subscale as an oversight. However, this variable did not near significance ($p = .19$), and it is unlikely that the missing item would have brought the control/cure variable to a significant level.

Third, it is possible that our study did not fully capture attitudes during the menopausal transition because of the retrospective nature of our questionnaire. It is possible that women had a different attitude toward menopause while they were going through the menopausal transition than they did when they had completed menopause. In this case, it is possible that women's attitudes may have significantly predicted treatment-seeking during menopause, but had since evolved, rendering them as non-significant predictors of treatment-seeking at the current time. However, we repeatedly reminded participants to remember and report menopausal attitudes they had at the time of their menopausal transition. Unfortunately, it is impossible to determine whether or not the participants followed through with our instructions. In the future, this problem could be remedied by conducting our study in a prospective manner, in order to track changes in menopausal attitudes as women progress through the menopausal transition.

A fourth explanation for why the attitudinal variables were not strong predictors of treatment-seeking might be because there is a difference between the attitudes of women who filled out the questionnaire online versus women who filled out the paper-and-pencil version of the questionnaire. In order to follow-up on this possibility, we conducted a number of one-way ANOVAs to ensure that these two groups of women did not differ. The two groups of women did not differ in age, employment, symptoms experienced, or any of the MRQ attitude subscales. They did, however, differ on the

MAS. This indicates that women who filled out the questionnaire online had a more negative general attitude toward menopause than women who completed the paper-and-pencil version of the questionnaire. When looking at attitudes based on their own menopausal experiences, these two groups of women did not differ. It is possible that women who preferred to complete the questionnaire online are more “computer-savvy” and have access to more information than women who completed the questionnaire through the paper-and-pencil method. If they do have more access to information, they may have a more negative attitude toward menopause because they are exposed to increased media coverage regarding menopause, health articles, or other women’s accounts of their own menopausal transition. Because the MAS already emerged as a significant attitudinal predictor, we are not concerned that the difference between the two groups of women confounded our attitudinal predictors and made them less significant.

Comparison of Symptom Means for Women Seeking Treatment vs. No Treatment

Our results indicated that women who had sought treatment experienced a greater number of symptoms than women who had not sought treatment. This is consistent with previous findings that women who start HRT tend to report more frequent hot flashes, night sweats, mood swings, irritability, and sleep problems prior to their HRT initiation (Bosworth et al., 2005).

Comparison of Means for Treatment Groups

When we compared differences in means for women who had not sought treatment, women who had sought HRT, and women who had sought anti-depressant medication, we found that these women only differed in terms of symptom severity, and one attitudinal variable: negative impact of menopause. This is consistent with most of our other findings, although the differences in means for the MAS variable was non-

significant. This is likely because the MAS variable was not as strong of a predictor of treatment-seeking when compared to the MRQ negative impact variable.

Reproductive Predictors of Treatment-Seeking

Our results indicate that past reproductive events did not predict treatment-seeking. This finding was unexpected because many previous studies have found a link between past reproductive events and depression during the menopausal transition (Dennerstein, Lehert, Burger, & Dudley, 2005; Harlow, Cohen, Otto, Spiegelman, & Cramer, 1999). It is likely that the discrepancy between our research and past literature stems from the fact that we did not measure depressive symptoms directly, but the decision to seek treatment for such symptoms if they exist. It is possible that many of the women in our sample suffered from depressive symptoms during the menopausal transition, but decided not to alleviate these symptoms by seeking HRT or anti-depressant medication. To ensure that this was not the case, we conducted a follow-up analysis to determine whether the reproductive variables predicted depressive symptoms during the menopause (measured by the WHQ depressed mood subscale). However, none of our reproductive variables emerged as significant predictors of depressed mood during the menopausal transition.

Another possible reason why we failed to find an association between past reproductive events and treatment-seeking is because this relationship was not our main focus. When we were developing our General Information Questionnaire, we were concentrating on obtaining broad background information. We included questions on past reproductive events, because we thought that analyses on these variables would be interesting and informative. However, many of these reproductive variables were composed of one item, and no definitive conclusions can be drawn without using a more

reliable measure. In the future, it would be beneficial to create and use a psychometrically-sound measure of past reproductive events when doing such an analysis, in order to ensure the reliability of the information gathered.

Social and Demographic Predictors of Treatment-Seeking

One social variable, dissatisfaction with one's social life during menopause, significantly predicted treatment-seeking during the menopausal transition. There are two possible explanations for this finding. Women who do not have an active social life might not have alternative resources (i.e., support from friends and family) for coping with the menopausal transition, so they may seek out treatment more readily. Alternatively, it is likely that women who experience less severe symptoms (and therefore do not seek treatment) may have a more active social life because they are less preoccupied with their menopausal transition, and more willing to participate in social activities. A prospective design might be helpful in disentangling these two explanations.

Comparison of Means Between Natural and Surgical Menopause

Our results showed that women who had experienced surgical menopause had a more positive general attitude toward menopause than women who had experienced natural menopause. Further, our results indicated that women who had experienced surgical menopause felt that menopause had less of a negative impact on their lives than women who had experienced natural menopause. This is perhaps because women who had undergone hysterectomies could attribute their menopausal symptoms directly to the surgical procedure, while women who had experienced natural menopause may negatively attribute their menopausal changes to aging, loss of youth, or other events in their life (i.e., diet, exercise, etc.). However, other studies examining the difference between women who had undergone hysterectomies and women who had experienced

natural menopause have reported that women who experience surgical menopause often have a more negative view of the menopausal transition (see Dennerstein, 1996; Papini, Intrieri, & Goodwin, 2002; Sievert & Espinosa-Hernandez, 2003).

General Rating of Menopausal Distress

As expected, the obtained results indicated that our general rating of physical and emotional distress significantly predicted treatment-seeking. This result is consistent with our finding that women who sought treatment experienced more menopausal symptoms than those who did not, and consistent with previous research that has reported that more severe symptoms predict HRT use (Bosworth et al., 2005).

Next, our results indicated that one reproductive variable, length of one's menopausal transition, emerged as a significant predictor of general physical and emotional distress. This finding is not surprising, as women who experience troublesome menopausal symptoms for a longer period of time are likely to experience increased physical and emotional distress.

Finally, one social and demographic variable, dissatisfaction with one's social life during the menopausal transition, emerged as a significant predictor of general physical and emotional distress. This is consistent with our findings that dissatisfaction with one's social life predicts treatment-seeking. As mentioned above, it is difficult to determine the direction of this association, and a prospective study would help clear up this relationship.

NEO-FFI Scores, Menopausal Symptoms, and Treatment-Seeking

We found that neuroticism was significantly correlated with only two symptom variables: WHQ sex behaviour and WHQ attractive. This indicates that women who tend to be more neurotic also experience more sexual symptoms during the menopausal

transition, and tend to feel less attractive than women who are less neurotic. It could be argued that attractiveness and sexuality are more closely related to each other than the other symptom variables. It is likely that more neurotic women tend to worry about their appearance to others, which would influence how attractive they feel, either physically or sexually. However, this is a correlational analysis, so no firm conclusions can be drawn.

Strengths and Limitations of the Study

It is important to note the limitations of this study, the first being the limited number of participants in the study. A larger sample would have increased the statistical power of the study. Another limitation is the retrospective nature of our research design. As in any retrospective study, our results were likely affected by retrospective bias. Although a prospective design would be ideal, time parameters did not allow for this. Instead, we tried to eliminate bias by continually reminding the participant of the time period to which the scales were referring. Finally, the majority of our participants were Caucasian, which may have influenced the results of this study. Although our recruiting materials were targeted to be inclusive and appealing to all ethnicities, few participants from other ethnicities volunteered for this study.

Despite the limitations of this study, there were a number of strengths. First, we used more than one measure for both attitudes and menopausal symptoms in order to gather a broad spectrum of both variables. Secondly, the measures we used were quite comprehensive, with many subscales, which provided us with more information to utilize in our analyses. Third, we gathered information from women who had undergone hysterectomies, which provided us with valuable and interesting information to carry out some supplementary analyses. Finally, we included psychotherapy as part of our treatment-seeking variable. Although we did not use this information in our analyses, we

did gain valuable information in that psychotherapy is not a common treatment for women suffering from distressing menopausal symptoms.

Directions for Future Research

In the future, it would be ideal to track participants' symptoms and attitudes in a prospective manner. This would clear up questions regarding some of the relationships that we found with this study, and provide interesting information as to whether one's attitudes shift over the menopausal transition. As mentioned above, it would be beneficial to have a psychometrically-sound measure of past reproductive events in order to further investigate the relationship between reproductive variables and treatment-seeking. Additionally, it would be valuable to have a more ethnically-representative sample of the population in future studies, in order to determine whether the relationships found in this study hold true for people with differing ethnicities.

Future studies in this field should concentrate on sources of menopausal information and other ways in which menopausal attitudes can be formed (other than via their physical symptoms). For example, it was interesting to find a significant difference in general menopausal attitude for women who completed our survey online versus those who did not. Future studies could explore this relationship further by investigating how influential the media and internet might be in the formation of attitudes versus the testimonies of friends and family.

In summary, the menopausal transition is a significant reproductive event for women ranging in age from 40 to 60. Moreover, it often causes a great deal of physical and emotional distress. Although previous research has focused on the importance of attitudes in women's decisions to seek HRT, our results indicated that symptom severity served as a significant mediator between menopausal attitudes and the decision to seek

HRT or anti-depressant medication. It will be important in the future for studies to use a prospective design in order to further explore the relationship between attitudes, symptom severity and treatment-seeking.

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Appendix A: General Information Questionnaire

1) Month of Birth: _____ 2) Year of Birth: _____

3) Marital status:

Married/common law Single Dating
 Divorced/separated Widowed

4) What is your ethnic background?

Caucasian/White Middle Eastern
 African-Canadian/Black East Indian
 Native-Canadian/Aboriginal European
 Hispanic/Latino Other (please specify) _____
 Asian

5) Are you currently employed? Yes No Retired

6) If you are employed, do you work: Full Time Part Time

7) Do you perform any type of regular childcare? Yes No

8) If yes, how often? _____

9) What is the highest level of education that you have achieved?

Some high school Some university
 High school diploma Undergraduate degree
 Some college Master's Degree
 College diploma Ph.D. Degree

10) How old were you when you started menopause? _____

11) Approximately how long did your menopause last? _____ years _____ months

12) Was your menopause surgically induced? Yes No

13) How many times have you been pregnant? _____

14) How many biological children do you have? _____

15) If you have ever given birth, did you experience any type of negative mood change during the postpartum period?

Yes No Unsure

16) If yes, were you formally diagnosed with postpartum depression?

Yes No

17) If yes, did you receive any treatment for your negative mood change?

Yes No

18) How many different sexual partners have you had in your entire lifetime? _____

19) Have you had a past episode of depression not associated with childbirth (prior to menopause)?

Yes No

20) If YES, how many depressive episodes? _____

21) If YES, at what age did the depressive episode(s) occur? _____

22) If YES, what kind of treatment did you receive? _____

23) Did you use anti-depressant medication prior to menopause?

Yes No

24) Did you ever take Hormone Replacement Medication prior to menopause?

Yes No

25) Prior to your menopausal symptoms, did you have a tubal ligation (i.e. have your "tubes tied")?

Yes No

26) Prior to your menopausal transition, did you have any reproductive surgery? (i.e. your ovaries removed, cyst removal from your ovaries, etc.)

Yes No

27) Prior to your menopause, did you have any surgery that would affect the endocrine system? (i.e., adrenal glands, pituitary gland, thyroid gland?)

Yes No

28) How old were you when you first started menstruating? _____

29) I believe that going through puberty affected my mood: (Circle the best answer)

Very Negatively	Slightly Negatively	In no way at all	Slightly Positively	Very Positively
0	1	2	3	4

30) Prior to your menopausal transition, were your periods (check all that apply):

Regular
Irregular
Relatively short
Relatively long
Trouble-free
Distressing and discomforting

31) Have you used oral contraceptives in the past? Yes No

32) IF YES, how long did you continue to use oral contraceptives?

33) IF YES, I believe that using oral contraceptives affected my mood: (Circle the best answer)

Very Negatively	Slightly Negatively	In no way at all	Slightly Positively	Very Positively
0	1	2	3	4

34) Prior to menopause, did you have any significant trouble with premenstrual distress (PMS)?

Yes No

35) If YES, please elaborate on your trouble with premenstrual distress (PMS):

36) I believe that my premenstrual distress (PMS) affected my mood: (Circle the best answer)

Very Negatively	Slightly Negatively	In no way at all	Slightly Positively	Very Positively
0	1	2	3	4

37) Do you Smoke? Yes No

38) Did you seek any of the following treatments during your *menopausal transition* (check all that apply):

Hormone Replacement Therapy (e.g., estrogen, progesterone, estradiol)
(common names include: Premarin, Cenestin, Estrace, Provera, Prempro, Activella)

If yes, please specify: _____

Anti-depressant medication
(examples include: Paxil, Effexor, Prozac, Celexa, Welbutrin, Trazodone, etc.)

If yes, please specify: _____

Psychotherapy or Counselling (specifically for menopausal complaints)
(examples include: Cognitive-Behavioural Therapy, marital therapy, supportive counselling, etc.). **Please do not include therapy for other issues occurring at that time (i.e., therapy specifically for divorce, anxiety, etc.)**

Please circle on a scale of 1-7 the extent to which you agree with the following statements:

39) My menopausal transition caused me a significant amount of emotional and physical stress:

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

40) I was satisfied with my social life during my menopausal transition:

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

41) I was satisfied with my line of work during my menopausal transition:

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

42) I felt like I had a lot of familial support during my menopausal transition:

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

43) I was physically active during my menopausal transition:

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

For the following questions, please circle TRUE if the statement describes you **AT THE PRESENT TIME** and FALSE if it does not describe you **AT THE PRESENT TIME**.

44) I could easily count from one to twenty-five. TRUE FALSE

45) I have never talked to anyone by telephone. TRUE FALSE

46) I make all my own clothes and shoes. TRUE FALSE

47) Things with sugar usually taste sweet to me. TRUE FALSE

48) I have never had any hair on my head. TRUE FALSE

Appendix B: Menopause Attitude Scale

INSTRUCTIONS: The following sets of adjectives describe feelings some women may experience during menopause. There are no right or wrong answers, only your own opinion. You are asked to indicate the degree to which you think the sets of adjectives are related to feelings a woman may experience during menopause.

FOR EXAMPLE

If you think that feelings a woman has during menopause are extremely related to one end of the scale, you might place your check mark as follows:

DURING MENOPAUSE A WOMAN FEELS

Good X : _____ : _____ : _____ : _____ : _____ : _____ Bad

If you think that feelings a woman has during menopause are quite related to one end of the scale, you might place your check mark as follows:

DURING MENOPAUSE A WOMAN FEELS

Good _____ : _____ : _____ : _____ : _____ : X : _____ Bad

If you think that feelings a woman has during menopause are slightly related to one end of the scale, you might place your check mark as follows:

DURING MENOPAUSE A WOMAN FEELS

Good _____ : _____ : X : _____ : _____ : _____ : _____ Bad

If you think feelings a woman has during menopause are related to both ends equally, place your check mark in the middle space.

DURING MENOPAUSE A WOMAN FEELS

Good _____ : _____ : _____ : X : _____ : _____ : _____ Bad

DURING MENOPAUSE A WOMAN FEELS:

Important	_____ : _____ : _____ : _____ : _____ : _____ : _____	Unimportant
Passive	_____ : _____ : _____ : _____ : _____ : _____ : _____	Active
Clean	_____ : _____ : _____ : _____ : _____ : _____ : _____	Dirty
Fresh	_____ : _____ : _____ : _____ : _____ : _____ : _____	Stale
Dumb	_____ : _____ : _____ : _____ : _____ : _____ : _____	Intelligent
Sharp	_____ : _____ : _____ : _____ : _____ : _____ : _____	Dull
Unsure	_____ : _____ : _____ : _____ : _____ : _____ : _____	Confident
Worthless	_____ : _____ : _____ : _____ : _____ : _____ : _____	Valuable
High	_____ : _____ : _____ : _____ : _____ : _____ : _____	Low
Strong	_____ : _____ : _____ : _____ : _____ : _____ : _____	Weak
Unattractive	_____ : _____ : _____ : _____ : _____ : _____ : _____	Attractive
Pessimistic	_____ : _____ : _____ : _____ : _____ : _____ : _____	Optimistic
Full	_____ : _____ : _____ : _____ : _____ : _____ : _____	Empty
Pleasant	_____ : _____ : _____ : _____ : _____ : _____ : _____	Unpleasant
Ugly	_____ : _____ : _____ : _____ : _____ : _____ : _____	Beautiful
Needed	_____ : _____ : _____ : _____ : _____ : _____ : _____	Unneeded
Useful	_____ : _____ : _____ : _____ : _____ : _____ : _____	Useless
Interesting	_____ : _____ : _____ : _____ : _____ : _____ : _____	Boring
Unsuccessful	_____ : _____ : _____ : _____ : _____ : _____ : _____	Successful
Alive	_____ : _____ : _____ : _____ : _____ : _____ : _____	Dead

Appendix C: Menopause Experiences Questionnaire

Please rate to what extent the following experiences were part of *your menopause* by ticking:

Yes (part of my menopause),

Uncertain (whether part of my menopause)

No (not part of my menopause).

Please remember that you are ticking the symptoms experienced during menopause, not at the current time.

	YES	UNCERTAIN	NO
Tiredness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot flashes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aches and pains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dizziness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irregular periods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling bloated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skin problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mood swings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Night sweats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Memory loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heavy periods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Breathlessness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaginal dryness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decreased sexual interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stiff joints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

We are interested in your own personal views of how you see *your menopause*. Please indicate how much you agree or disagree with the following statements about your menopause by ticking: Strongly agree, Agree, Neither agree/nor disagree, Disagree or Strongly disagree.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1) Going through menopause has had an impact on my life.	1	2	3	4	5
2) It's a relief to be free from the risk of pregnancy.	1	2	3	4	5
3) At the time, I thought my menopause would last about a year.	1	2	3	4	5
4) The menopause has affected the way I see myself as a person.	1	2	3	4	5
5) Overall, I feel that I coped reasonably well with my menopause.	1	2	3	4	5
6) I feel less confident since the menopause.	1	2	3	4	5
7) At the time, I felt my menopause would last a long time.	1	2	3	4	5
8) If I had problems during the menopause, I knew what I could do to help myself.	1	2	3	4	5
9) I felt more content during this phase of life.	1	2	3	4	5
10) The menopause has affected the way others see me.	1	2	3	4	5
11) I was pleased that periods came to an end.	1	2	3	4	5
12) At the time, I felt more emotional than I did before menopause.	1	2	3	4	5
13) At the time, I felt it was good to be moving into a new phase of life.	1	2	3	4	5
14) At the time, I was confident that I could deal with any changes that my menopause might have brought.	1	2	3	4	5
15) At the time, I believed my menopause would last a short time.	1	2	3	4	5
16) At the time, I believed that my menopause symptoms would improve in time.	1	2	3	4	5

Appendix D: Women's Health Questionnaire

Please indicate how you felt during *your menopausal transition*, by putting a circle around the number that best describes your experience for each of the following items:

Please remember that you are circling how you felt during menopause, not at the current time.

	Yes, Definitely	Yes, Sometimes	No, Not much	No, Not at all
1) I woke up early and then slept badly for the rest of the night.	1	2	3	4
2) I had very frightened or panic feelings for apparently no reason at all.	1	2	3	4
3) I felt miserable and sad.	1	2	3	4
4) I felt anxious when I went out of the house on my own.	1	2	3	4
5) I lost interest in things.	1	2	3	4
6) I got palpitations or a sensation of "butterflies" in my stomach or chest.	1	2	3	4
7) I still enjoyed the things I used to.	1	2	3	4
8) I felt that life was not worth living.	1	2	3	4
9) I felt tense or "wound up".	1	2	3	4
10) I had a good appetite.	1	2	3	4
11) I was restless and couldn't keep still.	1	2	3	4
12) I was more irritable than usual.	1	2	3	4
13) I worried about growing old.	1	2	3	4
14) I had headaches.	1	2	3	4
15) I felt more tired than usual.	1	2	3	4
16) I had dizzy spells.	1	2	3	4
17) My breasts felt tender or uncomfortable.	1	2	3	4
18) I suffered from backache or pain in my limbs.	1	2	3	4
19) I had hot flashes.	1	2	3	4
20) I was more clumsy than usual.	1	2	3	4

	Yes, Definitely	Yes, Sometimes	No, Not much	No, Not at all
22) I had abdominal cramps or discomfort.	1	2	3	4
23) I felt sick or nauseous.	1	2	3	4
24) I lost interest in sexual activity.	1	2	3	4
25) I had feelings of well-being.	1	2	3	4
26) I had heavy periods.	1	2	3	4
27) I suffered from night sweats.	1	2	3	4
28) My stomach felt bloated.	1	2	3	4
29) I had difficulty getting to sleep.	1	2	3	4
30) I often noticed pins and needles in my hands and feet.	1	2	3	4
31) I was satisfied with my sexual relationship.	1	2	3	4
32) I felt physically attractive.	1	2	3	4
33) I had difficulty concentrating.	1	2	3	4
34) As a result of vaginal dryness, sexual intercourse became uncomfortable.	1	2	3	4
35) I needed to pass urine/water more frequently than usual.	1	2	3	4
36) My memory was poor.	1	2	3	4
37) I felt lively and excitable.	1	2	3	4

Was it very difficult for you to cope with any of the above symptoms? YES
 NO

If so, which ones:

Appendix E: NEO Five Factor Inventory

Please answer the following questions as they apply to you AT THE PRESENT TIME.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) I am not a worrier.	1	2	3	4	5
2) I often feel inferior to others.	1	2	3	4	5
3) When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.	1	2	3	4	5
4) I rarely feel lonely or blue.	1	2	3	4	5
5) I often feel tense and jittery.	1	2	3	4	5
6) Sometimes I feel completely worthless.	1	2	3	4	5
7) I rarely feel anxious or nervous.	1	2	3	4	5
8) I often get angry at the way people treat me.	1	2	3	4	5
9) Too often, when things go wrong, I get discouraged and feel like giving up.	1	2	3	4	5
10) I am seldom sad or depressed.	1	2	3	4	5
11) I often feel helpless and want someone else to solve my problems.	1	2	3	4	5
12) At times I have been so ashamed I just wanted to hide.	1	2	3	4	5

For the following questions, please circle TRUE if the statement describes you **AT THE PRESENT TIME** and FALSE if it does not describe you **AT THE PRESENT TIME**.

49) I have never ridden in an automobile. TRUE FALSE

50) I try to get at least some sleep every night. TRUE FALSE

51) I have attended school at some time during my life. TRUE FALSE

Appendix F: Menopause Study Consent Form

This study is being conducted by Suzanne Stone, a Master's candidate in clinical psychology, under the supervision of Dr. D. Mazmanian of the Department of Psychology at Lakehead University. The purpose of this study is to identify how physical and emotional symptoms experienced during the menopause may affect one's attitudes towards the menopausal transition.

- Your participation in this study will involve the completion of several questionnaires that will take approximately 30 to 45 minutes.
- The questionnaires include personal questions about: the symptoms you experienced during menopause, your attitudes towards the menopausal transition, and questions about your sexual and reproductive history.
- Participation in this study is voluntary and you may withdraw at any time without explanation and without penalty.
- All records of your participation will be kept in strict confidence and any reports of the study will not identify you or anyone as a participant.
- As per university requirements, all data will be stored for seven years by Dr. D. Mazmanian at Lakehead University and will remain anonymous and confidential.
- There will be no way that your name can be connected to your responses
- There are no known physical or psychological risks associated with participating in this study.
- There will be several items in the questionnaire that appear odd or unrelated. These items are included for methodological reasons to ensure the accuracy of the data.

I have read and understood the consent form, and I agree to participate in this study under these conditions. By agreeing to participate in this study, I am affirming that I am a woman who has completed my menopausal transition.

Name (please print): _____

Signature: _____

Date: _____

-
- If you have any questions or concerns regarding this study please contact Suzanne Stone (sstone@lakeheadu.ca) or the supervisor of this study, Dr. Mazmanian (phone:343-8257, email: dwight.mazmanian@lakeheadu.ca).
 - Other collaborators in the Menopause Research Group include Dr. Kirsten Oinonen (Assistant Professor of Psychology at Lakehead University) and Dr. Verinder Sharma (Professor of Psychiatry and Professor of Obstetrics & Gynecology at the University of Western Ontario)

Appendix G: Debriefing Form

The purpose of this study is to determine how the physical and emotional symptoms that a woman experiences during menopause affects both her attitudes toward the menopausal transition and her decision to seek help for her menopausal symptoms (for example: hormone replacement therapy, anti-depressants or psychotherapy/counseling). Past research suggests that women with a greater number of distressing menopausal symptoms and a more negative attitude toward menopause tend to seek hormone replacement therapy (Breheny & Stephens, 2001).

Please be assured that all of your responses are coded to conceal your identity and that all data will remain anonymous.

Listed below are some related references which might be of interest to those who would like further information on the effect of physical and emotional symptoms of the menopause on menopausal attitudes and the decision to seek help during the menopausal transition.

If you would like more information on the results of this study, please fill in your mailing address or email address on the attached mailing label and a summary will be sent to you at the end of this study.

Thank you sincerely for taking the time to participate in this research.

Recommended Readings:

Breheny, M., & Stephens, C. (2001). The importance of attitudes in predicting hormone replacement therapy use in mid-aged women in a New Zealand community sample. *Women & Health*, 34 (1), 29-43.

Ekström, H., Esseveld, J., & Hovellius, B. (2003). Associations between attitudes toward hormone therapy and current use of it in middle-aged women. *Maturitas*, 46, 45-47.

Woods, N.F, Saver, B., & Taylor, T. (1998). Attitudes toward menopause and hormone therapy among women with access to health care. *Menopause: Journal of the North American Menopause Society*, 5(3), 178-188.

If you have any questions or concerns regarding this study please contact Suzanne Stone (sstone@lakeheadu.ca) or the supervisor of this study, Dr. Mazmanian (phone: 343-8257, email: dwright.mazmanian@lakeheadu.ca).

Other collaborators in the Menopause Research Group include Dr. Kirsten Oinonen (Assistant Professor of Psychology at Lakehead University) and Dr. Verinder Sharma (Professor of Psychiatry and Professor of Obstetrics & Gynecology at the University of Western Ontario)