Group Cognitive Behaviour Therapy
for Managing Peri-menopausal Symptoms:
Feasibility and Effectiveness of Two Delivery Methods

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Statement of Originality

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# Table of Contents

## I. EXTENDED CRITICAL REVIEW

Overview of Menopause .................................................. 1  
Age at Menopause ......................................................... 3  
Menopause Symptoms .................................................... 4  
  Vasomotor symptoms ................................................... 4  
  Urogenital problems .................................................... 7  
  Vaginal dryness ........................................................... 7  
  Reduced sexual function ............................................... 7  
  Urinary complaints .................................................... 8  
Sleep disturbance ......................................................... 8  
Mood symptoms ........................................................... 9  
Cognitive deficits ......................................................... 12  
Somatic complaints ..................................................... 12

Different Perspectives on Menopause ................................ 12  
Biomedical Perspective .................................................. 12  
Psychosocial Perspective ............................................... 14  
  Vulnerability model .................................................... 14  
  Cognitive factors ...................................................... 15  
  Other psychological factors ......................................... 17

Treatment of Menopause ................................................ 17  
Pharmacological and other Treatments ............................... 18  
  Hormone replacement therapy ..................................... 18  
  Non-hormonal agents ................................................ 18  
  Complementary and alternative medications ..................... 19  
Lifestyle and Psychological Treatments ............................... 20  
  Physical activities ..................................................... 20  
  Relaxation ............................................................... 21  
  Health / Psycho-education ......................................... 21  
  Cognitive Behaviour Therapy ....................................... 23
II. MANUSCRIPT

Introduction ..................................................................................................................... 48
Method .............................................................................................................................. 51
Study design .................................................................................................................... 51
Participants ...................................................................................................................... 51
Measures .......................................................................................................................... 51
Demographic and medical history ................................................................................ 51
Menopausal symptoms .................................................................................................. 52
Psychological well-being ......................................................................................... 52
General health .............................................................................................................. 53
Symptom diary .............................................................................................................. 54
Use of strategies .......................................................................................................... 54
Procedures ...................................................................................................................... 54
Ethics approval ............................................................................................................. 54
Data Collection ............................................................................................................ 54
Treatment ...................................................................................................................... 55
Weekly group .............................................................................................................. 55
Weekend group ........................................................................................................... 57
Date Analysis ............................................................................................................... 57
Result .............................................................................................................................. 58
Preliminary comparisons .............................................................................................. 58
Weekly vs. Weekend .................................................................................................... 58
Comparison with Population Norms ........................................................................ 58
Primary outcomes ....................................................................................................... 61
Waitlist vs. Pre-treatment ................................................. 61
Weekly vs. Weekend ..................................................... 61
Primary outcomes on intervention effects ......................... 61
Intervention effects on menopausal symptoms ................... 64
Intervention effects on psychological well-being ................. 65
Intervention effects on general health ............................... 65
Treatment compliance .................................................. 66
Attendance rate ........................................................... 66
Use of Strategies .......................................................... 66
Symptom diary ............................................................. 68
Discussion .................................................................... 69
Reference ...................................................................... 74

III. EXTENDED DISCUSSION
Effectiveness of the MMM ............................................. 80
Feasibility of the MMM .................................................. 84
Different Delivery Formats of MMM ................................. 85
Menopause Experience prior to the MMM ......................... 92
Impacts of the MMM ..................................................... 94
  Increased knowledge .................................................. 94
  Increased self-efficacy ................................................ 95
  Positive Sense of Self ................................................ 97
  Positive Attitude ......................................................... 98
Clinical Implications ..................................................... 99
Limitations .................................................................. 100
Future studies ............................................................. 102
Conclusions .................................................................. 102

IV. REFERENCE ............................................................ 104

V. APPENDICES
Appendix A Detailed Method Section .............................. 140
Appendix B Detailed Quantitative Results ......................... 157
Appendix C Qualitative Results ................................................................. 176
Appendix D Information Sheet for the MMM Evaluation Study .................. 209
Appendix E Consent Form for the MMM Evaluation Study ......................... 213
Appendix F Confirmation Letter for the MMM Interview ............................ 215
Appendix G Information Sheet for the MMM Interview .............................. 216
Appendix H Symptom Diary ..................................................................... 220
Appendix I University of Newcastle Human Research Ethics Committee
Notification of Approval I (24 September 2009) ......................................... 222
Appendix J University of Newcastle Human Research Ethics Committee
Notification of Approval II (17 December 2009) ....................................... 224
Appendix K The MMM Evaluation Study Survey (Pre-treatment) ............... 226
Appendix L The MMM Evaluation Study Survey (Follow-up) ..................... 236
Appendix M Consent Form for the MMM Interview .................................... 247
Appendix N “Aims & Scope” and “Instructions for Authors” of Psychology & Health ......................................................................................... 249
List of Tables

I. Extended Critical Review
   Table 1. Summary of literature of research about psychological intervention for menopausal symptoms .............................................. 24
   Table 2. Studies comparing the efficacy of group and individual CBT......... 38

II. Manuscript
   Table 1. Menopause Made Manageable program .................................. 56
   Table 2. Some socio-demographic characteristics, medical history and outcome variables for the Weekly and Weekend groups.............. 59
   Table 3. Overall means, standard deviation and effect sizes for outcome measures.......................................................... 62

V. Appendices
   Table A1. Standard interview questions for qualitative research.............. 147
   Table A2. Distribution of participants in weekly and weekend groups....... 149
   Table A3. Menopause Made Manageable program outline...................... 151
   Table B1. Socio-demographic characteristics, medical history and outcome variables for the weekly and weekend groups...................... 158
   Table B2. Comparison between sample and normative data of the outcome variables at baseline.................................................. 161
   Table B3. Overall means, standard deviation, effect sizes for outcome measures.......................................................... 164
   Table B4. Use of strategies factor structure and loadings....................... 172
   Table C1. The superordinate and subordinate themes for the MMM program interviews.................................................. 176
List of Figures

II. Manuscript
Figure 1. Fitted mean scores of MRS for Weekly and Weekend groups…… 64

V. Appendices
Figure A1. Pattern of contact and participation…………………………… 142
Figure A2. Timeline for five assessment periods and MMM sessions……… 148
Figure B1. Profiles of eight health domains of SF-36 of Australian population norms and our sample at baseline………………………… 162
Figure B2. Fitted mean scores of the MRS, DASS and SF-36 for Weekly and Weekend groups……………………………………………… 166
Figure B3. Fitted model means for Lifestyle Strategies by Weekly and Weekend groups…………………………………………………… 173
Figure B4. Symptom diary for Weekly and Weekend groups……………… 174
Abstract

The increased understanding of the role of behaviour, mood and cognition associated with menopause has resulted in menopause transition no longer being considered only a biological process, but also understood in a psychological and social context. This has lead to the development of psychological interventions to treat menopausal symptoms. This current pilot study aimed to evaluate the feasibility and effectiveness of two delivery formats: Weekly (ten weekly, 1.5-hour sessions) and Weekend (two 7.5-hour sessions) of a Group Cognitive Behavioural Therapy (GCBT) program for managing peri-menopausal symptoms. The Menopause Made Manageable (MMM) GCBT program has incorporated many well-established cognitive and behavioural strategies including psychoeducation, relaxation, mindfulness, lifestyle intervention, cognitive strategies, and stress management. Participants were allocated to the Weekly (n = 51) or Weekend (n = 22) group according to their preference. A battery of standardised questionnaires: the Menopause Rating Scale (MRS), the short form of the Depression Anxiety Stress Scale (DASS-21) and the short form 36-item Medical Outcome Study questionnaire (SF-36) was administered at waitlist (6-8 weeks before treatment), pre-treatment, post-treatment, 3-month follow-up and 6-month follow-up. Participants were also asked to complete a symptoms diary (daily version of the MRS) during the MMM program to monitor their menopausal symptoms. Changes in mean scores over five assessment time points and between two groups were evaluated using a Linear Mixed Model. The current study design used participants as their own controls in the waiting control time period, where no significant change was identified. The results indicated that both Weekly and Weekend MMM program were effective in improving menopause-related symptoms ($d = 0.66 – 0.86$) and psychological symptoms ($d = 0.19 – 0.51$). The treatment gains were maintained at least for 6 months. No significant group
effect was identified in any of the outcome variables. Further analysis on the symptoms diary also revealed that both Weekly and Weekend MMM improved over time at a similar pace during the treatment program. The second part of the study focused on evaluating the MMM program using qualitative method. Semi-structured interviews were used to explore participants’ experience of the MMM program, in both Weekly and Weekend formats. Interpretative phenomenological analysis (IPA) was chosen to analyses the data because it is particularly suitable to explore the research topic in detail from participant’s perspective. Five superordinate themes were found: (1) Pre MMM: A Life with Chaos; (2) MMM Answered My Questions; (3) MMM Made Me a Stronger Woman; (4) The Power of Group; and (5) Need for Options of Delivery Format. Generally, the findings suggested that prior to the group, the women found the menopausal symptoms overwhelming and pervasive. All of them wanted to know more about menopause but had experienced difficulty accessing information and support. After the treatment, all of the interviewees expressed having increased knowledge and self-confidence in managing their symptoms. Despite the perceived disadvantages of the intensive format, the Weekend MMM has provided an option for the women who could not attend weekly treatment sessions. The results of this study suggested that the MMM GCBT program has the potential to be an effective and feasible, non-pharmacological treatment alternative for managing menopausal symptoms. Since both Weekly and Weekend groups showed similar results, the MMM program could be delivered in either format to suit clients’ needs and preference. Similar to previous studies, the current findings support the use of GCBT for managing peri-menopause symptoms.
Group Cognitive Behaviour Therapy for Managing Peri-menopausal Symptoms: Feasibility and Effectiveness of Two Delivery Methods

The increased understanding of the role of behaviour, mood and cognition associated with menopause has resulted in menopause transition no longer being considered only a biological process, but also understood in a psychological and social context. This has lead to the development of psychological interventions to treat menopausal symptoms. The current pilot study aimed to evaluate the feasibility and effectiveness of two delivery formats of a Group Cognitive Behaviour Therapy (GCBT) program for managing peri-menopausal symptoms. The literature review includes definitions, stages, symptoms, and different models of menopause. A critical review on treatments for menopause, including pharmacological and psychological treatments, is conducted. This is followed by a more detailed discussion of Cognitive Behaviour Therapy and its different formats of delivery.

Overview of Menopause

Menopause typically occurs for women between the ages of 45 and 55, when the cessation of ovarian follicular activity leads to the end of menstruation (World Health Organisation Scientific Group, 1996). While there are a variety of terms and definitions to describe different time periods associated with menopause, the most widely used ones are first proposed by the World Health Organisation (WHO) Scientific Group on Research in 1981 and subsequently re-stated in the report “Research on the Menopause in the 1990s” published in 1996.

According to the WHO Scientific Group (1996), “natural menopause” occurs due to the biological aging process, while “induced menopause” occurs after medical treatment such as surgical removal of ovaries, radiation or chemotherapy. Menopause occurs when menstruation ceases permanently, thus, the final menstrual period (FMP) is
used as a reference point for different time periods around menopause. However, it is impossible to define that menstrual period as “final” until there is no further menstruation. Therefore, menopause can only be diagnosed retrospectively after 12 consecutive months of amenorrhoea, given such cessation is not due to pathological causes (S. McKinlay, 1996). The term “menopause transition” refers to the period of time before the FMP when the menstrual cycles become irregular. “Peri-menopause” covers the period of “menopause transition”, as well as the first year after menopause. “Post-menopause” is generally defined as the time after FMP, with no definite ending time assigned by the WHO. Despite the wide use of those definitions in research, they were criticised for being too vague with no clear starting and ending time point for some stages (Soules et al., 2001).

Subsequently, a seven-stages model was developed in the Stages of Reproductive Aging Workshop (STRAW; Soules, et al., 2001), which included detailed descriptions of the characteristics of each stage in terms of terminology, duration, menstrual patterns and endocrine concentration level. Using FMP as an “anchor” (stage 0), the model covers the reproductive phase (stages -5 to -3), menopausal transition (stages -2 and -1) and post-menopause (stage +1 and +2). Despite the clear staging sequence in the model, most of the researchers including the area experts in the STRAW acknowledged individual variability in the trajectory of menopause stages. For example, some women may miss some stages, or go back and forth between stages (Mansfield, Carey, Anderson, Barsom, & Koch, 2004; Soules, et al., 2001).

After continual assessment and review in the subsequent years (Harlow et al., 2006; Johnston et al., 2006; Randolph et al., 2006), the STRAW reproductive stages model and its definition of terms appears to be widely accepted and has been adopted in the majority of epidemiological studies. Despite this, a number of studies, including
some large longitudinal studies, has continued to use a variety of definitions for terms and nomenclature for reproductive stages. For instance, a large prospective population-based study, the Melbourne Women’s Mid-Life Health Project (MWMHP; Guthrie, Dennerstein, Taffe, Lehert, & Burger, 2004) adopted a slightly different definition in terms of the time period of amenorrhoea for late menopause transition from that of the STRAW. Another large longitudinal study, the “Study of Women’s Health Across the Nation” (SWAN) employed a similar, but somewhat simplified menopausal status classification system which is based only on menstrual bleeding patterns (Bromberger et al., 2007; Gold et al., 2000). Differences in definitions, type of data used to assess menopause status and how these data were collected introduce methodological issues that have to be considered when interpreting results (Harlow, et al., 2006).

Age at Menopause

According to the WHO report in 1996, the estimated mean age at natural menopause is 51 years of age in industrialised societies. One recent review examining the relationship between culture and menopause suggested that the mean age at menopause reported by studies from different countries varied, but was in a narrow range (Melby, Lock, & Kaufert, 2005). Several countries including Italy, Iran and Slovenia reported mean age slightly over 50 years (range 50.3 – 50.9 years). Other populations including Koreans, Lebanese, Singaporean, Korean living in China, Greek, Moroccan, Mexican, Taiwanese and Turkish have mean / median age at menopause ranging from 47 to 50 years. One of the Turkish studies reported the youngest menopausal mean age of 45.8 years. An Australian 9-year prospective population-based study reported a relatively high mean menopausal age (53 years) when compared to other studies (Guthrie, et al., 2004). It is noteworthy that these are just estimated mean ages reported by studies that are not free from methodological limitations.
including sample bias, small sample sizes and questionable accuracy of retrospective recall.

There is no accurate estimation for the age for premature menopause but the general consent in the field is that women who have their FMP before 40 years of age are considered premature menopausal (World Health Organisation Scientific Group, 1996). A number of factors that can influence the age at menopause have been identified. Smoking is one of the most researched factors that has been consistently found to be negatively associated with the age at menopause, regardless of ethnicity (Bromberger et al., 1997; S. M. McKinlay, Bifano, & McKinlay, 1985). Other factors have been identified but are not consistent across studies include: age at menarche, menstrual bleeding length, Body Mass Index (BMI), education level, employment status, marital status, prior oral contraceptive use, family history, medical history, and ethnic origin (Melby, et al., 2005). It appears that some environmental and genetic factors may have impact on menopausal transition.

**Menopausal Symptoms**

Midlife women attribute a variety of health issues that they experience during peri-menopause as “menopausal symptoms”, though the link between some of the symptoms and menopausal transition is not clear. Some symptoms may not be directly associated with menopause, but could be secondary to other menopausal symptoms. It is noted that the interpretations of findings from the research on symptoms could be limited by the methodological constraints such as use of non-standardised assessment tools, methods of data collection, and time of data reporting (Nelson, 2008).

**Vasomotor symptoms.** Hot flushes are often the first noticeable symptom that signify the beginning of menopause. Hot flushes are described as brief, transient episodes of a warm sensation that can gradually become intense heat, which can be felt
on the face and upper body, and may be accompanied by palpitations, perspiration, redness and anxiety. Sometimes they can be succeeded by a feeling of chill (Nelson, 2008; Santoro et al., 2004). Hot flushes can also occur during sleep, where they are termed “night sweats” because they are always accompanied by perspiration. Most women find night sweats bothersome because they are often awakened by them whenever they occur. The term “vasomotor symptoms” generally refer to both hot flushes and night sweats (Santoro, et al., 2004). The mechanism behind hot flushes is still not clear, but there are some physiological factors that are potentially involved in the process. It is hypothesised that vasomotor symptoms are triggered by the decreased oestrogen levels and increased follicle stimulating hormone (FSH), which then lowers the hypothalamic set point via neurotransmitters (Freedman & Krell, 1999).

The incidence of vasomotor symptoms generally increases when menopause progresses, with the highest rate during the first two years of post-menopause, and gradually decreases after that (Santoro, et al., 2004). In the United States, a longitudinal, population-based study which consisted of 454 participants found that approximately 75% of women who transit from peri-menopause to post-menopause reported having hot flushes (Avis, Crawford, & McKinlay, 1997). The prevalence of hot flushes varies according to ethnicity. The SWAN, a longitudinal community-based survey that involved five ethnic groups in the study population, revealed the highest prevalence rate was reported by African American (45.6%), followed by Hispanics (35.4%), Caucasians (31.2%), Chinese (20.5%) and the lowest rate reported by Japanese women (17.6%; Gold, et al., 2000). According to MWMHP from Australia (Guthrie, et al., 2004), approximately 75% of the cohort reported being disturbed by hot flushes. Similar prevalence rates were reported in Canada (68%; Hilditch, Chen, Norton, & Lewis, 1999), Turkey (74%; Neslihan Carda et al., 1998), Tanzania (80%; Moore & Kombe,
(1991) and the United Kingdom (83%; G. Smith & Waters, 1983). Contrarily, some South-East Asian countries reported much lower prevalence rates (i.e. approximately 50% or less; Boulet, Oddens, Lehert, Vemer, & Visser, 1994). The comparison between prevalence rates from different studies should be interpreted with caution due to methodological inconsistencies including recall period, inclusion of symptoms (i.e. hot flushes and/or night sweats), and age range of the study population (Melby, et al., 2005).

Some risk factors have been identified for vasomotor symptoms. According to the results from two large, population-based studies, MWMHP and SWAN (Gold, et al., 2000; Guthrie, et al., 2004), premenstrual complaints are positively associated with hot flushes. Another physical factor, BMI, was initially believed to be negatively associated with hot flushes, based on the postulation that women with high BMI would have more stable levels of oestrogen because more oestradiol can be produced from body fat. Despite being supported by a small amount of research (Sievert et al., 2002), recent large population-based studies have revealed opposite results. Results from the SWAN study suggested that women with high BMI (≥ 27) were at greater risk of having more hot flushes (Gold, et al., 2000). This positive correlation was supported by other studies (Freeman, Sammel, Lin, Liu, & Gracia, 2011; Gallicchio et al., 2005; Malacara et al., 2002; Whiteman et al., 2003). Thurston and colleagues (Thurston et al., 2009) suggested that instead of the level of BMI, it is the body fat gained during the menopausal transition that affects hot flushes. Smoking was another risk factor that has been consistently found in research to be associated with hot flushes (Gold, et al., 2000; Schwingl, Hulka, & Harlow, 1994; Staropoli, Flaws, Bush, & Moulton, 1998; Whiteman, et al., 2003). Some lifestyle/social factors including less physical activity, low socioeconomic status, and caffeine and alcohol consumption have been identified as
risk factors for hot flushes in some studies (e.g. Bromberger, et al., 2007; Schwingl, et al., 1994; Staropoli, et al., 1998), but not in others (e.g. Guthrie, Dennerstein, Hopper, & Burger, 1996; Hardy, Kuh, & Wadsworth, 2000).

**Urogenital problems.** A lot of urogenital problems including vaginal dryness, urinary complaints, decreased sexual desire and responsivity, and dyspareunia are significantly associated with the menopause transition. One of the explanations is that the reduced level of oestrogen and androgens associated with menopause has altered the physiology of the vagina, resulting in decreased blood flow and fluid secretion in the vagina, an increase in vaginal pH, reduced vaginal lactobacillus and changed epithelial morphology (Sturdee & Panay, 2010). Some atrophic symptoms in the lower urinary tract may occur concurrently because vaginal health and urinary tract health are interrelated (Pastore, Carter, Hulka, & Wells, 2004).

**Vaginal dryness.** The prevalence rates for vaginal dryness appear to increase as menopause progresses from pre-menopause to post-menopause (L. Dennerstein, Dudley, Hopper, Guthrie, & Burger, 2000). It was estimated that up to one third of the women at menopause transition experience vagina dryness (Nelson et al., 2005). Vaginal dryness is one of the most notable symptoms of vaginal atrophy, which have considerable impact on sexual health. When vaginal dryness is evident, women may experience pain during sexual intercourse and other altered genital sensations. All these factors are likely to cause other sexual problems such as a decline in sexual desire, arousal and satisfaction (Greendale, Hogan, & Shumaker, 1996; Sturdee & Panay, 2010).

**Reduced sexual function.** Vaginal health plays an essential role in sexual function. It was noted that studies varied in sexual function measurement, which included frequency of sexual activities, sexual responsivity, libido and discomfort.
during intercourse. Despite the methodological differences, past studies including both cohort and cross-sectional studies generally supported the notion that the prevalence of sexual dysfunction increases when women transit through menopausal stages (L. Dennerstein, et al., 2000; Gold, et al., 2000; Nelson, et al., 2005; Porter, Penney, Russell, Russell, & Templeton, 1996). One of the longitudinal, population-based studies, the MWMHP, found that the prevalence of sexual dysfunction in terms of sexual desire, sexual activity frequency, sexual arousal and orgasm was estimated to be in the range of 42%-88% among menopausal women (L. Dennerstein, Dudley, & Burger, 2001; L. Dennerstein, et al., 2000).

*Urinary complaints.* Some urinary problems include urinary incontinence (i.e. increased frequency and urgency) and urinary tract infection. Urinary complaints were shown to be associated with menopause in one of the cohorts (W. J. Brown, Mishra, & Dobson, 2002) but not in the other two (L. Dennerstein, et al., 2001; L. Dennerstein, et al., 2000). Other cross-sectional studies showed mixed results (Greendale, Lee, & Arriola, 1999; Nelson, et al., 2005). The prevalence rate of urinary incontinence was around 10-36% for premenopausal women; 17-39% for perimenopausal women; and 14-36% for postmenopausal women reported in various studies (Nelson, 2008).

*Sleep disturbance.* Sleep disturbance is one of the most common complaints among menopausal women, and it can be in the form of morning awakening, intermittent awakenings and difficulty falling asleep. Population-based studies report an estimated prevalence rate of sleep complaints among perimenopausal and postmenopausal women ranging from 40% to 64% (W. J. Brown, et al., 2002; L. Dennerstein, et al., 2000; Kravitz et al., 2003; Kuh, Wadsworth, & Hardy, 1997; Owens & Matthews, 1998). Two population-base studies from Australia (W. J. Brown, et al., 2002; L. Dennerstein, et al., 2000), together with other cross-sectional studies
(Bromberger et al., 2001; W. J. Brown, et al., 2002; L. Dennerstein et al., 1993; Gold, et al., 2000; Kuh, et al., 1997; S. M. McKinlay, Brambilla, & Posner, 1992), supported the association between sleeping disturbance and menopausal stages, with severity increasing as menopausal stages progress. However, results from a factor analysis study did not find this association (Barth Olofsson & Collins, 2000).

Sleep disturbance has been found to be strongly correlated with vasomotor symptoms in some cross-sectional studies (L. Dennerstein, et al., 2000; Ohayon, 2006). Sleep studies using objective sleep measurement, polysomnograpgy (PSG), supported the casual relationship between night sweats and nocturnal awakenings (Erlik, Tataryn, & Meldrum, 1981; Shaver, Giblin, Lentz, & Lee, 1988). However, there is also evidence suggesting that not all women with sleep disturbance reported having hot flushes (Polo-Kantola, Erkkola, Helenius, Irla, & Polo, 1998), and some cross-sectional studies did not find this association (Kravitz, et al., 2003; Mitchell & Woods, 1996). Therefore, this implies that, apart from hot flushes, there are other factors such as work, family commitment and even sleep-disordered breathing that could possibly contribute to reduced sleep quality in midlife women (Åkerstedt et al., 2002; Shaver, 2002).

Insufficient sleep can negatively affect daily functioning, cognitive functioning, mood, quality of life and cause other health related consequences such as diabetes, obesity, cardiovascular diseases and metabolic syndrome (Pilcher & Huffcutt, 1996; Polo-Kantola, Saaresranta, & Polo, 2001; Spiegel, Leproult, & Van Cauter, 1999; Spiegel, Sheridan, & Van Cauter, 2002). Sleep disturbance is also associated with higher levels of anxiety, depression and stress (Thurston, Blumenthal, Babyak, & Sherwood, 2006).

**Mood symptoms.** The common mood symptoms at menopausal transition are
depressive and anxiety symptoms, as well as mood swings. Among these, midlife depression has attracted most research. Whether menopausal women are at higher risk for developing depression is still controversial. Cohort studies suggested mixed results (L. Dennerstein, Lehert, Burger, & Dudley, 1999; Hardy & Kuh, 2002; Mishra, Brown, & Dobson, 2003; Mitchell & Woods, 1996), with few supporting the association between depression and menopausal status (Bromberger, et al., 2007; Freeman et al., 2004; Maartens, Knottnerus, & Pop, 2002). According to the data from the SWAN study, women are more likely to report a higher depression score (i.e. Centre for Epidemiologic Studies Depression scale) after they reach peri-menopause, when compared to their scores at pre-menopause (Bromberger, et al., 2007). Several prospective studies have also demonstrated that women who had a history of depression before menopause are at high risk of having another episode during their menopausal transition (Schmidt, Haq, & Rubinow, 2004).

There is postulation that low levels of reproductive hormones during menopause transition is a risk factor for developing depressive symptoms, through the effects on neurotransmitters such as serotonin and norepinephrine (McEwen & Alves, 1999). Some researchers have argued that women are vulnerable to developing mood symptoms during times of hormonal fluctuation, such as premenstrual and postpartum time periods (Soares & Frey, 2010). Therefore, menopausal transition could be one of the “windows of vulnerability” for women (Soares, 2008).

The relationship between mood symptoms and other menopausal symptoms such as vasomotor symptoms, sleep disturbance, and somatic complaints are complex. For instance, hot flushes have a substantial effect on sleep and depression (Joffe et al., 2002), and sleep disturbance can be a risk factor for depression and anxiety (Baker, Simpson, & Dawson, 1997). All these factors can mediate or exacerbate each other’s
impact on the life of women. In general, positive association were found between level of distress and sleep difficulties, as well as vasomotor symptoms (e.g. Baker, et al., 1997; Bromberger, et al., 2001).

The SWAN examined the association between psychological distress (including symptoms related to anxiety, depression and irritability) between natural menopause in a large multiethnic community sample (Bromberger, et al., 2001). In contrast to the common notion of impact of ethnic background on menopausal-related psychological distress, this study result did not find a strong cultural effect on the rate of distress. Instead, the menopausal status was found to be a strong predictor of the level of distress, with greater risk at peri-menopause than pre-menopause, and is likely to lower towards post-menopause. The specific risk factors related to the each menopause status were not fully understood. Some researchers suggested the level of distress is related to the cognitive process. At the beginning of menopause, women are more likely to feel negative about the symptoms and other changes in midlife. However, over time, they gradually develop a new definition of self, which described as “inner organisation” by developmental psychologist (Derry, 2004; Notman, 1990). This notion is similar to the recent research development regarding women’s attitude toward menopause. Attitude and its relation to menopausal symptoms are reviewed in the later section.

In addition to menopause, stressors such as divorce, unemployment and empty nest syndrome can also contribute to mood changes in midlife women (Kaufert, Gilbert, & Tate, 1992). Several studies have suggested that these stressors assert greater influence on mood than menopausal stages (Bromberger & Matthews, 1996; Kaufert, et al., 1992; J. B. McKinlay, McKinlay, & Brambilla, 1987). If left untreated, severe mood symptoms can significantly impair women’s daily functioning, and possibly, cause a decrease in quality of life (QoL; Verster, Pandi-Perumal, & Streiner, 2008).
**Cognitive deficits.** Decline in cognitive functioning including memory and concentration are common menopausal complaints. It was postulated that low oestrogen levels would have a negative impact on brain function, particularly the hippocampus which is involved with memory (Rapp et al., 2003). However, this hypothesis has not been substantiated by medical research (Kritz-Silverstein & Barrett-Connor, 2002). Moreover, cross-sectional studies found no association between cognitive problems and menopausal transition (Gold, et al., 2000; Kuh, et al., 1997; Porter, et al., 1996). One cohort study suggested that the cognitive functioning of midlife women was more likely to be associated with perceived health status, mood and stress, rather than menopausal stages (Woods, Mitchell, & Adams, 2000).

**Somatic complaints.** Common somatic complaints are headaches/migraines, back pain, exhaustion, stiff and/or aching joints, bodily pain and breast tenderness. Two large cohort studies found an association between increased somatic complaints (W. J. Brown, et al., 2002; L. Dennerstein, et al., 2000) and menopausal transition but one did not (Mitchell & Woods, 1996). On the contrary, one review found that the majority of cross-sectional studies reported no significant difference in prevalence rates of somatic complaints in premenopausal and peri-/post-menopausal stages (Nelson, et al., 2005). In addition to the stages of menopause, other health-related factors including health status and health behaviours may also affect reporting of somatic symptoms (Mitchell & Woods, 2010). For instance, the negative impact of chronic pain and physical discomforts on QoL has been consistently reported in studies on general and clinical population (Mitchell & Woods, 2010; Stewart et al., 1989).

**Different Perspectives on Menopause**

**Biomedical Perspective**

Two decades ago, research on menopause was predominately based on
biomedical models (Rostosky & Travis, 1996). From a biomedical perspective, the physiological changes at menopausal transition became the focus of research. The most prominent hormonal change that reflects the beginning of menopause transition is marked by the reduction of inhibin B, which is a hormone that inhibits the secretion of FSH from the pituitary gland (Burger, Dudley, Robertson, & Dennerstein, 2002). The decrease of inhibin B is considered to be an indicator of the cessation of ovarian follicular function, which is due to the extremely small number of follicles that remain in the ovary. The menstrual irregularity is believed to be associated with the reduction in concentration of inhibin B and increase of FSH. The level of oestradiol, one type of oestrogen, does not reduce until FMP. Despite the reduction of oestradiol, the oestrogen level remains relatively stable throughout the menopause transition because another type of oestrogen, namely oestrone, starts to be produced in the ovaries and bodily fat. It is noted that this is only a general description that cover most of the substantial hormonal changes during menopausal transition. In reality, the circulation of hormonal levels can fluctuate considerably throughout menopausal stages (Burger, et al., 2002). Moreover, some hormonal changes begin in mid-30s and occur over 15-20 years during the transition period (Prior, 1998). Indeed, the endocrinology in the menopause transition is relatively complex and a detailed discussion is beyond the scope of this paper.

Some researchers argue that under the biomedical paradigm, menopause is seen as a “disease” that consists of a list of physical and emotional symptoms that should be treated (Hunter & O'Dea, 1997; Rostosky & Travis, 1996). This implies that women are more prone to use medical treatment, primarily Hormone Replacement Therapy (HRT), in an attempt to “cure” their menopausal symptoms which they regard as signs of sickness. The promotion of HRT has not only promoted its usage but also created a
negative view of menopause. As Hunter and O’Dea (1997) suggested, the use of medication “discourages women from exploring their experiences of the menopause and developing alternative perspectives” (p. 201). Some feminists argue that the biomedical model has asserted or exacerbated a negative stereotype of menopausal women because of its emphasis on the negative symptoms and undesirable health outcomes (Rostosky & Travis, 1996). Furthermore, despite the similar physiological processes underlying menopausal transition, women’s individual experiences of menopause could be quite different due to various psychosocial factors. It appears that menopause does not only mean just a physiological process to the women, it also represents a psychological and social adjustments at this particular period of transition in life (Derry, 2004; Hunter & Rendall, 2007).

Psychosocial Perspective

The number of menopause studies taking psychosocial perspectives has increased rapidly in the past decade and a small number of psychological models for menopause have been developed (Towey, Bundy, & Cordingley, 2006).

Vulnerability model. One of the earliest psychological models was proposed by Greene (1984). He adapted Brown and Harris’ vulnerability model of depression to menopause, and emphasised that physiological change and midlife life stressors are important “vulnerability factors” for menopausal women. The relationship between stress and vasomotor symptoms was well documented in past research. One early study was conducted by Gannon and colleagues (1987), who examined the relationship between hot flushes with stress levels and other potential risk factors such as ambient temperature, caffeine, alcohol and nicotine intake using correlation analyses. Results indicated that only daily stress was significantly related to the severity of hot flushes. Some researchers argued that the stress level probably had only increased the reporting
of hot flushes, but not the actual severity of them. Swartzman and colleagues (Swartzman, Edelberg, & Kemmann, 1990) refuted this hypothesis with the findings of their research, which involved psychophysiological monitoring of hot flushes when women were and were not under laboratory induced stress. No reporting bias was identified. Slade and Amaee (1995) further suggested that psychological distress, particularly anxiety, can increase the frequency and duration of hot flushes via associative learning of pairing the physiological states of the two conditions.

Research suggests that stress increases significantly during the peri-menopause period and hot flushes can negatively affect women’s ability to cope with stress (Binfa et al., 2004; Nedstrand, Wijma, Lindgren, & Hammar, 1998). Stress management could be beneficial to menopausal women, through the reduction of psychophysiological arousal. Anxiety, one of the psychological reactions to stress, was also found to be associated with the occurrence and severity of hot flushes. Freeman and colleagues examined the association of anxiety and hot flushes in menopausal women (Freeman et al., 2005). Results indicated that women with high levels of anxiety were more likely to report hot flushes when compared to their counterparts with anxiety in the normal range.

**Cognitive Factors.** Hunter and Mann (2010) proposed a cognitive model of menopausal hot flushes and night sweats. The model was based on symptom perception theory, self-regulation model of health and illness, and cognitive-behavioural theory. The model emphasised that individual’s experience of menopause not only depends on biological factors, but the psychological, social and cultural factors also play important roles in constructing the experience. For instance, most of the women experience some kind of physical discomfort in their midlife, but how they perceive and attribute these physical sensations can be different. The perceived level of severity can also depend on the cognitive appraisal of individuals, which subsequently influences behavioural
response to that physical sensation. That is, people would seek help if they thought their hot flushes are severe (Ayers, Forshaw, & Hunter, 2011).

Although there have been no published studies regarding the validation of the cognitive model of hot flushes, the impact of attitude toward menopause on the severity of symptoms has been well supported in past literature. Several self-reported questionnaires have been developed to assess women’s attitudes toward menopause, such as the Menopause Attitudes Scale (MAS; Bowles, 1986) and Attitude Towards Menopause Scale (ATM; Neugarten, Wood, Kraines, & Loomis, 1963). A recent systematic review indicated that women with more negative attitudes toward menopause in general experienced more severe symptoms, with the research focusing on vasomotor symptoms. The only prospective study included in the review reported that women who had a prior negative view of menopause were more likely to suffer from higher frequency of hot flushes (Avis, et al., 1997). The results of the review have to be carefully interpreted because the method for assessing attitude and symptoms varied across studies. For instance, some studies used standardised questionnaire (e.g. MAS, ATM); some used semi-structured interviews and some used items developed by the authors based on past literature. Cultural background is believed to have a great influence on people’s attitudes. Therefore, culture appropriateness was an important issue to consider when designing or using the measures. Better measurements could produce more validated and reliable results that allow comparison between studies from different cultures, thus gain more understanding of the association between culture, attitude and their influence on menopausal symptoms.

In addition to women’s attitudes toward menopause in general, women’s attitude toward and perception of their own menopause was also associated with the severity of symptoms. Perceived personal control over menopausal symptoms is one of the
cognitive factors that could have an impact on individual’s menopause experience. Women who perceive themselves as having little control over symptoms were likely to report more severe symptoms and distress (Hanisch, Hantsoo, Freeman, Sullivan, & Coyne, 2008; Hunter & Liao, 1995; Reynolds, 2002). A small number of standardised self-report questionnaires have been developed to assess the thoughts and beliefs associated with menopause (Menopause Representations Questionnaire [MRQ]), or specifically with vasomotor symptoms (Hot Flush Belief Scale [HFBS]; Hunter & O’Dea, 2001; Rendall, Simonds, & Hunter, 2008). Correlation analysis of the MRQ and the HFBS revealed that women who held negative beliefs about vasomotor symptoms had lower perceived personal control, and subsequently believed that they would suffer from negative consequences brought on by menopause (Rendall, et al., 2008).

**Other psychosocial factors.** Menopause is considered a “life transition” because many changes occur during this particular period of life. Apart from the physiological changes, there are a lot of psychological and social stressors such as changing roles, and death of parents, divorce that place women in a vulnerable position (Thurston, et al., 2006). Psychological distress in terms of depression, anxiety, sense of loss, and loneliness could be the result of these significant changes (Deeks, 2003; Northrup, 2006). In sum, many biopsychosocial risk factors could work collectively to place a significant impact on women’s QoL. Therefore, the management of menopause needs to take a multidimensional, holistic approach.

**Treatment for Menopause**

Hormone replacement therapy (HRT) was the primary treatment for menopausal symptoms, mainly hot flushes (MacLennan, Broadbent, Lester, & Moore, 2004). However, with increasing concerns regarding the potential health risks caused by HRT, other treatments such as anti-depressants and complementary and alternative medicines
(CAM) emerged (Nelson et al., 2006; R. E. Williams et al., 2007). At the same time, evidence for psychological / lifestyle interventions such as physical exercise, relaxation, psychoeducation and Cognitive Behaviour Therapy (CBT) have been increasing (e.g. Chiesa & Serretti, 2009; Daley, Stokes-Lampard, & MacArthur, 2009; Hunter & Liao, 1996; Tremblay, Sheeran, & Aranda, 2008). The non-pharmacological interventions have provided women, including breast cancer survivors, some alternative treatment options.

**Pharmacological and other Treatments**

**Hormone replacement therapy.** HRT is a commonly used treatment for severe hot flushes (Rossouw et al., 2002). A Cochrane review that included 24 randomised controlled trials (RCTs) found that HRT was effective in reducing the frequency of vasomotor symptoms by 75% (MacLennan, et al., 2004). However, at the same time, side effects from HRT such as breast tenderness, oedema, joint pain and psychological symptoms were significantly more when compared to placebo. It is noted that the placebo effect is strong, with 57.7% of women in the placebo condition reporting an improvement in their experience of hot flushes (MacLennan, et al., 2004). Moreover, two large prospective trials conducted in the United States (The Women’s Health Initiative [WHI]) and United Kingdom (The Women’s International Study on Long Duration Oestrogen after Menopause [WISDOM]) reported increased risk of breast cancer, stroke, and venous thromboembolic events (Rossouw, et al., 2002; Vickers, Martin, & Meade, 2007). A survey examining the use of HRT between 2002-2004 reported that there was a decline in usage from 30% to 10%, possibly due to the concerns about potential health risks (Menon et al., 2007).

**Non-hormonal agents.** Psychopharmacological interventions such as antidepressants are common non-hormonal options with some empirical support in
reducing hot flushes. A recent review reported that paroxetine (Selective Serotonin Reuptake Inhibitor [SSRI]), fluoxetine (SSRI) and venlafaxine (Serotonin-norepinephrine Reuptake Inhibitor [SNRI]) has successfully reduced approximately 25-35% of hot flushes in women, including breast cancer patients (Nelson, et al., 2006). However, these medications are not free from side effects. Fatigue, nausea, vomiting, dry mouth, constipation, headaches, and drowsiness are common adverse effects reported by users (Nelson, 2008). Furthermore, the long term effectiveness of these medications is still unknown (Santoro, et al., 2004).

**Complementary and alternative medicines.** Complementary and alternative medicines (CAMs) are defined as diverse medical and health care practices or products that are alternative to conventional medical treatment (National Centre for Complementary and Alternative Medicine, 2010). A large US population-based survey found that approximately 16% of HRT users had used CAMs concurrently (R. E. Williams, et al., 2007). Another smaller telephone survey reported that as many as 76% of the female interviewees were using CAMs, and among those, 22% used it for menopausal symptoms (Newton, Buist, Keenan, Anderson, & LaCroix, 2002). Some commonly used CAMs for menopausal women are dietary supplements (i.e. Vitamin E, Evening primrose oil), phyto-estrogens (i.e. Red-clover, soy isoflavone extract), herbal therapies (i.e. black cohosh, Chinese herbs), and acupuncture. Despite wide use of CAMs, their efficacy and effectiveness have not yet been supported by empirical evidence, or have only showed minimal benefit over a small number of trials (Santoro, et al., 2004). More importantly, there are safety concerns such as liver toxicity caused by the use of black cohosh (Whiting, Clouston, & Kerlin, 2002). Further research is needed in this area to establish more reliable information on potential harm and benefits of CAMs.
**Lifestyle and Psychological Treatment**

**Physical activities.** Research has shown mixed results regarding the effect of exercise on hot flushes, with some showing no benefit (Aiello et al., 2004; Boraz, Simkin-Silverman, Wing, Meilahn, & Kuller, 2001; Gold et al., 2004; Sternfeld, Quesenberry, & Husson, 1999) and some reporting effectiveness (Elavsky & McAuley, 2007; Guthrie, Dudley, Dennerstein, & Hopper, 1997; Mirzaeinjmabadi, Anderson, & Barnes, 2006; Skrzypulec, Dąbrowska, & Drosdzol, 2010). Two reviews, including one Cochrane review, concluded that there was insufficient existing evidence to determine the effectiveness of physical exercise in alleviating hot flushes. However, the potential health benefits such as reduced BMI (Guthrie, et al., 1997; Karacan, 2010), improved psychological health (Conn, 2010; Ivarsson, Spetz, & Hammar, 1998; Schneider, 2002; Slaven & Lee, 1997) and better quality of life (Elavsky & McAuley, 2007; Teoman, Özcan, & Acar, 2004) brought about by physical exercise could not be disregarded (Daley, et al., 2009). Although its impact on vasomotor symptoms is still not clear, physical exercise is still recommended by the Royal College of Obstetricians and Gynaecologists in the United Kingdom (2006) and the North American Menopause Society (Santoro, et al., 2004) for managing menopausal symptoms because of its potential mental and health benefits.

Other type of exercise, generally known as mind-body exercises which include yoga, meditation, qigong, tai chi and other relaxation techniques were found to be effective in improving level of stress, stress reactivity, sleep and psychological wellbeing (Chiesa & Serretti, 2009; Innes, Sefse, & Taylor, 2008; Kuramoto, 2006). A recent systematic review which included three RCTs and five uncontrolled studies of mind-body therapies on menopausal symptoms indicated that there was improvement in vasomotor and other menopausal symptoms, with yoga-based intervention being
particularly useful in enhancing mood and sleep (Innes, Selfe, & Vishnu, 2010).

**Relaxation.** The effectiveness of relaxation (i.e. progressive muscle relaxation exercise, paced respiration, mindfulness exercise) for alleviating vasomotor symptoms has been well documented in past and recent research. The earliest related studies were conducted by Freedman and colleagues to determine the effectiveness of relaxation exercises in reducing hot flushes using alpha-wave electroencephalographic (EEG) biofeedback. They included three groups: paced respiration, muscle relaxation and control condition. They found that only women in the paced respiratory group had a significant decrease in hot flushes and there were no significant change in the other two groups (Freedman & Woodward, 1992; Freedman, Woodward, Brown, Javaid, & Pandey, 1995). A recent systematic review evaluating the effect of relaxation on menopausal symptoms has included nine studies of muscle relaxation, slow/paced breathing and other relaxation therapies. Results suggest that relaxation shows promising results in alleviating vasomotor symptoms, with some studies also indicating improvement in other menopausal symptoms. These results are similar to another recent review (Tremblay, et al., 2008). The authors from the two reviews both concluded that although the effectiveness of relaxation exercise to attenuate menopausal symptoms appeared promising, more good quality studies are needed in the future to provide firm conclusions regarding the effects of each relaxation exercise on menopausal symptoms (Innes, et al., 2010; Tremblay, et al., 2008).

**Health/psycho-education.** When women are approaching menopause, they are often interested in learning more about menopause and the treatment of related symptoms (Robers, 1991). Health/psycho-educational intervention can provide women with knowledge about menopause, as well as other associated health issues. One of the earliest studies in this area was about a health education intervention provided to
premenopausal women, aiming at prepare them for menopause (Liao & Hunter, 1998). Participants in the treatment group received two sessions of health education including knowledge about menopause, aging and its implication for health, available therapies, and health strategies that promote better physical and psychological health for midlife women. Results indicated that there was a significant increase in the knowledge and attitudes towards menopause among the participants in the treatment group following intervention, while there was no change in the control group. There were also some improvements of health behaviours observed in the treatment group, although the change was not significant. One interesting result was that the number of participants who intended to start HRT decreased. It appeared that the information regarding menopause was beneficial to premenopausal women and better prepared them for menopause. A follow-up study indicated that the intervention group still had significantly better knowledge than the control group after five years, although there was no difference in general and mental health as assessed by standardised measures. Subjective comments from the participants revealed that the knowledge had enhanced their ability to cope with midlife changes, including menopause (Hunter & O'Dea, 1999). A later psychoeducation program by Rotem and colleagues focused on improving women’s attitudes toward menopause. Results were similar to the previous studies, with additional significant reductions in symptom severity when compared to the baseline and the control group (Rotem, Kushnir, Levine, & Ehrenfeld, 2005).

Health education intervention for menopause was not only shown to be effective for women in Western countries, but also for those in Eastern countries. A health education intervention developed in Taiwan was delivered to 179 menopausal Chinese women, with another 174 women in a control group (Tsao & Huang, 2004). The intervention included providing participants with a comprehensive health education
brochure relating to menopause, individual teaching, counselling, and telephone consultation. The individual format was used in this program because menopause was considered a very personal issue for Taiwanese women. After intervention, there was a significant reduction in menopausal disturbances and increased health-related behaviours in the treatment group, while there was no change reported in the control group. The gains were partially maintained after one year, plus a significant reduction of perceived uncertainty reported in one of the intervention subgroups at the one-year follow-up (Tsao et al., 2007).

It is noted that the small number of studies is not sufficient to make a definitive conclusion on the effectiveness of health/psycho-education programs for menopausal symptoms. However, it appears that knowledge about menopause and its related health issues can have a positive influence on the attitude and health behaviours of midlife women. Although rarely researched on its own, the education component of menopause has certainly been incorporated in other treatments such as CBT.

**Cognitive Behaviour Therapy.** Recent studies have taken a bio-psycho-social perspective in relation to women’s experience of menopause, resulting in the development of behavioural and psychological interventions to treat menopausal symptoms (Hunter & Rendall, 2007). CBT is a structured and skill-based psychotherapy aimed at changing the unhelpful thinking and maladaptive behaviours that underlie psychological problems. When it is used for menopausal women, CBT helps them identify negative thinking and beliefs about menopause and aging, modify dysfunctional cognitions, and promote health-related behaviours (Hunter, 2003). The studies of psychological treatment for menopausal symptoms are summarised in Table 1.

Two early studies evaluated psychological intervention in treating menopausal symptoms for women who were receiving HRT. Greene and Hart (1987) implemented
<table>
<thead>
<tr>
<th>Study (Authors, year, location)</th>
<th>Study population</th>
<th>Intervention</th>
<th>Comparison Condition(s)</th>
<th>Outcome Measures and assessment times</th>
<th>Results</th>
<th>Strengths (+) and Limitations (-)</th>
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<tbody>
<tr>
<td>Greene &amp; Hart, 1987, UK</td>
<td>Menopausal women with severe psychological complaints</td>
<td>Individual PT</td>
<td>--</td>
<td><strong>Main Sx</strong>: VAS</td>
<td><strong>Main Sx</strong>*</td>
<td>- small samples</td>
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<tr>
<td>Age: 42-55 years, $M = 49$ years</td>
<td></td>
<td><strong>Session</strong>: 45-60 mins / session, 6 sessions with 3-4 weeks intervals</td>
<td></td>
<td><strong>Vasomotor Sx</strong>: CSRS</td>
<td><strong>Vasomotor Sx</strong></td>
<td>- absence of control group</td>
</tr>
<tr>
<td>$N = 24$</td>
<td></td>
<td><strong>Strategies</strong>: psychoeducation; counselling; cognitive &amp; behavioural strategies, relaxation</td>
<td></td>
<td><strong>Psych Sx</strong>: CSRS</td>
<td><strong>Psych Sx</strong></td>
<td>- participants received HRT</td>
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<tr>
<td></td>
<td></td>
<td><strong>Others</strong>: ISA</td>
<td></td>
<td><strong>Ax Times</strong>: Pre, Post</td>
<td><strong>Others</strong></td>
<td>- target psych Sx primary to menopausal Sx</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>- treatment not manualized</td>
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<tr>
<td>Study (Authors, year, location)</td>
<td>Study population</td>
<td>Intervention</td>
<td>Comparison Condition(s)</td>
<td>Outcome Measures and assessment times</td>
<td>Results</td>
<td>Strengths (+) and Limitations (-)</td>
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<tr>
<td>Hunter &amp; Liao, 1996, UK</td>
<td>Healthy menopausal women reporting ≥ 1 per week</td>
<td>Individual CBT</td>
<td>HRT</td>
<td>Vasomotor Sx: HFRS</td>
<td>Within gp: CBT - frequency***; problem rating***; depression***; anxiety***; HRT - frequency***</td>
<td>- reasonable sample size</td>
</tr>
<tr>
<td></td>
<td>Age: 35-71 years, $M = 52.11$ years</td>
<td>Session: 1 hour/session, 6 session over 6-8 weeks</td>
<td>Control</td>
<td>Psych Sx: WHQ</td>
<td>Btw gp: problem rating*</td>
<td></td>
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<td></td>
<td>$N = 52$ (CBT=24; HRT=12; C=16)</td>
<td>Strategies: relaxation; information; cognitive strategies; discussion</td>
<td></td>
<td>Ax Times: Pre x 2</td>
<td>FU: maintained except for depression</td>
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<td></td>
<td></td>
<td>Post (8-week)</td>
<td>FU (4-month)</td>
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<tr>
<td>Anarte et al., 1998, Spain</td>
<td>Post-menopausal women</td>
<td>HRT + group PT</td>
<td>HRT alone</td>
<td>Menopausal Sx: KI</td>
<td>HRT+PT &gt; HRT</td>
<td>- inadequate statistical analysis</td>
</tr>
<tr>
<td></td>
<td>Age: 45-55 years, $M = 50$ years</td>
<td>Session: 30 mins/session, 10 –16 sessions over 6 months</td>
<td></td>
<td>Psych Sx: subscales from GGQ</td>
<td>Menopausal Sx: insomnia***; nervousness***; melancholy***; fatigue***; palpitations***; vertigo**</td>
<td>- participants received HRT</td>
</tr>
<tr>
<td></td>
<td>$N = 73$ (HRT+PT=37; HRT=36)</td>
<td>Strategies: based on Greene &amp; Hart, 1987</td>
<td></td>
<td>Ax Times: Pre; Post</td>
<td>Psych Sx: Emotional alteration***; anxiety***; depression***</td>
<td></td>
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<td>Study</td>
<td>Study population</td>
<td>Intervention</td>
<td>Comparison Condition(s)</td>
<td>Outcome Measures and assessment times</td>
<td>Results</td>
<td>Strengths (+) and Limitations (-)</td>
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<tr>
<td><strong>Ganz et al., 2000, USA</strong></td>
<td>Women treated for breast cancer reported at least one of the target symptoms (hot flushes, vaginal dryness and urinary incontinence)</td>
<td>CMA Intervention</td>
<td>Control</td>
<td>Menopausal Sx: MSS</td>
<td>Menopausal Sx: Total***</td>
<td>+ RCT - included participants with pharmacological treatment (non-ERT)</td>
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<td></td>
<td>$N = 72$ (Tx=33; C=39)</td>
<td><em>Session</em>: 45 – 90 mins; FU call (2-week)</td>
<td></td>
<td>Others: VT in SF-36; SSS</td>
<td>Others: Sexual functioning*</td>
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<tr>
<td></td>
<td></td>
<td><em>Strategies</em>: education; counselling; behavioural &amp; pharmacologic interventions</td>
<td></td>
<td>Ax Times: pre; post (2-month &amp; 4-month)</td>
<td>VT = n.s.</td>
<td></td>
</tr>
<tr>
<td><strong>Keefer &amp; Blanchard, 2005, USA</strong></td>
<td>Healthy menopausal women met criteria by STRAW</td>
<td>Group CBT</td>
<td>Control</td>
<td>Vasomotor Sx: MENQOL; WHQ; HFRS</td>
<td>Vasomotor Sx Interaction: frequency**</td>
<td>+ groups delivered by the same therapist</td>
</tr>
<tr>
<td></td>
<td>$M = 51$ years</td>
<td><em>Session</em>: 1.5 hour/week for 8 weeks</td>
<td></td>
<td>Psych Sx : WHQ; MENQOL</td>
<td>Within gp: total**; distress**; interfere**</td>
<td></td>
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<tr>
<td></td>
<td>$N = 19$ (CBT=11; C=8)</td>
<td><em>Strategies</em>: psychoeducation, cognitive restructuring, paced respiration</td>
<td></td>
<td>Ax Times: Pre; Post (2-week)</td>
<td>Btw gp: total***; distress***; interfere***</td>
<td>+ randomly assign to Tx and C</td>
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<td>Psych Sx = n.s.</td>
<td>- small sample size - no FU</td>
</tr>
</tbody>
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Table 1. Continued.

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<thead>
<tr>
<th>Study (Authors, year, location)</th>
<th>Study population</th>
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<th>Results</th>
<th>Strengths (+) and Limitations (-)</th>
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</thead>
<tbody>
<tr>
<td>Allen et al., 2006, USA</td>
<td>Healthy menopausal women self-referred to treat hot flushes, reporting 17 and 64 hot flushes one week before treatment</td>
<td>Individual CBT</td>
<td>---</td>
<td>Vasomotor Sx: Hot flushes diary; MENQOL</td>
<td>Improved in every outcome measures</td>
<td>+ manualised</td>
</tr>
<tr>
<td></td>
<td>Age: 47 &amp; 55 years</td>
<td>Session: 10 sessions (? session duration)</td>
<td>Strategies: relaxation; behavioural (e.g. no smoking, activity pacing, increase exercise) and cognitive strategies</td>
<td>Psych Sx: HAM-D; HAM-A; MENQOL Ax Times: Pre; Post (1-week); FU (6-month)</td>
<td>+ Reliable, valid assessments</td>
<td>- small sample size (case report)</td>
</tr>
<tr>
<td>Study (Authors, year, location)</td>
<td>Study population</td>
<td>Intervention</td>
<td>Comparison Condition(s)</td>
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<tr>
<td>Alder et al., 2006, Switzerland</td>
<td>Menopausal women (some with psych conditions) reporting climacteric Sx</td>
<td>Group CBT</td>
<td>Waitlist (same sample)</td>
<td>Vasomotor Sx: MRS; VAS (attitude)</td>
<td>Vasomotor Sx: total**; acceptance*; influence**; controllability**</td>
<td>+ group delivered by same therapists</td>
</tr>
<tr>
<td></td>
<td>Age: 42-65 years, $M = 52.3$ years</td>
<td><strong>Session:</strong> 1.5 hour/week for 7 weeks</td>
<td></td>
<td>Psych Sx: HADS</td>
<td>Psych Sx: anxiety**; depression*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$N = 30$</td>
<td><strong>Strategies:</strong> psychoeducation; relaxation (e.g. breathing, PRM); discussion; cognitive strategies; coping skills (e.g. sexual diff., lifestyle)</td>
<td></td>
<td>Others: PQ; MFSQ</td>
<td>Others: partnership relationship*; sexuality*; cardiac**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Ax Times:</strong> pre x 2 (10 weeks apart); post</td>
<td></td>
<td></td>
<td></td>
<td>- some instruments have not yet validated in German version, i.e. MFSQ, VAS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- heterogeneous sample, i.e. different psych conditions, wide age range, surgical menopause</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- no FU</td>
</tr>
<tr>
<td>Study (Authors, year, location)</td>
<td>Study population</td>
<td>Intervention</td>
<td>Comparison Condition(s)</td>
<td>Outcome Measures and assessment times</td>
<td>Results</td>
<td>Strengths (+) and Limitations (-)</td>
</tr>
<tr>
<td>--------------------------------</td>
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<tr>
<td>Hunter et al., 2009, UK</td>
<td>Women treated for breast cancer and reported vasomotor Sx (at least 10 per week for a month)</td>
<td>Group CBT</td>
<td>Waitlist (same sample)</td>
<td>Vasomotor Sx: HFRS</td>
<td>Vasomotor Sx: frequency*; problem rating***</td>
<td>+ manualised</td>
</tr>
<tr>
<td></td>
<td>Age: 46-65 years, M = 53.7 years</td>
<td><strong>Session:</strong> 1.5 hour/week for 6 weeks</td>
<td>Psych Sx: WHQ; SF-36</td>
<td>Psych Sx: depression**; anxiety*; SF-36 (RE*, MH*, VT**)</td>
<td>- no control for placebo effect</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 17</td>
<td><strong>Strategies:</strong> psychoeducation; discussion; relaxation (e.g. paced respiration); behavioural (e.g. stress mgt, sleep) &amp; cognitive strategies</td>
<td>Others: HFBS</td>
<td>Others: Sleep**; belief**</td>
<td>- small sample size</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ax Times: pre; post (6-week); FU (3-month)</td>
<td>FU: maintained except anxiety, sleep &amp; RE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study (Authors, year, location)</td>
<td>Study population</td>
<td>Intervention</td>
<td>Comparison Condition(s)</td>
<td>Outcome Measures and assessment times</td>
<td>Results</td>
<td>Strengths (+) and Limitations (-)</td>
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</tr>
<tr>
<td>Garcia et al., 2011, Spain</td>
<td>Menopausal women with mild</td>
<td>Group CBT</td>
<td>Control</td>
<td><strong>Menopausal Sx:</strong> BMI</td>
<td><strong>Menopausal Sx:</strong> overall* + intervention program has been shown effective in women with severe Sx</td>
<td>- small sample sizes - no FU</td>
</tr>
<tr>
<td>Age: 43-56 years, M = 47.67 years</td>
<td></td>
<td>Session: 2 hours/week for 8 weeks</td>
<td></td>
<td><strong>Psych Sx:</strong> HADS</td>
<td><strong>Psych Sx:</strong> depression*; anxiety**</td>
<td></td>
</tr>
<tr>
<td>N = 46 (CBT=21; C=25)</td>
<td>Strategies: psychoeducation; relaxation; nutrition and fitness exercise; Kegel exercise; problem-solving skills</td>
<td></td>
<td></td>
<td><strong>Others:</strong> QLEQ</td>
<td><strong>Others:</strong> knowledge**; QoL*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ax Times: pre; post</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: PT = psychological treatment; Sx = symptoms; VAS = Visual Analogue Scales; CSRS = Climacteric Symptom Rating Scale; Psych = psychological; ISA = Index of Subjective Adaptation; Ax = assessment; Pre = pre-treatment; Post = post-treatment; HRT = Hormone Replacement Therapy; CBT = Cognitive Behaviour Therapy; C = control group; Control = control group; HFRS = Hot Flush Frequency and Problem Rating Scale; WHQ = Women’s Health Questionnaire; FU = follow-up; mins = minutes; KI = Kupperman Index; GGQ = Granada Gynecological Questionnaire; Tx = treatment group; CMA = Comprehensive Menopausal Assessment; MSS = Menopausal Symptom Scale; VT = Vitality; SF-36 = Short Form of the Medical Outcomes Study Questionnaire; n.s. = nonsignificance; RCT = randomised controlled trial; ERT = estrogen placement therapy; STRAW = Stages of Reproductive Ageing Quality of Life Questionnaire; HAM-D = Hamilton Rating Scale for Depression; HAM-A = Hamilton Rating Scale for Anxiety; MRS = Menopausal Rating Scale; HADS = Hospital Anxiety and Depression Scales; PQ = Partnership Questionnaire; MFSQ = McCoy Female Sexuality Questionnaire; HFBS = Hot Flush Belief Scale; BMI = Blatt’s Menopausal Index; QLEQ = Quality of Life Evaluation Questionnaire for women between 45 and 64 years old

a. There were four main types of presenting complaints: (1) anxiety/agitation; (2) depression/lethargic; (3) psychosomatic symptom; and (4) sexual dysfunction. * p ≤ .05. ** p ≤ .01. *** p ≤ .001
a psychological treatment program for a group of menopausal women who were treated for vasomotor symptoms with HRT, but were continuously disturbed by symptoms that may have a psychogenic origin. Three major components in the program were (1) education about the influence of psychosocial factors in their condition; (2) counselling about their current problem and concerns; and (3) behavioural / cognitive strategies for anxiety and depression. Despite some methodological limitations, preliminary results suggested that the additional psychological intervention helped to reduce interference due to patients’ presenting problems, as well as their vasomotor and psychological symptoms. Anarte and colleagues (1998) conducted a similar study using the same psychological treatment approach and improved the study design by adding a control condition (HRT alone). They found that the combined HRT and psychological treatment was more effective than HRT alone in treating some of the menopausal symptoms. Based on the results of these early studies, it appeared that psychological treatment was beneficial to women who undergo HRT. Nevertheless, before definitive conclusions regarding the effectiveness of psychological treatment for menopause can be made, more studies on menopausal women without HRT or other medication are needed.

In a comprehensive databases search, there were a small number of CBT programs for menopause developed in different countries including UK, Spain and Germany have been identified (Ayen & Hautzinger, 2004; Garcia & Gomez-Calcerrada, 2009; von Bultzingslowen, Pfeifer, & Korner-Herwig, 2006) but this review only includes studies published in English. One of the pioneering studies evaluating CBT for menopausal symptoms was conducted by Hunter and Liao (1996). They compared the effectiveness of CBT and HRT on treating menopausal hot flushes by using a control (no-treatment), CBT and HRT groups study design. Four individual CBT sessions,
consisting of psychoeducation regarding hot flushes and its triggers, relaxation (e.g. muscular relaxation and deep breathing), cognitive restructuring and stress management were delivered to 24 participants reporting one or more hot flush(es) per week. Role play, group discussion and daily home practice were incorporated in the program to strengthen the skills learning. Results showed that both CBT and HRT were effective in reducing the frequency of hot flushes, while no significant change was observed in the control group. In addition, participants in the CBT group also reported increased self-efficacy and mood. It appeared CBT was more effective then HRT in terms of improving psychological symptoms. The treatment gains were maintained at 4-month follow-up. Although this study was conducted on only small samples, the results supported CBT as a potential low-risk treatment option to reduce menopausal symptoms.

Approximately a decade after Hunter and Liao’s study (1996), Allen and colleagues (2006) reported two cases of treating hot flushes with 10 manualized individual CBT sessions. This CBT program covered generic topics including relaxation (e.g. abdominal breathing, progressive muscle relaxation), behavioural strategies (e.g. lifestyle change, activity pacing), cognitive strategies (e.g. symptom diary, identify and change unhelpful thoughts) and social skills training. Both participants reported a reduction in the number of hot flushes and improvement of quality of life. The treatment gains were maintained at six months follow-up. The researchers postulated the mechanism behind the effectiveness of the program: (1) relaxation reduces physiological arousal; (2) behavioural strategies help to minimise potential physical and environmental triggers, and (3) cognitive strategies help to lessen emotional distress and enhance self-efficacy in terms of coping with hot flushes. Although the case report nature of this study hinders the generalisability of the results, this study sheds light on the developmental direction of CBT for menopause. This
treatment program included a wide range of strategies that targeted different aspects of life, attempting to alleviate hot flushes from a broad perspective. The positive results provide further support the adoption of a cognitive behavioural approach in managing menopausal symptoms, as suggested by some earlier studies (Greene & Hart, 1987; Hunter & Liao, 1996; Hunter & Mann, 2010; Keefer & Blanchard, 2005b).

CBT can also be delivered in a group format, with the potential benefit of being cost effective and enhancing social support. Keefer and Blanchard (2005) piloted a group cognitive behavioural therapy (GCBT) to treat menopausal hot flushes. Nineteen menopausal women who had never used HRT were randomly assigned to treatment or waitlist group. The group intervention consisted of three main components: psychoeducation, relaxation training and cognitive restructuring, which were delivered in eight 90-minute weekly sessions. In general, there were significant reductions in ratings of total vasomotor symptoms, distress level and interference in the treatment group when compared to the waitlist group. Regarding clinical significance, 85% of participants in the treatment group reported an improvement with an average 48% symptom reduction. The researchers claimed that the results were comparable to that of anti-depressants. It was noted that the improvements were only in relation to vasomotor symptoms and not psychological symptoms. The authors hypothesised that a larger sample size may be required to detect more treatment effects.

The majority of previous treatment studies have predominantly focused on a single menopausal symptom, such as hot flushes or night sweats. Alder and colleagues (2006) acknowledged the importance of addressing other menopausal symptoms such as psychosomatic symptoms (e.g. loss of libido, chronic fatigue etc.), organic and metabolic disorders. They developed a GCBT which targeted different menopausal symptoms, with special attention given to sexual dysfunction and body image. The
group consisted of seven structured, 1.5-hour sessions, incorporating a variety of CBT strategies designed to facilitate women’s coping of different menopausal symptoms. Participants reportedly showed improvements in their level of acceptance, interference and controllability of vasomotor symptoms, psychological symptoms in terms of depression and anxiety, as well as relationship and sexual problems. However, there are some limitations regarding this study that may adversely affect the internal and external validity of the study. These methodological limitations include: (1) some outcome measures had not been validated in the German version; and (2) the participants in the study were quite heterogeneous in terms of demographic (e.g. wide age range) and medical background (e.g. psychiatric conditions, HRT).

The latest available study is a GCBT program developed in Spain (Garcia & Gomez-Calcerrada, 2011). The short and long term effectiveness of this program on women with severe menopausal symptoms has been published in two other papers in Spanish and are briefly described in Garcia and Gomez-Calcerrada’s paper. The latest study was to evaluate the effectiveness of the program on women suffering from mild menopausal symptoms. The program consisted of eight two-hour weekly sessions, which included the following strategies: psychoeducation on menopause; relaxation; nutrition; physical exercise; Kegel exercises for pelvic health; and problem solving techniques. Twenty-one women with mild menopausal symptoms participated in the group and another 28 women were included in the waitlist control condition. Results indicated there was significant improvement for anxiety and depressive symptoms, knowledge about menopause, and modest improvement for general menopausal symptoms in the treatment group, while no significant improvement was reported in the control group. Despite the small sample size, this preliminary study demonstrated the effectiveness of GCBT in helping women with mild menopausal symptoms. The
authors concluded that GCBT could be used for preventing the progression of menopausal symptoms, if timely intervention was provided.

The development of CBT for menopause is still in the early stage of development. Despite the small number of studies available, the preliminary findings have shown promising results for the effectiveness of CBT for managing menopausal symptoms. Apart from women undergoing natural menopause, some CBT programs have also been evaluated in breast cancer survivors with induced menopause (Duijts, Faber, Oldenburg, van Beurden, & Aaronson, 2010; Hunter, Coventry, Hamed, Fentiman, & Grunfeld, 2009; Hunter, Coventry, Mendes, & Grunfeld, 2009) with considerable benefit on physical and psychological symptoms. Collectively, the effectiveness of CBT for menopause appears promising. However, it is important to keep in mind that the interpretation and comparisons of the existing findings is compromised by methodological limitations such as small sample sizes, different measurements used in the studies, variation of the intervention programs, heterogeneous samples and lack of a control group in some of the studies. The clinical research could be used to establish the effectiveness of CBT reducing on menopause symptoms, however, not the efficacy. In response to the lack of efficacy studies in this area, a group of researchers have conducted two RCTs, one with breast cancer patients and another is with healthy women with menopausal symptoms (Ayers, Mann, & Hunter, 2011; Mann, Smith, Hellier, & Hunter, 2011). These RCTs allow researchers to evaluate the CBT program in a controlled environment, and could provide evidence for the therapeutic effect of CBT for menopause.

**Delivery Format of Cognitive Behaviour Therapy**

A growing body of research is showing that psychological interventions are relatively safe, non-pharmacological treatment which reduces the frequency of, and
distress associated with menopausal symptoms (e.g. Garcia & Gomez-Calcerrada, 2011; Hunter & Liao, 1996; Keefer & Blanchard, 2005a). However, there are some constraints associated with psychological interventions compared to pharmacological treatments that could potentially hinder its use. The time involved with psychotherapy is probably one of the biggest constraints that may lead to treatment seekers turning to HRT. In today’s society, women play many roles in life with work and family commitments and some women may feel overwhelmed and pressured attempting to fit treatment sessions in their tight schedule. In order to minimise barriers to accessing psychological treatment, it is important to accommodate the needs of the participant. One possible way of increasing accessibility to psychological treatment is to modify the format of treatment delivery. To our knowledge, no research has examined different delivery formats of psychological treatment, specifically CBT, for menopausal symptoms. However, it is still worthwhile to examine some past literature about different delivery formats of CBT for other psychological disorders.

**Individual versus Group Therapy**

Delivering treatment in a group format has become increasingly popular due to the benefits of improved efficiency, accessibility and cost-effectiveness (Yalom & Leszcz, 2005). However, it is important to examine whether group treatment can produce comparable effectiveness to the individual format. Cuijpers, van Straten and Warmerdam (2008) conducted a study to investigate if group and individual treatment were equally effective for depression in adults. This meta-analysis included 15 studies, with 397 and 276 participants in group and individual treatment, respectively. The results revealed that individual therapy had a small advantage over group therapy at post-treatment, indicated by a mean effect size of 0.2. However, the difference was not apparent at one- to six-month follow-ups. It is worth noting that there was a
significantly higher drop-out rate for the individual treatment group. Such findings may further confirm the cost-effectiveness of group therapy.

It is worth noting that the quality of studies included in this meta-analysis varied. None of the studies indicated concealed randomisation of participants, which may cause potential sample bias. The studies are heterogeneous in terms of participants (general vs. specific populations), assessment (clinical interviews vs. self-reported) and types of interventions (CBT vs. counselling vs. interpersonal therapy). All of the studies included were conducted in western countries which raises concern regarding generalisation of results to other cultural populations.

Tucker and Oei (2007) conducted a critical analysis on the effectiveness of individual versus group CBT in terms of cost and treatment effectiveness. They evaluated the available individual versus group CBT studies as a whole, and as subgroups, i.e. different disorders and client populations. The authors were reluctant to draw definitive conclusions to the research questions due to a numbers of methodological flaws. Generally speaking, the available studies indicated mixed results. When exploring the subgroup analyses, group CBT was more cost-effective in treating depression and children but not substance abuse and anxiety disorders. Further investigation on more recent efficacy studies (2004-2010) revealed similar mixed results (please see Table 2 for details). Tucker and Oei pointed out that one difficulty of conducting research to investigate group versus individual treatment is that the differences between the two treatment formats would most likely be small. Thus, a large sample size would be required to increase the statistical power for detecting difference.

Up to now, only few studies have directly compared the effectiveness of individual and group therapy. Furthermore, the answer to which treatment modalities
Table 2

**Studies Comparing the Efficacy of Group and Individual CBT**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Design</th>
<th>Participants (Offered Tx / completed Tx)</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ricca, et al., 2010</td>
<td>Compared the efficacy of ICBT and GCBT for binge eating disorder</td>
<td>GBCT = 72 / 68</td>
<td>• ICBT = GCBT at 3 year follow-up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICBT = 72 / 69</td>
<td></td>
</tr>
<tr>
<td>Saksa, Cohen, Srihari, &amp; Woods, 2009</td>
<td>Literature review of CBT for early psychosis</td>
<td></td>
<td>• Not directly compared GCBT vs ICBT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Majority data on ICBT is not favourable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Sparse GCBT studies but the results are favourable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Authors hypothesized that GCBT &gt; ICBT in treating early psychosis.</td>
</tr>
<tr>
<td>Sobell, Sobell, &amp; Agrawal, 2009</td>
<td>Compared the efficacy of ICBT and GCBT for substance abuse disorder</td>
<td>GBCT = 134 / 107</td>
<td>• ICBT = GCBT during treatment and at 12-month follow-up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICBT = 130 / 106</td>
<td>• Desirable group characteristics found in GCBT</td>
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<td></td>
<td></td>
<td></td>
<td>• Less therapist time in GCBT</td>
</tr>
<tr>
<td>Anderson &amp; Rees, 2007</td>
<td>Compared the efficacy of ICBT and GCBT for obsessive-compulsive disorder</td>
<td>GBCT = 25/20</td>
<td>• ICBT = GCBT in post-treatment and brief follow-up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICBT = 21/17</td>
<td>• ICBT was associated with more rapid treatment response but no difference at follow-up.</td>
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<tr>
<td></td>
<td></td>
<td>WL = 17</td>
<td></td>
</tr>
<tr>
<td>de Groot, Cobham, Leong, &amp; McDermott, 2007</td>
<td>Compared the efficacy of family-based ICBT and GCBT for childhood anxiety</td>
<td>GCBT = 15</td>
<td>• ICBT = GCBT at post-treatment, 3- and 6-month follow-up.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICBT = 14</td>
<td></td>
</tr>
<tr>
<td>Dowling, Smith, &amp; Thomas, 2007</td>
<td>Compared the efficacy of ICBT and GCBT for female pathological gambling</td>
<td>GBCT = 17/17</td>
<td>• ICBT = GCBT at post-treatment; ICBT &gt; Control; GCBT = Control in psychological functioning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICBT = 14/12</td>
<td>• ICBT &gt; GCBT at 6-month follow-up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control = 25/20</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Continued.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Design</th>
<th>Participants (Offered Tx / completed Tx)</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Bastien, Morin, Ouellet, Blais, & Bouchard, 2004 | Compared the efficacy of ICBT and GCBT and telephone consultation for insomnia | GBCT = 16  
ICBT = 15  
Telephone = 14 | • ICBT = GCBT = Telephone at post-treatment and 6-month follow-up  
• Authors suggested that group therapy and telephone consultation could be cost-effective alternatives to treatment of insomnia. |
| Sharp, Power, & Swanson, 2004 | Compared the efficacy of ICBT and GCBT for Panic Disorder              | GBCT = 38 / 20  
ICBT = 37 / 31  
WL = 22 / 19 | • ICBT = GCBT statistically at post-treatment, both > WL  
• ICBT > GCBT & WL clinically at post-treatment  
• ICBT > GCBT clinically in only one measure at 3-month follow-up  
• Majority (95%) of patients preferred ICBT |

*Note.* GCBT = Group cognitive-behavioural therapy; ICBT = Individual cognitive-behavioural therapy; WL = waitlist; Tx = treatment.

produce better treatment effects probably depends on the type of disorder being treated as well, thus, no clear conclusion could be drawn from the existing research. However, given the comparable treatment effects and the additional positive group characteristics associated with group therapy, there is an increasing utilisation of group therapy in treating a variety of health and mental health conditions.

**Group therapy for women.** Although research into treatment modalities reveal group effectiveness, group CBT is not uniformly superior to individual CBT (Ricca et al., 2010; Sharp, Power, & Swanson, 2004; Tucker & Oei, 2007). However, some advantages of group intervention over individual intervention should not be disregarded. While both treatment formats promote skill learning, participants in a group treatment
have the opportunity to be exposed to other group members experiences and learn new strategies from each other through modelling (Antoni, Wimberly, et al., 2006). Some researchers have emphasised the benefit of group therapy in building social networks and eliciting social support (Molassiotis et al., 2002; Sandstrom, 1996). These non-specific factors are considered to be the positive by-products of group treatment that could improve treatment outcomes (Oei & Browne, 2006). Unfortunately, these benefits of group therapy were not measured by the outcome assessment tools, and thus, have not been identified in most of the studies.

Psychological group intervention has been conducted for people with various psychosocial issues in different clinical populations, including medically ill patients. The use of psychological group treatment have been supported but not limited to the following patients: haemodialysis (Duarte, Miyazaki, Blay, & Sesso, 2009), epilepsy (Macrodimitris et al., 2010), diabetes (Lustman, Griffith, Freedland, Kissel, & Clouse, 1998; van Der Ven et al., 2005), chronic pain (Linton & Ryberg, 2001) and HIV (Rousaud et al., 2007; Sikkema, Hansen, Meade, Kochman, & Lee, 2005). Over the past decades, there is increasing development of psychological group interventions, especially CBT, for use with women’s health conditions. There is increasing evidence that GCBT is effective in reducing physical as well as psychological symptoms in women with premenstrual syndrome (Busse, Montori, Krasnik, Patelis-Siotis, & Guyatt, 2009; Christensen & Oei, 1995; Lustyk, Gerrish, Shaver, & Keys, 2009), menopausal symptoms (as detailed in the previous chapter), breast cancer (Antoni, Lechner, et al., 2006; Antoni et al., 2001; Antoni, Wimberly, et al., 2006; Duijts, et al., 2010; Edelman, Bell, & Kidman, 1999; Ganz et al., 2000), ovarian cancer (DeRubeis, Gelfand, Tang, & Simons, 1999; Lekander, Furst, Rotstein, Hursti, & Fredrikson, 1997) and infertility (Domar et al., 2000).
Intensive versus Weekly

Intensive CBT is considered a relatively new format of treatment delivery that aims to increase treatment accessibility. Generally speaking, the intensive and standard CBT treatment are identical in most aspects including treatment model, procedures, number of therapy hours, and treatment content (Bevan, Oldfield, & Salkovskis, 2010). The main difference between the two formats is the timeframe of the treatment. Instead of having weekly therapy sessions, the intensive CBT sessions are delivered in a daily format over several weeks. Two aims are expected to be achieved by modifying the delivery format. Firstly, the intensive treatment can help patients overcome geographical constraints by giving them an option to relocate themselves to the treating site during the intervention period. Secondly, intensive treatment may bring about rapid symptom reduction which can possibly benefit some treatment-resistant clients and restore their functioning in a shorter period of time, thus minimising the negative impacts associated with symptoms (Storch et al., 2008).

One of the most researched areas regarding intensive treatment is obsessive-compulsive disorder (OCD; Storch, et al., 2008). There were several studies comparing the effectiveness of intensive versus weekly CBT for OCD. Abramowitz, Foa and Franklin (2003) conducted a non-randomised study comparing effectiveness of 15 daily CBT sessions over three weeks with 15 bi-weekly sessions over eight weeks. The intensive treatment showed a small advantage over the bi-weekly treatment at post-treatment, but no significant difference was found in 3-month follow-up. Another study conducted by Storch et al. (2008) compared intensive CBT with weekly CBT. Similar results were found with both groups at post-treatment and maintained treatment gains at 3-month follow-up. Oldfield, Salkovski and Taylor (2010) compared the effectiveness of intensive and weekly CBT for OCD using a matched comparison group study design.
with 22 participants in each condition. Instead of utilizing a high-intensity treatment protocol (i.e. 20-30 hours over a period of 3-4 weeks) like previous studies, Oldfield et al. delivered a relatively short-term CBT (i.e. 12-18 hours over a period of 2 weeks) to the patients using weekly and intensive formats of delivery. Similar results were found with comparable short-term and long-term effectiveness of the two delivery formats. Apart from adult clientele, intensive CBT has been shown to be effective for children with OCD. Storch and colleagues (2007) conducted a paediatric OCD study of intensive versus weekly CBT. Patients in the intensive CBT received 14 daily sessions over three weeks while those in the weekly CBT received one session each week for 14 weeks. Similar to the results of the adult studies, the intensive CBT was superior to the weekly CBT immediately after treatment but no difference was found at 3-month follow-up.

The efficacy of the intensive treatment has also been explored in a RCT. Foa and colleagues (Foa et al., 2005) compared the efficacy of intensive CBT with medication, using a CBT versus medication versus pill placebo versus combined treatment study design. A total of 122 participants were randomly assigned to one of the above mentioned conditions. In general, intensive CBT alone and combined with medication was more effective than medication alone and pill placebo. Moreover, the analyses found that combined treatment offered no additional benefit beyond that of CBT alone. The authors compared their results with another study with a similar design, but used a weekly format instead of the intensive format (Cottraux et al., 1990). They found that the effect sizes for the combined condition were similar for both studies, but the effect size for intensive CBT alone was much larger compared to the weekly format. Although the methodological differences between studies should not be disregarded,
this comparison could possibly suggest that intensive CBT is a more efficacious treatment for OCD when compared with the weekly format.

While intensive CBT was shown to be an effective and efficacious treatment alternative for OCD patients in quantitative research, qualitative research can provide more in-depth information about the intensive format from participants’ perspective. Bevan, Oldfield and Salkovskis (2010) conducted a qualitative study to assess patients’ perceived helpfulness and problems with the treatment format. Six participants from each delivery format were interviewed and the data was analyzed using thematic analysis. Generally, both weekly and intensive participants reported that the treatment was relevant and helpful. Regarding the perceived benefits and drawbacks of the two delivery formats, weekly treatment participants appreciated having time to learn, reflect and practice between sessions and they were concerned that the intensive treatment would be too stressful and overwhelming. By contrast the intensive treatment participants perceived their treatment as powerful and efficient. They appreciated the intensive schedule which gave them daily support, motivation and opportunity to focus and concentrate on the treatment. Despite the shorter treatment period, participants in the intensive treatment did not find the treatment quantity inadequate or overwhelming. One common concern that intensive treatment participants had was the lack of continued support after treatment. The researchers concluded that with the availability of ongoing support, CBT intensive treatment can become an effective and acceptable treatment format option for patients.

In addition to OCD studies, there are other examples of intensive treatment including school refusal (Moffitt, Chorpita, & Fernandez, 2003; Tolin et al., 2009), bipolar depression (Miklowitz et al., 2007); PTSD (Ehlers et al., 2010); panic disorder (Deacon, 2007; Deacon & Abramowitz, 2006); social anxiety disorder (Stoddard,
Rosellini, & Hofmann, 2008); specific phobia (Davis, Ollendick, & Ost, 2009; Mortberg, Clark, Sundin, & Wistedt, 2007); agoraphobia (Angelosante, Pincus, Whitton, Cheron, & Pian, 2009); and mood disorders (Christopher, Jacob, Neuhaus, Neary, & Fiola, 2009; Thase, Bowler, & Harden, 1991). It is noted that most of the intensive CBT has been developed for anxiety and related disorders because the intensive format can facilitate the process of massed exposure which is an effective therapeutic strategy for treating anxiety (Foa, Jameson, Turner, & Payne, 1980). The term “intensive treatment” is not consistently defined across studies, therefore, interpretation and comparison of findings have to be conducted with caution.

In conclusion, the small sample sizes and small number of intensive CBT studies necessitate the above findings be interpreted carefully. Furthermore, there is relatively little data available on the efficacy for intensive CBT. Despite these limitations, the existing evidence appear to suggest that the effectiveness of CBT was relatively unaffected by the alteration of delivery format.

**Qualitative research**

Qualitative research is particularly useful in exploring people’s experience, perspective and meanings (Elliott, 1995). Some researchers have acknowledged that quantitative methods alone are not sufficient to capture human experiences, which are sometimes essential to answer a particular research question (Moustakas, 1994). Indeed, there is increasing recognition of the importance of participants’ experience in evaluating therapeutic interventions (e.g. Cartwright & Torr, 2005; Mason & Hargreaves, 2001). The meaning and experience of treatment from the patient’s perspective is considered important particularly at the developmental stage of a therapy, given that some of the therapeutic factors or treatment effects may not be captured by the quantitative outcome measures (Whisman, 1993).
Apart from in-depth personal experience, the addition of qualitative data also provides an extra data source that can be used to verify quantitative data. Method triangulation, which involves the use of multiple methods to examine the same research question, was a way to increase validity of the findings by minimising the impact of bias from a single source (Jick, 1979). Research critics have pointed out that quantitative and qualitative approaches, including their corresponding scientific paradigms, poses different epistemological and methodological faults that limit the pursuing of empirical information about human behaviour (McGrath & Johnson, 2003). Therefore, there is a need to use both approaches to produce a more accurate picture of the phenomena under investigation that is closer to the truth.

The Current Research

The Menopause Made Manageable (MMM) is a Group Cognitive Behaviour therapy (GCBT) developed by staff and students at the University of Newcastle Psychology Clinic. The programme incorporates many well-established cognitive behavioural strategies to help women reduce their menopausal symptoms. The program was delivered in ten 1.5-hour weekly sessions (Weekly), as well as two 7.5-hour sessions (Weekend). The weekend program was designed to accommodate the needs of participants who had difficulty attending the weekly program.

Quantitative Study

The current study was a pilot study aimed to evaluate the feasibility and effectiveness of Weekly versus Weekend MMM GCBT for managing menopausal symptoms.

Qualitative Study

As an addition to evaluate the treatment effectiveness using quantitative data, the second part of the study used a qualitative research method to explore women’s
personal experience of participating in the MMM program and how the program impacted their lives.
Group Cognitive Behavioural Therapy for managing peri-menopausal symptoms: Feasibility and effectiveness of two delivery methods

Abstract: The current pilot study aimed to evaluate the feasibility and effectiveness of two delivery formats: Weekly (ten weekly, 1.5-hour sessions) and Weekend (two 7.5-hour sessions) of a Group Cognitive Behavioural Therapy (GCBT) program for managing peri-menopausal symptoms. The Menopause Made Manageable (MMM) GCBT program incorporated many well-established cognitive and behavioural strategies including psychoeducation, relaxation, mindfulness, lifestyle intervention, cognitive strategies and stress management. Participants were allocated to the Weekly ($n = 51$) or Weekend ($n = 22$) group according to their preference. A battery of standardised questionnaires including the Menopause Rating Scale (MRS), the short form of the Depression Anxiety Stress Scale (DASS-21), and the short form 36-item Medical Outcome Study questionnaire (SF-36) were administered at waitlist, pre-treatment, post-treatment, 3-month follow-up and 6-month follow-up. Participants were used as their own controls in the waitlist period, during which time no significant change was identified. The results indicated that both Weekly and Weekend MMM programs were effective in improving menopause-related symptoms and psychological symptoms and treatment gains were maintained for at least 6 months. The results of this study suggest that the MMM GCBT program has the potential to be an effective and feasible, non-pharmacological treatment alternative for managing menopausal symptoms. Since both Weekly and Weekend groups showed similar results, the MMM program could be delivered in either formats to suit clients’ needs and preferences.

Keywords: Cognitive Behaviour Therapy, menopause, hot flushes, group therapy
Two decades ago, menopause research was predominately based on biomedical models where menopause was seen as a medical problem mainly due to a hormone deficit (Rostosky & Travis, 1996). Therefore, women were more likely to use medical treatment in an attempt to control their menopausal symptoms. For many years, Hormone Replacement Therapy (HRT) was the most commonly used pharmacological treatment for severe hot flushes. A systematic review shows that HRT is effective in reducing 75% of vasomotor symptoms such as hot flushes (MacLennan, et al., 2004). Despite its effectiveness, there have been increasing concerns regarding the potential health risks associated with HRT, including breast cancer, stroke, and venous thromboembolic events (Rossouw, et al., 2002; Vickers, et al., 2007). Antidepressants are common non-hormonal options with some empirical support for reducing hot flushes. However, these medications are not free from side effects (Nelson, et al., 2006).

Recent studies have investigated the menopause experience from a bio-psycho-social perspective, resulting in the development of behavioural and psychological interventions for menopausal symptoms. The empirical evidence for the success of psychological/lifestyle interventions such as physical exercise, relaxation, and health/psycho-education on managing menopausal symptoms has been increasing (e.g. Daley, et al., 2009; Tremblay, et al., 2008). The most commonly researched non-pharmacological intervention is Cognitive Behaviour Therapy (CBT). This is a structured, skill-based psychotherapy that could help menopausal women identify their negative thinking, address their attitudes and beliefs about menopause and its related symptoms, and promote lifestyle changes (Hunter, 2003). One of the pioneering studies evaluating CBT for menopausal symptoms was conducted by Hunter and Liao (1996). Four individual CBT sessions, consisting of psychoeducation regarding hot flushes and its triggers, relaxation, cognitive restructuring and stress management, were delivered to
24 women experiencing hot flushes. Results showed that both CBT and HRT were effective in reducing the frequency of hot flushes, with the CBT group also demonstrating improvement in psychological symptoms. The treatment gains were maintained at 4-month follow-up.

CBT can also be delivered in a group format, with the potential benefit of being cost effective and enhancing social support. Keefer and Blanchard (2005) piloted a Group Cognitive Behaviour Therapy (GCBT) to treat hot flushes. The intervention consisted of three main components: psychoeducation, relaxation training, and cognitive restructuring, which were delivered in eight, 90-minute, weekly sessions. In general, there were significant reductions in ratings for total vasomotor symptoms, distress levels and interference. The findings showed that 85% of participants in the treatment group reported an improvement with a mean 48% symptom reduction, which is comparable to anti-depressant benefits.

A growing body of research has shown that psychological interventions are relatively safe, non-pharmacological treatments for reducing the frequency of, and distress associated with menopausal symptoms (e.g. Garcia & Gomez-Calcerrada, 2011; Hunter & Liao, 1996; Keefer & Blanchard, 2005a). However, there are some constraints associated with psychological interventions as opposed to pharmacological treatment that can potentially hinder its use. The time involved with psychotherapy is probably one of the biggest constraints that may lead to treatment seekers favouring HRT. In today’s society, women play many roles in life with work and family commitments. Some women may feel overwhelmed and pressured to have to fit the treatment sessions in their tight schedule. In order to minimise barriers to accessing psychological treatment, it is important to accommodate the needs of participants. One possible way to increase the accessibility of psychological treatment is to modify the format of treatment
delivery.

Intensive CBT is considered a relatively new format of treatment delivery that aims to increase treatment accessibility. Generally, the main difference between intensive and standard CBT is the timeframe of the treatment. Instead of having weekly therapy sessions, the intensive CBT sessions are delivered in a daily format over several weeks. In all other aspects the two treatment formats are identical including treatment model, procedures, number of therapy hours, and treatment content (Bevan, et al., 2010). One of the most researched areas utilising intensive CBT is treatment of obsessive-compulsive disorder. In general, research suggests comparable treatment effectiveness for the two delivery formats (Oldfield, et al., 2010; Storch, et al., 2008). Qualitative results also show that both groups are equally acceptable from clients’ perspectives (Bevan, et al., 2010). These findings suggest that the effectiveness of CBT is relatively unaffected by the alteration of delivery format.

The current study is a pilot study aimed to evaluate the feasibility and effectiveness of two delivery formats (Weekly vs. Weekend) of a GCBT for managing peri-menopausal symptoms. The Weekend group format is an intensive two-day program designed to accommodate the needs of participants who have difficulty attending treatment weekly. We hypothesised that women in the GCBT would have significantly improved peri-menopausal symptoms, psychological wellbeing and general health following treatment compared to the waitlist control time period. Furthermore, it was hypothesised that the effectiveness of treatment would be maintained at 6-month follow-up. It was also expected that the treatment gains would be the same for Weekly and Weekend groups.
Method

Participants
Participants were recruited from the local community and the University of Newcastle, a regional university in New South Wales, Australia. A total of 121 women responded to the program’s promotion and self-referred to the Psychology Clinic. Intern psychologists in the clinic conducted telephone intake interviews with all the interested women to screen for inclusion and exclusion criteria. Women who were experiencing any peri-menopausal symptoms (i.e. hot flushes and night sweats) and/or had any changes in the menstrual cycle were eligible for the program. Exclusion criteria were psychosis and current suicidality. Of the 121 women who showed interest, 104 (86%) were allocated to different groups according to their preferred time on a first-come-first-served basis. The remainder indicated that they were no longer interested or had other commitments. Participants were informed that their involvement in the research was voluntary and written informed consent was obtained.

Among those who were allocated to the groups, 31 (30%) did not attend any session. The final sample was 73 women, consisting of 51 participants of the Weekly program and 22 participants of the Weekend program.

Measures

Demographic and medical history
Socio-demographic characteristics and medical history including reproductive health information were collected using a self-report questionnaire. Reproductive health information included menopause status, age at menarche, age biological mother experienced menopause, history of breast cancer and hysterectomy /ovary removal. Menopause status was determined by regularity of menstrual periods, and based on the classification proposed by the Study of Women’s Health Across the Nation (SWAN;
Bromberger, et al., 2007). The SWAN classification system is similar to those of WHO and STRAW, but with relatively simple and clear criteria for each menopausal stage. A number of menstrual cyclicity studies revealed that a lot of women are not good at providing retrospective data regarding their menstrual cycles (Soules, et al., 2001). In response to this potential recall error, we decided to adopt the SWAN classification given that it is easy for participants to understand and then provide information.

**Menopausal symptoms**
The Menopause Rating Scale (MRS) is a self-administered instrument which measures the severity of menopausal symptoms and their impact on health-related quality of life (The Berlin Center for Epidemiology and Health Research, 2008). The scale consists of 11 items and participants are required to indicate the perceived severity of each symptom on a 5-point Likert scale from 0 (*none*) to 4 (*very severe*). Three dimension scores, psychological, somato-vegetative, and urogenital symptoms can be produced. The total score is the sum of the three dimension scores. The MRS is reported as having good psychometric properties in terms of reliability and validity (Heinemann et al., 2004).

**Psychological well-being**
The short form of the Depression Anxiety Stress Scale (DASS-21) was used to evaluate the psychological wellbeing of the participants (Antony, Bieling, Cox, Enns, & Swinson, 1998). The DASS is a 42-item self-report measure that assesses symptoms on a continuum of distress, providing three subscale scores; depression, anxiety, and stress. The instrument has well-established psychometric properties in terms of internal consistency and validity, both in clinical and non-clinical samples (e.g. Antony, et al., 1998; T. A. Brown, Chorpita, Korotitsch, & Barlow, 1997; Crawford & Henry, 2003). It has also shown high correlations with the Beck Depression Inventory and the Beck
Anxiety Inventory, suggesting a good convergent validity (Lovibond & Lovibond, 1995). A short form of the DASS (DASS-21), which contains 21 items was developed later and found to have similar psychometric properties as the long form (Antony, et al., 1998). Good reliability and construct validity have been shown in both clinical and non-clinical populations (Antony, et al., 1998; Clara, Cox & Enns, 2001; Henry & Crawford, 2005). The DASS-21 was used in this study because similar results can be obtained from this shorter version, while the administration time is halved.

General health
The SF-36 is the short form of the Medical Outcomes Study questionnaire, which is a generic indicator of health status for use in population surveys and outcome measures of clinical interventions (McDowell, 2006). The instrument assesses eight health domains using four physical health components which include: physical functioning (PF), role limitations due to physical health problems (RP), bodily pain (BP), general health perceptions (GH), and four mental health components which include: vitality (VT), social functioning (SF), role limitations due to emotional problems (RE), and mental health (MH; Ware, Snow, Kosinski, & Gandek, 1993). Participants’ responses to each item are scored and summed to provide raw scores for each of the eight scales. The raw scores are then transformed into a 0 - 100 scale, with 0 indicating lowest well-being and 100 indicating highest well-being (Ware, et al., 1993). Two summary scores, Physical Component Summary (PCS) and Mental Component Summary (MCS), can be obtained through scoring algorithms described in SF-36 Physical and Mental Health Summary Scales: A User's Manual (Ware, Kosinski, & Keller, 1994). The SF-36 has been widely evaluated for use with general, as well as different clinical populations (Garratt, Schmidt, Mackintosh, & Fitzpatrick, 2002).
Symptom diary
Symptom diary measuring daily vasomotor symptoms was commonly used in previous studies (i.e. Hunter & Liao, 1996; Keefer & Blanchard, 2005a). The symptom diary used in the current study was based on items listed in the MRS and was adapted to allow participants to record their symptoms every day. Participants were asked to complete a symptom diary every week during the program to monitor their menopausal symptoms.

Use of strategies
An extra question was included in the follow-up survey to collect information about strategies that participants used to help reduce their menopausal symptoms. Participants were asked to rate how frequently they had used the 16 strategies that were included in the program on a scale from 0 (not at all) to 10 (every day) in the past week.

Procedures
Ethics approval
Ethics approval was obtained from the University of Newcastle Human Research Ethics Committee (HREC) in September 2009 (reference number: H-2009-0447).

Data collection
A battery of questionnaires consisting of demographic and medical history questions, the Menopause Rating Scale (MRS), the short form of the Depression Anxiety Stress Scale (DASS-21), and the short form 36-item Medical Outcome Study questionnaire (SF-36) was used in the data collection. There were five assessment time points: (1) waitlist control time period (6-8 weeks before the treatment commenced); (2) pre-treatment (1-2 weeks before the treatment commenced); (3) post-treatment (immediately after treatment); (4) 3-month follow-up; and (5) 6-month follow-up. In the waitlist control time period, participants were used as their own control, which is
similar to a recent study of GCBT for menopause (Alder, et al., 2006). Participants did not receive any psychological intervention during the waitlist control time period. In order to keep contact to a minimum during the waitlist period, participants were only contacted to discuss logistic issues.

**Treatment**

The current GCBT was named Menopause Made Manageable (MMM). The MMM program manual was developed by the Psychology Clinic at the University of Newcastle. The program aimed to provide women with information and techniques that could assist them to address the physical and psychological changes due to menopause. The intervention was delivered by RW, Clinical Psychologist, with the assistance of 1-2 intern psychologists for each group, depending on the group size. The program fee is $100. Participants were encouraged to pay full fee up-front. However, special arrangement, i.e. pay for one session each time, i.e. $10 / weekly session or $50 / weekend session, can be made if requested.

**Weekly group.** The Weekly MMM program consisted of ten weekly sessions of 1.5 hours. Six to eight participants were allocated to each group, but the actual number attending varied from two to eight. The treatment protocol was structured and followed the therapeutic procedures outlined in the manual: (1) practice of relaxation activity (e.g. Progressive Muscle Relaxation, guided imagery, breathing, etc.); (2) discussion of take-home activities (introduced after session two); (3) session delivery; and (4) assignation of take-home activity. The aim of the between-session take-home activities was to give participants opportunity to consolidate the knowledge gained, and to try out some of the new strategies. Table 1 lists the themes, strategies and take-home activities for each of the program’s 10 sessions.
<table>
<thead>
<tr>
<th>Session</th>
<th>Topics and contents</th>
<th>Strategies</th>
<th>Take-home activities</th>
</tr>
</thead>
</table>
| 1       | Introduction and Program Overview  
- overview of program; physical, psychological and social effects of menopause; management strategies | ✓ Relaxation exercise  
✓ Mindfulness | - Mindful eating |
| 2       | Physical Wellbeing  
- symptoms of menopause; physiology of hot flushes; menopause and diet; managing menopause via exercise | ✓ Healthy diet  
✓ Increase water intake  
✓ Increase soy intake  
✓ Increase exercise | - Weekly exercise routine |
| 3       | Psychological Wellbeing  
- stress arousal continuum; dealing with stress; risk factors for depression & anxiety; changing life stages; CBT for menopause; belief modification | ✓ Identifying and changing unhelpful thinking patterns  
✓ Sleep routine | - Thought record |
| 4       | Change Processes  
- process of change; identify your goals and barriers to achieve change; make and maintain change; motivation; theory of change (PRIME Theory) | ✓ Goal setting | - Behaviour change |
| 5       | Deciding to Change  
- goal setting; long and short term goals – S.M.A.R.T. goals; deciding to change; obstacles to achieve goals; the change plan | ✓ Goal setting  
✓ Breathing | - Develop a change plan |
| 6       | Memory and Concentration  
- problems with memory and concentration; strategies to improve memory and concentration; menopause and sleeping | ✓ Using memory techniques | - Paced respiration  
- Memory tips  
- To-do list |
| 7       | Stress Management: Procrastination  
- what is stress; symptoms of stress; menopause and stress; coping with stress; cause of procrastination; time management techniques | ✓ Reducing procrastination  
✓ Improved time management | - Time management  
- Goal setting |
| 8       | Social Support and Social Environment  
- sexual problems and strategies; social environment and menopause; using support to cope with anxiety and depression; pathways of social support | ✓ Using social support networks | - Utilise social support |
| 9       | Assertiveness and Conflict Resolution  
- understanding assertiveness; dealing with feelings of guilt; what is conflict; resolving conflict | ✓ Being assertive  
✓ Managing conflict | - Conflict management  
- Using assertiveness |
| 10      | Review and Maintaining Change  
- overview of session 2-9; further discussion; lapse and relapse; maintaining progress; making plans for further changes | | - Checklist of all the strategies |
Weekend group. Participants in the Weekend MMM program received two 7.5-hour sessions on two weekends scheduled five weeks apart. This arrangement was intended to give participants enough time to complete the take-home activities and assimilate the information. The first five topics were covered in the first session, while the remainder were delivered in the second session. To help participants remain focused on the program course, 10-minute breaks were provided after each topic. A number of group activities that involved active participation were also designed to keep participants engaged. The Weekend groups were conducted by the same therapist (and 1-2 intern psychologists depending on group size) and used the same treatment manual as the Weekly groups.

Data Analysis
Baseline socio-demographic variables, medical history and pre-treatment outcome measures including the MRS, DASS-21 and SF-36 were examined for significant group differences using t-tests for continuous data and chi-square tests for categorical variables.

Means and standard deviations were computed for each of the outcome measures (MRS, DASS-21 and SF-36) at waitlist, pre- and post-intervention, as well as 3- and 6-month follow-up. Changes in mean scores within each group over five assessment time points and between two group formats at each time point were evaluated using a Linear Mixed Model (LMM) using time as the within subject repeated measures factor and group membership (Weekly vs. Weekend) as the between subjects factor. An alpha level was set at .05. Post hoc test for differences between fitted model means at different times were Bonferroni adjusted for the number of a priori planned comparisons, i.e. \( p = \frac{.05}{4} = .0125 \) for four pre-planned comparisons. The residual from the final model was tested for normality and constant variance. Normality was
acceptable for the MRS and SF-36 scales. Since the DASS-21 scores were skewed, a transformation was performed by taking the log of the scores plus one. This improved the normality of the distribution substantially. Analyses revealed that the variance was constant over different time periods. The statistical analyses were performed using PASW Statistics for Windows, Version 18.0.

Effect sizes were used as indices of the magnitude of treatment effects. They were calculated using the Cohen’s formula (Cohen, 1988). An effect size of 0.2 indicates “small effect”, 0.5 indicates “medium effect” and 0.8 indicates “large effect”.

**Results**

**Preliminary comparisons**

**Weekly vs. Weekend**
Some of the socio-demographic characteristics, medical history and outcome variables for the Weekly and Weekend participants are presented in Table 2. Of the variables we examined, age of menarche was the only variable that showed a statistically significant difference between Weekly and Weekend groups. Since this is not likely to influence treatment effectiveness, no covariate was included in the analyses and all results are presented unadjusted.

**Comparison with population norms**
Baseline study sample data and normative data for all outcome variables were compared using two-sample t-tests. Results demonstrated that the current study sample scored significantly higher on the MRS and DASS-21 than the general population (Crawford, Cayley, Lovibond, Wilson, & Hartley, 2011; Heinemann, et al., 2004), suggesting more severe menopausal and psychological symptoms. Regarding the SF-36, with the exception of PF, the current study sample means were significantly lower than the
Table 2

Some Socio-demographic Characteristics, Medical History and Outcome Variables for the Weekly and Weekend groups

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Weekly ((n=66))</th>
<th>Weekend ((n=38))</th>
<th>Analysis of overall differences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-demographic</strong></td>
<td>Count (%)</td>
<td>Count (%)</td>
<td>(\chi^2)</td>
</tr>
<tr>
<td>Cultural Background</td>
<td></td>
<td></td>
<td>(N=85)</td>
</tr>
<tr>
<td>Australian</td>
<td>41 (75.9%)</td>
<td>24 (77.4%)</td>
<td>2.303, (p = .316)</td>
</tr>
<tr>
<td>British</td>
<td>10 (18.5%)</td>
<td>3 (9.7%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>3 (5.6%)</td>
<td>4 (12.9%)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>(\chi^2)</td>
</tr>
<tr>
<td>Year 12 or below</td>
<td>16 (28.6%)</td>
<td>11 (36.7%)</td>
<td>(N=86)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>40 (71.4%)</td>
<td>19 (63.3%)</td>
<td>.594, (p = .441)</td>
</tr>
<tr>
<td><strong>Medical History</strong></td>
<td>Count (%)</td>
<td>Count (%)</td>
<td>(\chi^2)</td>
</tr>
<tr>
<td>Body weight</td>
<td></td>
<td></td>
<td>(N=75)</td>
</tr>
<tr>
<td>Under &amp; Normal weight</td>
<td>22 (42.3%)</td>
<td>13 (56.5%)</td>
<td>1.294, (p = .255)</td>
</tr>
<tr>
<td>Overweight &amp; Obese</td>
<td>30 (57.7%)</td>
<td>10 (43.5%)</td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td></td>
<td>(\chi^2)</td>
</tr>
<tr>
<td>Hormones</td>
<td></td>
<td></td>
<td>(N=90)</td>
</tr>
<tr>
<td>No</td>
<td>41 (69.5%)</td>
<td>19 (61.3%)</td>
<td>.615, (p = .433)</td>
</tr>
<tr>
<td>Yes</td>
<td>18 (30.5%)</td>
<td>12 (38.7%)</td>
<td></td>
</tr>
<tr>
<td>Menopause Status</td>
<td></td>
<td></td>
<td>(\chi^2)</td>
</tr>
<tr>
<td>Premenopausal</td>
<td>3 (5.3%)</td>
<td>0 (0%)</td>
<td>(N=87)</td>
</tr>
<tr>
<td>Early perimenopausal</td>
<td>11 (19.3%)</td>
<td>7 (23.3%)</td>
<td>1.738, (p = .629)</td>
</tr>
<tr>
<td>Late perimenopausal</td>
<td>13 (22.8%)</td>
<td>7 (23.3%)</td>
<td></td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>30 (52.6%)</td>
<td>16 (53.3%)</td>
<td></td>
</tr>
<tr>
<td>Age of menarche</td>
<td>13.37 (1.87)</td>
<td>12.32 (1.43)</td>
<td>(t(76.209)=2.938, p = .004)</td>
</tr>
<tr>
<td><strong>Outcome measures</strong></td>
<td></td>
<td></td>
<td>(t)</td>
</tr>
<tr>
<td>MRS</td>
<td></td>
<td></td>
<td>(N=86)</td>
</tr>
<tr>
<td>Psychological</td>
<td>6.84 (2.93)</td>
<td>6.00 (3.39)</td>
<td>1.227, (p = .223)</td>
</tr>
<tr>
<td>Somatic</td>
<td>6.71 (2.26)</td>
<td>6.65 (2.82)</td>
<td>.112, (p = .911)</td>
</tr>
<tr>
<td>Urogenital</td>
<td>4.29 (2.31)</td>
<td>4.48 (2.71)</td>
<td>.349, (p = .728)</td>
</tr>
<tr>
<td>Total</td>
<td>17.84 (5.58)</td>
<td>17.13 (7.52)</td>
<td>.510, (p = .612)</td>
</tr>
<tr>
<td>DASS</td>
<td></td>
<td></td>
<td>(t)</td>
</tr>
<tr>
<td>Depression</td>
<td>9.93 (9.61)</td>
<td>10.39 (8.77)</td>
<td>-.220, (p = .827)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6.59 (5.72)</td>
<td>7.68 (7.83)</td>
<td>-.752, (p = .454)</td>
</tr>
<tr>
<td>Stress</td>
<td>13.59 (7.97)</td>
<td>12.45 (9.39)</td>
<td>.601, (p = .550)</td>
</tr>
<tr>
<td>SF-36</td>
<td></td>
<td></td>
<td>(t)</td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>79.83 (19.26)</td>
<td>76.13 (20.56)</td>
<td>.843, (p = .402)</td>
</tr>
<tr>
<td>Role-Physical</td>
<td>60.53 (37.48)</td>
<td>62.90 (37.01)</td>
<td>-.285, (p = .776)</td>
</tr>
<tr>
<td>Bodily Pain</td>
<td>61.55 (21.08)</td>
<td>62.77 (24.36)</td>
<td>-.247, (p = .806)</td>
</tr>
<tr>
<td>General Health</td>
<td>67.95 (19.28)</td>
<td>65.58 (21.20)</td>
<td>.533, (p = .595)</td>
</tr>
<tr>
<td>Vitality</td>
<td>45.09 (18.51)</td>
<td>41.61 (23.47)</td>
<td>.767, (p = .445)</td>
</tr>
<tr>
<td>Social Functioning</td>
<td>69.61 (23.54)</td>
<td>73.79 (25.28)</td>
<td>-.777, (p = .439)</td>
</tr>
<tr>
<td>Role-Emotion</td>
<td>53.45 (42.32)</td>
<td>61.29 (41.36)</td>
<td>-.839, (p = .404)</td>
</tr>
<tr>
<td>Mental Health</td>
<td>67.52 (15.63)</td>
<td>65.16 (17.26)</td>
<td>.653, (p = .515)</td>
</tr>
<tr>
<td>PCS</td>
<td>47.79 (8.89)</td>
<td>46.96 (9.35)</td>
<td>.410, (p = .683)</td>
</tr>
<tr>
<td>MCS</td>
<td>41.32 (10.80)</td>
<td>41.96 (11.81)</td>
<td>-.256, (p = .798)</td>
</tr>
</tbody>
</table>
Table 2. Continued.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Weekly (n = 66)</th>
<th>Weekend (n = 38)</th>
<th>Analysis of overall differences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical History (cont’)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>57 (96.6%)</td>
<td>29 (93.5%)</td>
<td>$\chi^2(1, N=90)=.449, p = .503$</td>
</tr>
<tr>
<td>Yes</td>
<td>2 (3.4%)</td>
<td>2 (6.5%)</td>
<td></td>
</tr>
<tr>
<td>Menopause Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premenopausal</td>
<td>3 (5.3%)</td>
<td>0 (0%)</td>
<td>$\chi^2(3, N=87)=1.738, p = .629$</td>
</tr>
<tr>
<td>Early perimenopausal</td>
<td>11 (19.3%)</td>
<td>7 (23.3%)</td>
<td></td>
</tr>
<tr>
<td>Late perimenopausal</td>
<td>13 (22.8%)</td>
<td>7 (23.3%)</td>
<td></td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>30 (52.6%)</td>
<td>16 (53.3%)</td>
<td></td>
</tr>
<tr>
<td>Hysterectomy/ovary removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>43 (72.9%)</td>
<td>23 (74.2%)</td>
<td>$\chi^2(1, N=90)=.018, p = .894$</td>
</tr>
<tr>
<td>Yes</td>
<td>16 (27.1%)</td>
<td>8 (25.8%)</td>
<td></td>
</tr>
<tr>
<td>Number of ovaries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4 (6.8%)</td>
<td>3 (9.7%)</td>
<td>$\chi^2(2, N=90)= 5.048, p = .080$</td>
</tr>
<tr>
<td>One</td>
<td>2 (3.4%)</td>
<td>5 (16.1%)</td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>53 (89.8%)</td>
<td>23 (74.2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Mean (SD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>26.08 (4.51)</td>
<td>25.70 (4.39)</td>
<td>$t(73)=.331, p = .741$</td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>5.23 (5.20)</td>
<td>4.69 (6.01)</td>
<td>$t(87)=.443, p = .659$</td>
</tr>
<tr>
<td>Amount of exercise</td>
<td>166.70 (124.17)</td>
<td>221.13 (235.16)</td>
<td>$t(39.462)=-1.200, p = .237$</td>
</tr>
<tr>
<td>Age of menarche</td>
<td>13.37 (1.87)</td>
<td>12.32 (1.43)</td>
<td>$t(76.209)=2.938, p = .004$</td>
</tr>
<tr>
<td><strong>Outcome measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MRS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>6.84 (2.93)</td>
<td>6.00 (3.39)</td>
<td>$t(87)=1.227, p = .223$</td>
</tr>
<tr>
<td>Somatic</td>
<td>6.71 (2.26)</td>
<td>6.65 (2.82)</td>
<td>$t(87)=.112, p = .911$</td>
</tr>
<tr>
<td>Urogenital</td>
<td>4.29 (2.31)</td>
<td>4.48 (2.71)</td>
<td>$t(87)=-.349, p = .728$</td>
</tr>
<tr>
<td>Total</td>
<td>17.84 (5.58)</td>
<td>17.13 (7.52)</td>
<td>$t(87)=.510, p = .612$</td>
</tr>
<tr>
<td><strong>DASS-21</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>9.93 (9.61)</td>
<td>10.39 (8.77)</td>
<td>$t (87)=- .220, p = .827$</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6.59 (5.72)</td>
<td>7.68 (7.83)</td>
<td>$t (87)=- .752, p = .454$</td>
</tr>
<tr>
<td>Stress</td>
<td>13.59 (7.97)</td>
<td>12.45 (9.39)</td>
<td>$t (87)=- .601, p = .550$</td>
</tr>
<tr>
<td><strong>SF-36</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>79.83 (19.26)</td>
<td>76.13 (20.56)</td>
<td>$t(87)=.843, p = .402$</td>
</tr>
<tr>
<td>Role-Physical</td>
<td>60.53 (37.48)</td>
<td>62.90 (37.01)</td>
<td>$t(86)=- .285, p = .776$</td>
</tr>
<tr>
<td>Bodily Pain</td>
<td>61.55 (21.08)</td>
<td>62.77 (24.36)</td>
<td>$t(87)=- .247, p = .806$</td>
</tr>
<tr>
<td>General Health</td>
<td>67.95 (19.28)</td>
<td>65.58 (21.20)</td>
<td>$t(87)=.533, p = .595$</td>
</tr>
<tr>
<td>Vitality</td>
<td>45.09 (18.51)</td>
<td>41.61 (23.47)</td>
<td>$t(87)=.767, p = .445$</td>
</tr>
<tr>
<td>Social Functioning</td>
<td>69.61 (23.54)</td>
<td>73.79 (25.28)</td>
<td>$t(87)=- .777, p = .439$</td>
</tr>
<tr>
<td>Role-Emotion</td>
<td>53.45 (42.32)</td>
<td>61.29 (41.36)</td>
<td>$t(87)=- .839, p = .404$</td>
</tr>
<tr>
<td>Mental Health</td>
<td>67.52 (15.63)</td>
<td>65.16 (17.26)</td>
<td>$t(89)=.653, p = .515$</td>
</tr>
<tr>
<td>PCS</td>
<td>47.79 (8.89)</td>
<td>46.96 (9.35)</td>
<td>$t(86)=.410, p = .683$</td>
</tr>
<tr>
<td>MCS</td>
<td>41.32 (10.80)</td>
<td>41.96 (11.81)</td>
<td>$t(86)=- .256, p = .798$</td>
</tr>
</tbody>
</table>

a According to Australian and New Zealand Standard Classification of Occupations (2009).

b The satisfaction of social support is measured by three-level Likert scale: 0=not satisfied; 1=somewhat satisfied and 2= satisfied.

c Equal variance not assumed.
population norms, indicating a worse general health status (Australian Bureau of Statistics, 1997).

**Primary outcomes**
In total, 83.6% (n = 61) of the participants completed the MMM program. The post-treatment, 3-month and 6-month follow up surveys were sent to all program completers and the return rates were 73.8%, 75.4% and 86.9% respectively.

**Waitlist vs. Pre-treatment**
There was no significant change in any of the outcome measures during the waitlist control time period (p > .05). Means and standard deviations for all the outcome measures at waitlist and pre-treatment are shown in Table 3.

**Weekly vs. Weekend**
According to the LMM analysis findings, there was no significant group main effect for any variables (p > .05) and all group × time interactions were also nonsignificant (p > .05). Figure 1 shows the fitted MRS-total mean scores for Weekly and Weekend groups over five assessment time points. Since there were neither group main effects nor interaction effects, the following results are based on the combined weekly and weekend groups, focusing only on the time-based effects.

**Primary outcomes on intervention effects**
Means and standard deviations at five assessment time points, as well as mean differences and effect sizes at post-treatment and 6-month follow-up for all the outcome variables are presented at Table 3. The major groups of outcomes in the table are now described in detail.
Table 3

Overall Means, Standard Deviation and Effect Sizes for Outcome Measures

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>WL (n=28)</th>
<th>Pre (n=89)</th>
<th>Post (n=45)</th>
<th>3-m (n=46)</th>
<th>6-m (n=53)</th>
<th>Mean difference (95% CI) (p)-value</th>
<th>Cohen’s d (^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MRS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>6.29 (3.30)</td>
<td>6.55 (3.10)</td>
<td>4.05 (3.19)</td>
<td>4.65 (2.90)</td>
<td>4.42 (2.56)</td>
<td>2.59 (1.70 to 3.48), &lt;.001</td>
<td>1.92 (1.11 to 2.74), &lt;.001</td>
</tr>
<tr>
<td>Somato-vegetative</td>
<td>6.68 (2.61)</td>
<td>6.69 (2.46)</td>
<td>4.89 (2.64)</td>
<td>5.65 (3.01)</td>
<td>5.32 (2.21)</td>
<td>1.86 (1.08 to 2.63), &lt;.001</td>
<td>1.37 (0.66 to 2.07), &lt;.001</td>
</tr>
<tr>
<td>Urogenital</td>
<td>4.57 (2.13)</td>
<td>4.36 (2.44)</td>
<td>2.91 (2.56)</td>
<td>3.39 (2.74)</td>
<td>3.11 (2.13)</td>
<td>1.64 (0.95 to 2.32), &lt;.001</td>
<td>1.20 (0.57 to 1.82), &lt;.001</td>
</tr>
<tr>
<td>Total</td>
<td>17.54 (6.49)</td>
<td>17.60 (6.29)</td>
<td>11.84 (7.10)</td>
<td>13.70 (7.23)</td>
<td>12.85 (5.43)</td>
<td>6.09 (4.27 to 7.97), &lt;.001</td>
<td>4.48 (2.77 to 6.20), &lt;.001</td>
</tr>
<tr>
<td><strong>DASS-21</strong> (^b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>10.00 (9.37)</td>
<td>10.09 (9.29)</td>
<td>6.09 (7.28)</td>
<td>8.30 (8.02)</td>
<td>6.75 (6.80)</td>
<td>0.47 (0.19 to 0.75), .001</td>
<td>0.37 (0.15 to 4.21), .005</td>
</tr>
<tr>
<td>Anxiety</td>
<td>5.93 (6.61)</td>
<td>6.97 (6.51)</td>
<td>5.36 (4.56)</td>
<td>5.36 (4.92)</td>
<td>5.25 (4.98)</td>
<td>0.09 (-0.18 to 0.36), .513</td>
<td>0.27 (0.25 to 0.51), .031</td>
</tr>
<tr>
<td>Stress</td>
<td>11.79 (7.99)</td>
<td>13.19 (8.46)</td>
<td>9.91 (8.82)</td>
<td>11.26 (9.29)</td>
<td>9.89 (6.99)</td>
<td>0.44 (0.20 to 0.67), &lt;.001</td>
<td>0.20 (-0.16 to 0.41), .070</td>
</tr>
<tr>
<td><strong>SF-36</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td>75.36 (23.17)</td>
<td>78.54 (19.49)</td>
<td>84.53 (13.79)</td>
<td>82.39 (16.15)</td>
<td>84.91 (12.50)</td>
<td>7.04 (2.23 to 11.86), .004</td>
<td>7.21 (2.83 to 11.59), .001</td>
</tr>
<tr>
<td>RP</td>
<td>57.14 (39.59)</td>
<td>61.36 (37.12)</td>
<td>69.32 (34.04)</td>
<td>72.83 (35.29)</td>
<td>72.64 (37.42)</td>
<td>5.94 (-7.45 to 19.33), .382</td>
<td>9.40 (-2.85 to 21.64), .123</td>
</tr>
<tr>
<td>BP</td>
<td>60.21 (24.78)</td>
<td>61.98 (22.15)</td>
<td>63.52 (22.03)</td>
<td>64.22 (17.92)</td>
<td>65.23 (22.93)</td>
<td>2.23 (-3.55 to 8.02), .447</td>
<td>4.94 (-3.35 to 10.22), .067</td>
</tr>
<tr>
<td>GH</td>
<td>63.71 (21.07)</td>
<td>67.12 (19.88)</td>
<td>72.30 (16.75)</td>
<td>72.70 (15.65)</td>
<td>70.49 (19.12)</td>
<td>2.45 (-1.70 to 6.60), .245</td>
<td>0.95 (-2.84 to 4.74), .622</td>
</tr>
<tr>
<td>VT</td>
<td>40.71 (18.09)</td>
<td>43.88 (20.31)</td>
<td>51.02 (18.32)</td>
<td>49.67 (21.51)</td>
<td>52.98 (19.12)</td>
<td>5.30 (0.32 to 10.28), .037</td>
<td>7.40 (2.85 to 11.95), .002</td>
</tr>
<tr>
<td>SF</td>
<td>73.21 (25.17)</td>
<td>71.07 (24.10)</td>
<td>78.69 (22.81)</td>
<td>78.26 (21.32)</td>
<td>81.13 (19.86)</td>
<td>6.29 (-6.48 to 13.23), .075</td>
<td>7.12 (0.79 to 13.45), .028</td>
</tr>
<tr>
<td>RE</td>
<td>61.90 (41.29)</td>
<td>56.18 (41.92)</td>
<td>68.94 (39.64)</td>
<td>65.22 (44.42)</td>
<td>66.67 (41.35)</td>
<td>13.09 (0.70 to 25.47), .038</td>
<td>7.09 (-4.21 to 18.40), .217</td>
</tr>
<tr>
<td>MH</td>
<td>67.57 (17.12)</td>
<td>66.70 (16.16)</td>
<td>74.64 (13.05)</td>
<td>71.83 (16.48)</td>
<td>75.09 (14.22)</td>
<td>6.97 (2.95 to 10.98), .001</td>
<td>7.02 (3.36 to 10.69), &lt;.001</td>
</tr>
<tr>
<td>PCS</td>
<td>45.22 (12.29)</td>
<td>47.50 (9.01)</td>
<td>48.14 (8.80)</td>
<td>48.85 (8.60)</td>
<td>48.65 (8.87)</td>
<td>.960 (-1.66 to 3.58), .470</td>
<td>1.78 (-0.60 to 4.17), .141</td>
</tr>
<tr>
<td>MCS</td>
<td>42.91 (12.12)</td>
<td>41.54 (11.10)</td>
<td>46.42 (10.49)</td>
<td>45.02 (12.38)</td>
<td>46.42 (10.23)</td>
<td>3.83 (1.00 to 6.67), .008</td>
<td>3.28 (0.70 to 5.86), .013</td>
</tr>
</tbody>
</table>

*Note.* MRS = Menopause Rating Scale; DASS-21 = Depression Anxiety Stress Scale-21; SF-36 = Short Form Medical Outcomes Study questionnaire; PF = Physical Functioning; RP = Role-Physical; BP = Bodily Pain; GH = General Health; VT = Vitality; SF = Social Functioning; RE = Role-Emotional; MH = Mental Health; PCS = Physical Component Summary; MCS = Mental Component Summary; WL = waitlist control time period; Pre = pre-treatment; Post = post-treatment; 3-m = 3-month follow-up; 6-m = 6-month follow-up.
Table 3B. Continued.

a For MRS and DASS, mean difference is calculated by (Pre - Post) or (Pre – 6-month); for SF-36, mean difference is calculated by (Post – Pre) or (6-month - Pre). For MRS and SF-36, fitted model means are used to determine the difference.

b For DASS, the means are reported on the original scale, but the Linear Mixed Model analysis was conducted with log transformed scores, i.e. log (score + 1). Hence, the mean differences reported in this table are based on log scores.

c Cohen’s $d$ effect size is calculated by difference in model means divided by $S_{within}$

$$S_{within} = \frac{SD of mean difference}{\sqrt{n(1-r)}}$$

where $SD of mean difference$ and $r$ are obtained from paired t-test analysis for subjects with both pre- and post- surveys. For DASS which has log transformation variables, this was conducted on a log scale.
Figure 1. *Fitted mean scores of Menopause Rating Scale (total score) for Weekly and Weekend groups.* WL = waitlist control time period; Pre = pre-treatment; Post = post-treatment; 3-m = 3-month follow-up; 6-m = 6-month follow-up.

**Intervention Effects on Menopausal Symptoms**

LMM analysis indicated significant improvements in menopause related symptoms after intervention, as measured by the MRS. There were significant overall time effects for psychological, $F(4, 174.92) = 11.85, p < .001$, somato-vegetative, $F(4, 181.78) = 8.10, p < .001$ and urogenital, $F(4, 176.10) = 9.37, p < .001$ subscale scores across five assessment time points. Post hoc comparisons revealed significant mean score reductions from pre- to post-treatment and from pre-treatment to 6-month follow-up for all three subscales, with effect sizes reflecting medium to large changes. To assess changes post-treatment, the results at post-treatment were compared to 6-month follow-up. No significant changes were found, indicating the improvements were maintained. However, the relatively smaller effect sizes at 6-month follow-up suggest a slight lapse over time.
**Intervention Effects on Psychological Well-being**

LMM analysis demonstrated significant overall time effects for the depression subscale, $F(4, 177.04) = 4.30, p = .002$, anxiety subscale, $F(4, 175.79) = 1.46, p = .215$ and stress subscale, $F(4, 172.30) = 4.19, p = .003$. Post hoc comparisons showed a significant reduction in mean scores from pre- to post-treatment and from pre-treatment to 6-month follow-up for DASS-depression. Comparisons between post-treatment and 6-month follow-up revealed no significant time effect, suggesting the gain was maintained. For the mean DASS-stress scores, there was a significant reduction from pre- to post-treatment, but not from pre-treatment to 6-month follow-up, suggesting the treatment gain at post-treatment was not maintained. There was no significant time effect identified overall and at post hoc comparison with Bonferroni adjustment for DASS-anxiety. However, there was a trend towards an improvement of anxiety symptoms from post-treatment to 6-month follow-up.

**Intervention Effects on General Health**

LMM analysis revealed significant improvements in some domains of general health, as measured by the SF-36. There were significant overall time effects for PF, $F(4, 167.10) = 4.48, p = .002$, VT, $F(4, 172.34) = 3.95, p = .004$, and MH, $F(4, 168.85) = 5.51, p < .001$, subscales across all assessment time points. Post hoc comparisons showed a significant increase of mean scores for PF and MH subscales from pre-treatment to post-treatment and to 6-month follow-up, indicating an improvement in these areas following the intervention. The related effect sizes indicated the changes were modest. The gains in these domains were maintained, indicated by the nonsignificant time effect from post-treatment to 6-month follow-up. For VT, the increase in mean scores did not reach statistical significance until 6-month follow-up. There were no significant time effects observed for RP, BP, GH, SF and RE subscales at any of the assessment time point according to post hoc comparisons. The two summary measures, PCS and MCS,
give an indication of the change in physical and mental health, respectively. For PCS, there were no significant time effect over five assessment time points. MCS demonstrated a small overall time effect, \( F(4, 170.90) = 2.50, p = .044 \), with paired comparisons revealing a significant mean difference from pre- to post-treatment and to 6-month follow-up. There was no significant mean difference from post-treatment to 6-month follow-up, suggesting the gain was maintained.

**Treatment compliance**

Treatment compliance was assessment by attendance rate and implementation of strategies.

**Attendance rate**
Due to the dichotomous nature of the attendance data of the Weekend group (i.e. either 50% or 100%), all attendance rates were re-coded as: (1) 50% or below, or (2) above 50%. The percentage of participants who attended above 50% of the MMM program for Weekly and Weekend groups are 78.4% and 86.4%, respectively. Chi-square analysis showed no distribution difference between the two groups, \( \chi^2(1, N=73) = .624, p = .430 \).

**Use of strategies**
At post-treatment and follow-up assessment, all participants who returned the surveys reported that they had implemented at least three strategies to some degree. In order to facilitate the analysis of treatment compliance, the 16 strategies were grouped into two factors using exploratory factor analysis and named Cognitive-behavioural Strategies and Lifestyle Strategies based on the nature of the items (See Table 4 for the factors loadings of 16 strategies). Factor scores for each person were calculated by summing the items within each factor and then dividing by the number of items to give an average score that was on the same range as the original items, i.e. 0 (not at all) – 10
(every day). Mean values for each factor at post-treatment, 3-month follow-up and 6-month follow-up were calculated.

LMM analysis was used to examine the use of strategies over time by the Weekly and Weekend groups. Results revealed no significant difference between groups in their use of Cognitive-behavioural Strategies, $F(1, 51.42) = .22, p = .641$. There was no time main effect, $F(2, 75.22) = 1.71, p = .188$, indicating the use of strategies did not change over the 6-month period after intervention. There was no significant group × time interaction effect, $F(2, 75.22) = 1.45, p = .242$, suggesting the use of strategies by the two groups was similar over time. The overall mean values of the use of Cognitive-behavioural Strategies at post-treatment, 3-month follow-up and 6-month follow-up were 5.03, 4.95 and 4.57, respectively, suggesting the participants on average used the strategies on some days.

With Lifestyle Strategies, there was no significant group main effect, $F(1, 55.39) = 1.52, p = .223$. A significant time effect was found, $F(2, 78.14) = 6.33, p = .003$, suggesting there was a change in the use of Lifestyle Strategies over the six months period after treatment. There was also a significant time × group interaction effect, $F(2, 78.14) = 4.02, p = .022$. At post-treatment, similar mean values (around 6) were achieved for both groups. It can be seen that there was a decreased use of strategies at 3-month follow-up for the Weekly group but not the Weekend group (Weekly = 4.64; Weekend = 6.04). However, the Weekend group reduced the use of the strategies at 6-month follow-up and both groups obtained similar mean values (around 5) at 6-month follow-up.
Table 4

*Use of strategies factor structure and loadings*

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Cognitive-behavioural</th>
<th>Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being assertive</td>
<td>.825</td>
<td></td>
</tr>
<tr>
<td>Managing conflict</td>
<td>.781</td>
<td></td>
</tr>
<tr>
<td>Using social support networks</td>
<td>.780</td>
<td></td>
</tr>
<tr>
<td>Goal setting</td>
<td>.726</td>
<td></td>
</tr>
<tr>
<td>Improved time management</td>
<td>.686</td>
<td>.366</td>
</tr>
<tr>
<td>Using memory techniques</td>
<td>.664</td>
<td></td>
</tr>
<tr>
<td>Reducing procrastination</td>
<td>.659</td>
<td></td>
</tr>
<tr>
<td>Identifying and changing unhelpful thinking</td>
<td>.481</td>
<td></td>
</tr>
<tr>
<td>Sleep routine</td>
<td>.382</td>
<td></td>
</tr>
<tr>
<td>Breathing exercise</td>
<td>.772</td>
<td></td>
</tr>
<tr>
<td>Relaxation exercise</td>
<td>.671</td>
<td></td>
</tr>
<tr>
<td>Increased water intake</td>
<td>.616</td>
<td></td>
</tr>
<tr>
<td>Mindfulness exercise</td>
<td>.607</td>
<td></td>
</tr>
<tr>
<td>Increased exercise</td>
<td>.507</td>
<td></td>
</tr>
<tr>
<td>Healthy Diet</td>
<td>.334</td>
<td>.498</td>
</tr>
<tr>
<td>Increased soy intake</td>
<td>.423</td>
<td></td>
</tr>
</tbody>
</table>

aLoadings less than 0.3 were suppressed.

**Symptom diary**

The data were reduced by summing the daily symptom scores for each week and then averaging to produce weekly symptom scores. Subsequently, weekly subscale scores for psychological, somato-vegetative and urogenital symptoms were calculated by adding the scores of each item for the respective subscales. LMM analysis was used to examine change in menopausal symptoms over the treatment period for Weekly and Weekend groups. There was no group main effect or group × time interaction effect for any of the subscales, but there were significant time main effects for all subscales: psychological, $F(12, 475.09) = 2.66, p = .002$; somato-vegetative, $F(12, 477.46) = 4.84, p < .001$;
urogenital, $F(12, 469.60) = 2.47, p = .004$, indicating improvement of menopausal symptoms over the course of treatment.

**Discussion**

This pilot study examined the feasibility and effectiveness of two delivery formats of a GCBT for managing peri-menopausal symptoms. During the waitlist control time period there were no significant change in symptoms, however, some variables showed changes post intervention that were significant and moderately large. These findings suggest the improvement in symptoms at post-treatment are most likely due to the MMM program. Moreover, the medium to large effects sizes further support the interpretation that the changes were unlikely to be the result of an ineffective intervention such as a placebo effect or factors other than the intervention.

The hypothesis that MMM participants would have significantly improved menopausal symptoms following the intervention was supported, with the largest improvement being observed in psychological symptoms, followed by somato-vegetative and then urogenital symptoms. This finding is also in accord with past studies (Alder, et al., 2006; Keefer & Blanchard, 2005a) where GCBT was successful in improving menopausal symptoms. The hypothesis regarding the improvement in psychological wellbeing was partially supported, with significant improvements found in depressive and stress-related symptoms, but not anxiety symptoms following the intervention. Despite the nonsignificant results, there was a trend suggesting improvement of anxiety symptoms from post-treatment to 6-month follow-up. Perhaps a larger sample size would provide more power to detect change. Another speculation is a reduction in anxiety symptoms relies upon acquisition of cognitive strategies, thus more time may be needed before change is evident. A longer follow-up assessment could possibly reveal the intervention effects on anxiety symptoms. There are inconsistent
findings regarding improvements in psychological symptoms across GCBT studies. Some report improvements in depressive and anxiety symptoms (Alder, et al., 2006; Garcia & Gomez-Calcerrada, 2011), while the study by Keefer and Blanchard (2005a) did not find such improvement. It is suspected that the study sample’s level of psychosocial functioning at baseline and the measurement used had attributed to the different findings between studies.

The hypothesis that participants would have improved general health following treatment was partially supported. The MMM program produced significant improvements in general mental health, but not physical health. Undoubtedly, menopausal symptoms are strongly related to the quality of life (Kumari, Stafford, & Marmot, 2005) and improvements in menopausal symptoms should be reflected in the SF-36 scores. However, it appears that other factors such as current health status moderated the treatment effects on health-related quality of life. Chronic health conditions were reported by approximately 10% of the participants. Inspection of the questions in the SF-36, especially those assessing physical health, revealed that the scores could possibly reflect participants’ existing health conditions, which were not targeted by the MMM program and were not expected to change as a result of the psychological intervention. In other words, the treatment benefits may have been reduced by participants’ existing health issues.

All the treatment gains (except for stress-related symptoms) were maintained at 6-month follow-up. This suggests that the intervention has short-term effects on stress that are difficult to maintain in the long term. Although there are only a small number of studies that include follow-up assessments, our findings are consistent with the majority of past literature that have shown the maintenance of treatment gains (Allen, et al., 2006; Hunter & Liao, 1996).
Another question addressed in this study was whether the two delivery formats of the MMM program would produce comparable treatment effects. Results from the symptom diary and post-intervention assessments indicated that the menopausal symptoms decreased over time in a similar pattern across both Weekly and Weekend groups during and following treatment. This finding is consistent with previous studies comparing the effectiveness of weekly and intensive CBT (Abramowitz, et al., 2003; Storch, et al., 2008), despite the slightly different definitions of “intensive” in past and current studies. In relation to feasibility, similar dropout and attendance rates for both groups implied that the Weekend MMM, despite its intensity, was as acceptable as the Weekly MMM.

The comparable effectiveness of the two delivery formats could be due to the similar coping strategies used in both groups. The analyses showed that both groups used the Cognitive-behavioural Strategies some days and the frequency of use was stable from post-treatment to 6-month follow-up. While similar frequency of use was found, there was a significant reduction of usage over time for Lifestyle Strategies. Despite an earlier usage reduction in the Weekly group at 3-month follow-up, this discrepancy dissipated by 6-month follow-up. In sum, participants incorporated some of the strategies learned in the MMM program, regardless of which treatment format that they were in.

There is another reason to speculate the comparable effectiveness of the two groups may be attributed to the similar usage of strategies. The MMM program is a CBT-based program that focuses on empowering clients (Beck, 1995). The ultimate goal of the intervention was to teach participants skills so they could manage their symptoms. In the context of self-management, successful intervention appears to rely heavily on the implementation of strategies consistently by participants at home.
Thus, the format of treatment delivery is not that important if skills are adequately learned and implemented. This is consistent with several past studies evaluating different delivery formats of CBT programs that focused on self-management (Bastien, Morin, Ouellet, Blais, & Bouchard, 2004; Mimeault & Morin, 1999).

The current study contributes to the literature on the effectiveness of GCBT as a low-risk alternative treatment for women managing menopausal symptoms. Although the present results are far from suggesting CBT can yield comparable effectiveness as HRT in reducing hot flushes, it revealed substantial benefits of MMM GCBT in improving women’s overall menopausal symptoms including psychological wellbeing. Health risks, if any, imposed on participants are far less than that of HRT. Secondly, MMM GCBT has the potential to produce a sustainable treatment effect on menopausal symptoms. This finding is particularly important when high symptom relapse rates were reported by HRT users after discontinuing treatment (Ockene et al., 2005). This maintenance of treatment effects could possibly be attributed to the knowledge and skills that participants gained as a result of the intervention. Thirdly, the comparable results of the Weekly and Weekend groups suggest that both delivery formats are effective and feasible. The intensive Weekend group was an innovative format for delivering a GCBT where different participants’ needs and preferences could be accommodated. Subsequently, more women could benefit from the program.

Several methodological limitations of this study should be addressed. Firstly, although the waitlist control time period was used in an attempt to provide a control condition, there is no alternative treatment control group that can rule out any other factors that explain the treatment effects. Secondly, our participants were self-selected, relatively well educated and not randomly allocated to the treatment formats. The fee-
paying treatment program also implied a possible sample bias. All these factors may constrain the generalisability and reduce the validity of the findings. Moreover, ethnic minority groups were not well represented in the study sample, hence, the findings might not be generalisable to other cultural populations. Thirdly, the small sample size might not provide sufficient power to detect all the intervention effects.

Based on the developing framework for complex health intervention proposed by the UK Medical Research Council (Craig et al., 2008), the current findings contribute to the piloting stage in building the evidence for the effectiveness and feasibility of GCBT for menopause. Together with previous studies (Alder, et al., 2006; Keefer & Blanchard, 2005a), it has justified the use of larger, randomised controlled trials to examine the efficacy of GCBT for menopausal symptoms. Moreover, despite increasing evidence of the effectiveness of GCBT for menopause symptoms, the mechanism behind change is still not clear. Future studies could consider using other research methods such as qualitative methods to explore the range of changes that occur for each participant, thus gain insights into the therapeutic factors that make the program effective.

In conclusion, the results of this study suggest that the MMM GCBT program has the potential to be an effective and feasible, non-pharmacological treatment alternative for managing menopausal symptoms. Since both Weekly and Weekend groups showed similar results, the MMM program can be delivered in either format to suit clients’ needs and preference. Similar to previous studies, the current findings support the use of GCBT for managing peri-menopause symptoms.
References


Discussion

This study examined the feasibility and effectiveness of two delivery formats of a GCBT (MMM) for managing peri-menopausal symptoms. Quantitative and qualitative research methods were employed in this study. In the first part of this section, the quantitative results for the effectiveness and feasibility of the MMM will be discussed. Further, more detailed discussion will be provided on the feasibility and acceptability of the Weekend MMM. The second part of this discussion will focus on the impact of the MMM from participants’ perspective using the qualitative results. First, women’s experience of menopause prior to their involvement in the MMM program will be discussed in relation to theoretical perspectives. Then the impact of the MMM program will be discussed in the following four areas: increased knowledge, increased self-efficacy, positive sense of self, and positive attitude. Clinical implications and limitations of the study will be presented at the end of the discussion.

Detailed method section, quantitative results and qualitative results are presented in Appendix A, B and C, respectively.

Effectiveness of the MMM

Our group of participants showed higher levels of menopausal symptoms, psychological distress and poorer health-related quality of life than the general population before the intervention. There were no significant changes in the waitlist control time period. However, significant and moderately large post intervention change was evident for most variables. These findings suggest the improvement in symptoms at post-treatment are most likely due to the MMM program. Moreover, the medium to large effects sizes further support the interpretation that the changes were unlikely to be the result of a placebo effect or factors other than the intervention. It is
noteworthy that due to the varying commencement dates of the program, the data for any assessment time points was not collected from a particular period of the year as was the case in the Alder et al.’s study (2006). They identified an environmental factor (temperature) could contribute to changes in severity of hot flushes and contaminate the results. We did not believe this issue is a concern for the current study.

The hypothesis that MMM participants would have significantly improved menopausal symptoms following the intervention was supported, with the largest improvement being observed in psychological symptoms, followed by somato-vegetative and then urogenital symptoms. Over half of the participants reported reductions in at least one severity level of overall menopausal symptoms. This finding is consistent with past studies (Alder, et al., 2006; Keefer & Blanchard, 2005a) where GCBT was successful in improving menopausal symptoms.

The hypothesis regarding the improvement in psychological wellbeing was partially supported, with significant improvements found in depressive and stress-related symptoms following the intervention but not anxiety symptoms following the intervention. Despite the nonsignificant results, there was a trend suggesting improvement of anxiety symptoms from post-treatment to 6-month follow-up. Perhaps a larger sample size would provide more power to detect change. Another speculation is a reduction in anxiety symptoms relies upon acquisition of cognitive strategies, thus more time may be needed before change is evident. For instance, it takes time to practice and subsequently learn to identify and challenge an unhelpful thought that contributes to feeling anxious. A longer follow-up assessment could possibly reveal intervention effects on anxiety symptoms. There are inconsistent findings regarding improvements in psychological symptoms across GCBT studies. Some report improvements in depressive and anxiety symptoms (Alder, et al., 2006; Garcia & Gomez-Calcerrada,
2011), while the study by Keefer and Blanchard (2005a) did not find such improvement. It is suspected that the study sample’s level of psychosocial functioning at baseline and the measurement used is most likely due to the different findings between studies.

The hypothesis that participants would have improved general health following treatment was partially supported. The MMM program produced significant improvements in general mental health but not physical health. Past literature indicates that the agreement between psychological components in the MRS and the SF-36 was high (Schneider, 2002; Schneider, Heinemann, Rosemeier, Potthoff, & Behre, 2000). Undoubtedly, menopausal symptoms are strongly related to the quality of life of menopausal women (Kumari, et al., 2005) and improvement in menopausal symptoms should be reflected in the scores in the SF-36. However, it appears that other factors such as current health status moderated the treatment effects on health-related quality of life. Chronic health conditions were reported by approximately 10% of the participants. Inspection of the questions in the SF-36, especially those assessing physical health, revealed that the scores could possibly reflect participants’ existing health conditions. These were not targeted by the MMM program and were not expected to change as a result of the psychological intervention. In other words, the treatment benefits may have been reduced by participants’ existing chronic health issues. Interestingly, although the overall physical health did not show significant improvement, one of the physical subscales, Physical Functioning, yielded modest change immediately after intervention and at the 6-month follow-up. The increase in physical functioning may be attributed to improved health behaviours such as physical exercise, relaxation exercise, water intake and improved diet following the MMM program. The analysis of strategies used and the qualitative information can provide more information regarding lifestyle change. Results indicated that on average, participants used the Lifestyle
Strategies some days. It is acknowledged that this assessment was only a subjective appraisal which provided an estimation of the use of strategies of an individual, and there was no baseline data available for comparison. Despite these limitations, the analysis provided some indication that participants have incorporated some strategies taught in the MMM program to improve their lifestyle. This finding is further validated by the qualitative information. Nearly all interviewees mentioned that the MMM program increased their awareness of health-related behaviours, where they have either adopted some new strategies or reinforced existing health practices.

In support of our second hypothesis, all the treatment gains (except for stress-related symptoms) were maintained at 6-month follow-up. This suggests that the intervention may have short-term effects on stress that are difficult to maintain in the long term. Although there are only a small number of studies that include follow-up assessments, our findings are consistent with the majority of past literature that has found that treatment gains have been maintained (Allen, et al., 2006; Hunter & Liao, 1996).

Notably, participants with an elevated level of distress were not excluded from the present study, unless they had revealed suicidal ideation at intake or assessed by the primary therapist as not suitable to continue the group treatment, and offered individual therapy instead. Therefore, when compared to population norms, our sample had more severe menopausal symptoms, lower psychological wellbeing and general quality of health. This is expected because past research suggests that women reporting more vasomotor and mood symptoms are more prone to treatment seeking (Guthrie, Dennerstein, Taffe, & Donnelly, 2003). The inclusion of only women with more severe symptoms and poorer general health in the study population could possibly reduce the generalisability of the study findings to women in the general population. However, the
generalisability may not be necessary because the target participants are the group of women who felt disturbed by menopausal symptoms. Past studies suggested that approximately 15 - 40% of women at menopausal transition have never sought treatment for menopausal symptoms (Guthrie, et al., 2003; R. E. Williams, et al., 2007), and some women can cope with the transition more easily without any physical or psychological issues. The developers of the MMM program did not intend for menopause to be viewed as an “illness” that needs to be treated for every woman. Indeed, the program aimed to promote a positive attitude towards menopause and aging, where women take initiative and responsibility to manage their symptoms when these issues start to have a negative impact on their life. In other words, the MMM program specifically targeted women with severe symptoms. Having said that, the preventive power of GCBT for menopause could not be disregarded. A recent study in Spain demonstrated that GCBT was effective in treating mild menopausal symptoms, suggesting the concept of “early intervention” could also apply in menopause management.

**Feasibility of the MMM**

The second aim of this research project was to evaluate the feasibility of the MMM program. The dropout rate is often used to assess the feasibility of an intervention (i.e. Ehlers, et al., 2010; Patelis-Siotis et al., 2001). The overall dropout rates for the MMM program was around 16%, which is lower than the average dropout rate of 46.86% across all therapy modalities (Wierzbicki & Pekarok, 1993). The average dropout rate across studies should only be considered as a general reference because “dropout of psychotherapy” has not been consistently defined. In this study, dropouts were the participants who had an attendance rate lower than 60%, which includes all the Weekend participants who attended only one session and Weekly
participants who stopped attending the treatment mid way. Generally speaking, approximately 84% of the participants who commenced the MMM program completed it, which could serve as an indicator that the acceptability of the MMM program to participants was high.

**Different Delivery Formats of MMM**

The final hypothesis in this study was whether the two delivery formats of the MMM program would produce comparable treatment effects. The quantitative results indicate that the menopausal symptoms decreased over time in a similar pattern across both the Weekly and Weekend groups following intervention. This finding is consistent with previous studies comparing the effectiveness of weekly and intensive CBT (Abramowitz, et al., 2003; Storch, et al., 2008). While both groups demonstrated similar treatment effects at post-treatment and follow-up periods, it would still be interesting to investigate if they showed different changing patterns on menopausal symptoms during the treatment period. Inspection of the symptom diary revealed a steady reduction of menopausal symptoms over the course of treatment, with no group differences being identified. This result further supports the interpretation that the treatment effect of the MMM program was unaffected by the delivery formats.

In relation to feasibility, similar dropout rate and attendance rate for both groups implies that the Weekend MMM, despite its intensity, was as acceptable as the Weekly MMM. Some researchers have raised concern about the feasibility of intensive treatment in terms of cost (Storch, et al., 2008). For the “traditional” intensive treatment, participants usually require travelling and residing at the treating centre for a period of time, thus, there are extra costs associated with accommodation and loss of income. The intensive format of the Weekend MMM did not pose such concerns because it was held over two Saturdays. Saturday was particularly chosen because it
was assumed that most of the participants would not have to work on that day. In this case, participants could make two separate trips to the clinic, without extra cost for accommodation and loss of income. Furthermore, Weekend participants probably saved some costs in terms of time and transportation because less trips were made to the treatment centre. Collectively, the Weekend group appeared to be an excellent option for those who were facing geographical and time constraints in attending the Weekly MMM.

The comparable effectiveness of the two delivery formats could be due to the similar strategies used in both groups. The analyses showed that both groups used the Cognitive-behavioural Strategies some days and the frequency of use was stable from post-treatment to 6-month follow-up. While similar frequency of use was found, there was a significant reduction of usage over time for Lifestyle Strategies. It was not possible to identify what attributed to the earlier reduction of Lifestyle Strategies used by the Weekly group, but this is not a concern as the discrepancy had dissipated by the 6-month follow-up. As mentioned previously, these data are not accurate records of the frequency of usage, but only estimation based on participants self report on an ordinal scale. One of the characteristics of an ordinal scale is that the numbers on the scale only represent the rank order and there is no relative magnitude between numbers (Cliff & Keats, 2003). Therefore, the reduction of usage, especially for the relatively small difference reported in the use of Lifestyle Strategies, could be due to less frequent use of strategies but could also be a reflection of errors arising from subjective estimation. Moreover, recall error could not be ruled out for the retrospective data. By taking all these limitations into consideration, only a general conclusion can be made that participants incorporated some of the strategies learned in the MMM program, regardless of which treatment format that they were in.
There is another reason to speculate the comparable effectiveness of the two groups may attribute to the similar usage of strategies. MMM is a CBT-based program that focuses on empowering clients (Beck, 1995). The ultimate goal of the intervention is to teach participants skills so they can manage their symptoms. Therefore, symptom management skills including procedures, rationale and evidence behind the strategies, were clearly explained in the sessions and described in the handouts. The rationale for strategies helped participants to conceptualize the newly learned information so they were able to use the strategies flexibly, and to incorporate those they found useful into their life. The handouts contained a lot of up-to-date, scientific-based information that were clearly written at an appropriate level. The handouts played an essential role in reiterating the messages and facilitating skills acquisition by allowing participants to revisit the information after sessions. The MMM program was packaged and delivered from the participants’ perspective and active participation in symptoms management was much emphasised throughout the treatment. Most of the strategies are simple health behaviours that the participants may have known or used in the past. Also, strategies that were relatively new to the participants such as mindfulness or cognitive restructuring were clearly explained and practiced in the session to ensure participants were capable of using them at home if they wanted. After all, participants themselves are the ones who make decisions and take action regarding their health outside the therapy room. When self-management of symptoms is inevitable, giving skills that they need to cope with the symptoms appears to be the most important element of an intervention (Bodenheimer, et al., 2002). In the context of self-management, successful intervention appears to rely heavily on the implementation of strategies consistently by participants at home. Thus, format of treatment delivery is not necessarily important if self-management skills are adequately learnt and implemented. This is consistent with
several past studies that evaluated different delivery formats of CBT program that focused on self-management (e.g. Bastien, et al., 2004; Mimeault & Morin, 1999).

The quantitative results and some objective indicators appear to support the effectiveness and feasibility of the Weekend MMM. However, subjective comments from the participants are also an important indicator of the feasibility of the treatment. There is no point in delivering a treatment if it is not acceptable from the service user’s perspective. Both the Weekly and Weekend MMM were based on the same treatment manual and the same timeframe (i.e. 10 weeks). The only difference between the Weekend from Weekly MMM was the intensive session delivery, which resulted in less clinical contact. Weekend participants’ views on these issues were explored in the interviews. While all of the interviewed participants indicated that the full-day sessions were intense, their feelings and perceptions toward such intensity were different. Some of them expressed feeling overwhelmed by the amount of information they needed to absorb in one day. In addition, their declining concentration in the second half of the session was a barrier for them to learn the session materials properly. Past research suggests that engaging in a task for a few hours can cause fatigue, where individuals lose their ability to stay focused on tasks and can automatically shift attention to irrelevant stimuli (Boksem, Meijman, & Lorist, 2005). Moreover, sleep disturbance, often caused by night sweats, is a common complaint among participants. Sleep deprivation can have a negative impact on cognitive functioning including memory and concentration (Durmer & Dinges, 2005), which implies that long sessions might not be an optimal learning environment in this context. Despite these potential negatives, there were participants who held an opposite opinion. These participants did not find the long days to be an issue for them and perceived the intensive session as an ideal learning environment where they could fully concentrate and learn efficiently.
Another issue for the Weekend session was the small number of clinical contacts, although the number of treatment hours for both groups were the same. While Weekly participants met with the therapists every week to review their take-home activities and receive information for a new topic, Weekend participants only had input from the therapists at the first week for session 1-5 and at the sixth week for session 6-10. Therefore, Weekend participants were expected to revise one session and complete one take-home activity per week on their own after the session. Most of the Weekend participants mentioned about the difficulties with completing the tasks because there was no constant review. Take-home activities review appeared to serve two purposes: maintaining motivation and providing assistance. Participants would be more self-conscious and motivated to complete the take-home activities when there were other people involved in the process. Social influence is an important concept in social psychology. Deutsch and Gerard (1955) suggested that people conform with the expectations of other group members under social normative influence for the purpose of gaining acceptance and approval from the group. Also, normative influence increases when one’s behaviour is known to and appraised by other group members. When applied to our participants, they were more likely to complete the take-home activities if they had been given a chance to show their conformity to the group, that is, to discuss their take-home activities within the group. The discussion constituted a mutual monitoring between group members, as everyone tried to conform and behave like a “good client” who completed take-home activities and contributed to the discussion. In other words, meeting with group members gave participants motivation to complete the take-home activities. It appears that less social influence from the group was one of the reasons why the Weekend participants perceived difficulty in completing the take-home activities.
Apart from creating a form of peer pressure, group discussion also provided a platform for the participants to exchange ideas, get advice and share wisdom relating to menopause and its management. All participants, both from the Weekly and Weekend groups, gave very positive feedback regarding the group discussion. Most of them felt the discussions were beneficial in terms of providing assistance and support from the therapists and other group members. Having feedback and advice was another important element that helped participants completing the take-home activities and implementing new strategies. Participants raised questions and talked about the difficulties they faced in the discussion and the group problem-solved together. Without adequate support, participants might not have continued with the take-home activities, or may have given up trying new strategies. Feedback from the Weekend participants indicated that there was insufficient time for discussion which was probably due to the packed schedule of the full-day session. Additionally, timely assistance was not available for the Weekend participants because they only met once after the first session. More importantly, the lack of follow-up after the second session was frequently perceived as an issue by the Weekend participants.

Participants chose the Weekend MMM for various reasons, including geographical constraints, time concerns or just simply because they liked the idea of condensed sessions. All but one of the interviewees from the Weekend group indicated that if their constraints for attending the Weekly MMM had been removed, they would have chosen the Weekly format. They perceived the weekly sessions would have given them the advantage of focusing on one topic at a time, having enough time to learn and not being flooded with new information. This was also the perception of the Weekly participants.
Based on participants’ comments in the interviews, it seems that most of them preferred Weekly over the Weekend format. However, in reality, paying weekly visits to the clinic was impossible for some participants and the Weekend MMM was the only option for them. Having different delivery formats means more women could access treatment, which they would otherwise decline. It is also important to note that, despite the perceived disadvantages of intensive delivery format from participants’ perspective, paradoxically, the Weekend MMM did not differ from Weekly MMM in effectiveness and feasibility. That implies the MMM program can be delivered in an intensive Weekend format if some modifications are made to improve its acceptability. In review of the comments from the participants, it appears that the Weekend MMM is too “intensive” by delivering five sessions in one day. One Weekend participant suggested that instead of two sessions, three sessions can be used. This seems to be a viable alternative which compromises between intensity and logistic demands arising from extra visits. In regards to the take-home activities, more discussion time could be allocated to the reviews. Extra support in the form of telephone consultation could be provided so timely assistance would be available. Some Weekend participants expressed a strong need for follow-up after the second session. Although the need for follow-up might largely depend on individual characteristics, personal progress in the therapy or particular circumstances of the participants, it is still beneficial if some form of follow-up could be available as an option. A brief follow-up discussion session that could be open to participants from different Weekend groups would be a practical solution. Participation would be voluntary so only those interested would attend. Hopefully, with these modifications the Weekend MMM could be further developed as an effective, feasible and acceptable treatment option for menopausal women.
Menopause Experiences Prior to the MMM

To better understand how the MMM program helped to improve overall menopausal symptoms and psychological wellbeing, it is important to explore why such changes occurred. We acknowledge that the quantitative analysis could be inadequate in evaluating the range of changes that were encountered by participants. Thus, the addition of qualitative interviews are informative in terms of helping us to explore participants’ personal experiences of the MMM program and evaluate the program from the users’ perspective (Appendix C). It was impossible to fully understand the impact of the program on the women’s lives without knowing what the menopausal symptoms were like for the women before the MMM program. The first superordinate theme “Pre MMM: A Life with Chaos” and its associated subordinate themes “Overwhelmed”, “Loss of control”, “Loss of old identity” and “Affect relationship” depicted interviewees’ menopausal experiences prior to the group. Feelings of loss of control are not uncommon among women experiencing menopausal symptoms (Shore, 1999) and among those suffering from chronic illness (Sidell, 1997). The lack of personal control was associated with learned helplessness, which is a major characteristic related to depression (Seligman, 1975). If the situation was assessed to be out of personal control, long-standing and wide-ranging, the person would be more likely to feel powerless to improve the situation which subsequently leads to helplessness or even depression (Abramson, Seligman, & Teasdale, 1978). Prior to the MMM program, the women perceived their symptoms are uncontrollable, mainly due to the unpredictable nature of the symptoms, the presence of multiple symptoms concurrently and the inadequate knowledge of symptom management. Some women reported that their menopausal symptoms were pervasive and affected different aspects of their lives. When “uncontrollable” menopausal symptoms are left untreated for a long period of time,
feelings of helplessness and depressive symptoms may develop.

The subordinate theme “Loss of old identity” is similar to the research findings regarding patients’ experiences of chronic illness. The impact of the menopausal symptoms can be quite broad that affect physical, psychological and social functioning of the women. Furthermore, the situation is complicated by the unknown duration of their suffering as they could not foresee “recovery”. Under these circumstances, the women revealed they have had lost their old self, and even started to identify with the symptoms. Charmaz (1983, 1991, 1995) is one of the pioneer scholars researching individual’s experience of chronic illness and its impact on the sense of self. Although menopause should not be considered a chronic illness, some of the concepts and theory proposed by Charmaz are applicable to the experience of menopause. She stated that individual’s sense of self is quite intact with only mild “interruption” if they perceive recovery is possible in the future. However, maintaining a self of sense becomes difficult when their conditions start to intrude and place wide-ranging impact on their life. Eventually, an individual will lose their sense of self when they are “immersed” in their illness.

The association between menopause and interpersonal relationships is not well understood. It is still unclear whether menopause actually affected the quality of relationship, or women’s perception of their relationships changed at menopausal transition (Deeks, 2003). The subordinate theme “Affect relationship” illustrates such relationships from an insider’s perspective. According to the interviewees, the quality of their relationships was affected by their menopausal symptoms including mood swings, increased irritability, as well as exhaustion. Most of the past research on menopause and its influence on interpersonal relationships has focused on women’s relationships with their partner in terms of sexual functioning. The qualitative results
suggest that other areas of interpersonal functioning such as relationships with children and friends were also negatively affected and the deterioration of these relationships caused distress in these women. A number of past studies found that menopausal women experiencing relationship problems reported more depressive symptoms (L. Dennerstein, et al., 1999; Kaufert, et al., 1992). On the other hand, the depressive symptoms may also impair women’s social functioning (Lorraine Dennerstein, Smith, & Morse, 1994). Together with other subordinate themes, we can conclude that the negative impact of the menopausal symptoms could be quite broad and create turmoil in the life of our interviewees.

**Impact of the MMM program**

**Increased knowledge.** According to the superordinate theme “**MMM Answered My Questions**”, learning more about menopause had an impact on women’s cognitions about menopause. Prior to the MMM program, a lot of the women did not have much knowledge about menopause and the symptoms associated with it. The uncertainty about menopause caused psychological distress, which is congruent with the findings regarding chronic pain (Idler, 1993). After learning more about menopause in the MMM program, participants appeared to have adopted a more accurate attribution and expectation about menopause. According to the self-regulation model, people construct their beliefs and expectations about their illness in six attributions: identify, cause, timeline, consequences and cure/control (Leventhal, Diefenbach, & Leventhal, 1992). These components comprises an illness representation that determines an individual’s behavioural and emotional response to the illness. In a study about menopause representation, results suggested that perceived low control over menopausal symptoms was associated with depression, and perceived negative consequences of menopause were related to treatment seeking (Hunter & O'Dea, 2001). In other words, knowledge
can help women to form more accurate beliefs about menopause, which in turn can have a beneficial effect on their psychological wellbeing. This is further supported by the literature on the health/psycho-education intervention about menopause, where improved mood, attitude, and severity of symptoms resulted from the increased knowledge about health and menopause (Hunter & O'Dea, 1999; Liao & Hunter, 1998; Rotem, et al., 2005).

**Increased self-efficacy.** A theme that was continually referred to by the participants in the interviews was the increased self-efficacy in managing menopausal symptoms. Self-efficacy has two major impacts on the wellbeing of individual through its influence on people’s thinking, feeling and behaviours (Bandura, 1994). Firstly, improved self-efficacy can have a positive impact on an individual’s thoughts and accompanying emotional responses. In the subordinate theme “More self-efficacious and in control”, participants revealed feeling confident in their own ability to manage the symptoms. They believed they were capable of mastering the skills and perceived having control over the situation following intervention. These positive thoughts enhanced the individual’s psychological wellbeing, which was reflected in the subordinate theme “Positive sense of self”. Additionally, some improvements in psychological wellbeing following the MMM program were also reflected in the quantitative results which are congruent with the qualitative results. On the contrary, people with low self-efficacy usually catastrophize the situation and place enormous doubt on their capability to deal with problems. They generally attribute failure to their own incapability and give up on tasks fairly easily. Thus, people with low efficacy are more vulnerable to stress, anxiety and depression. Past research has also demonstrated that low self-efficacy has substantial contributions to longstanding depression and anxiety (Rehm & Rokke, 1988). Secondly, self-efficacy has an essential role in
enhancing motivation, and subsequently influencing individual’s behaviours. A number of interviewees emphasised their motivation and determination to manage their symptoms, as reported in the subordinate theme “More self-efficacious and in control”. Being willing to take up personal responsibility is another form of determination that was evidenced in the interviews. Motivation comes from people’s expectation of the outcome of their actions and their ability to perform such actions (Bandura, 1994). In other words, when the participant believes implementing coping strategies can reduce their symptoms and she is able to do these strategies, she will be more motivated to initiate these behaviours. Furthermore, self-efficacy often plays a role in determining how individuals tackle obstacles and setbacks. Health behaviour change is not easy, and people with high perceived self-efficacy tend to be more determined and persistent in striving until their goals are attained. The influence of self-efficacy on people’s health-related behaviours has long been supported in the research regarding quitting smoking (DiClemente, Prochaska, & Gibertini, 1985), losing weight (Schifter & Ajzen, 1985) and rehabilitation program compliance (Kaplan, Atkins, & Reinsch, 1984). To our participants, self-efficacy appeared to be an important element to promote their motivation towards strategy implementation and health behaviour change.

Participants’ enhanced self-confidence was likely to be attributed to increased knowledge regarding coping skills and to the positive experience obtained from skill mastery. As previously mentioned, the MMM program aimed to provide participants with practical cognitive-behavioural strategies that they could use outside of therapy. In addition to clear instruction, examples, practice and role-play were used in the group to ensure skill mastery which is a crucial element in enhancing self-efficacy (Gonzalez, Goeppinger, & Lorig, 1990). Another important tool to facilitate skill mastery and strategy implementation were the take-home activities, which were small, achievable
tasks that allowed participants to try out the strategies they were taught in that particular week. Apart from an individual’s success, self-efficacy can also be acquired through observation and modelling other’s behaviours (Bandura, 1986). Participating in group therapy offers participants the opportunity to learn from other members (Holmes & Kivlaghan, 2000). Group discussion has consistently been nominated as the component in the program that was most appreciated by the participants. One of the reasons given was being able to benefit from others’ experience in managing symptoms through vicarious learning, which refers to learning by observing others. Vicarious learning is one of the therapeutic factors that can only been found in group therapy, as opposed to individual therapy (Fuhriman & Burlingame, 1990). Apart from skills modelling, simply listening to other’s successes also enhances self-efficacy (Bandura, 1994). This process is more influential when the successful experience was from similar others. Interviewees’ perspectives on the benefits of group participation are detailed in the superordinate theme “The Power of Group”.

**Positive sense of self.** The MMM program engendered a positive sense of self via unique group therapeutic factors and personal achievement. Research on therapeutic processes suggests that group treatment encourages participants to shift between help seekers and help providers (Fuhriman & Burlingame, 1990; Holmes & Kivlghan, 2000), which promotes self-esteem (Yalom & Leszcz, 2005). In the superordinate theme “The Power of Group” participants talked about considering themselves as important to others in terms of sharing their experience not only of menopause, but also their experience of handling the stressful events that midlife women often face. They also saw themselves in the position of being a positive role model to others who were still struggling in similar difficult circumstances. Some of these help providers have long considered themselves as weak in need of support and help from others. This
experience of altruism offered them opportunity to appreciate their own ability and worthiness, and subsequently promoted a positive sense of self and reduced psychological distress (Butler, Hokanson, & Flynn, 1994). Personal achievement on successful strategy implementation gave participants a sense of accomplishment. Some interviewees talked about the positive outlook with general improvement. Increased self-efficacy is likely to have played a big part in building a positive sense of self.

**Positive attitude.** Our interviewees consistently expressed feeling reassured, supported and understood when giving the opportunity to talk about the experience of menopause, both positive and negative, in an empathic environment. These feelings were particularly salient in the context of menopause, which is not a topic that is commonly talked about between women. Sharing also played an essential role in normalising participant’s menopausal symptoms, as well as their emotional responses to it. Participants expressed great appreciation for the opportunity to share and listen to the stories of similar others, resulting in reduced sense of isolation as perception of the uniqueness of their symptoms dissipated. The reassurance also facilitated a positive change of attitude towards menopause. A specific type of positive attitude emphasised by the participants was the accepting attitude, which was described by the participants as a new perspective on viewing menopause and the stage of life. Instead of struggling with the symptoms, they more calmly accepted this stage of life. This change of attitude appeared to have a positive influence on their mood, which could have a reciprocal effect of improving menopausal symptoms. Past research has suggested that a negative attitude is associated with depression, anxiety, low self-esteem, and increased reporting of hot flushes (Hunter & O'Dea, 2001; Rendall, et al., 2008; Reynolds, 2000). The finding of a change towards a more positive attitude towards menopause following group therapy has also been reported in past research (Cheng, Wang, Wang, & Fuh,
Clinical Implications

The current study contributes to the literature on the effectiveness of GCBT for menopausal symptoms. There are a number of clinical implications of this study. Firstly, the findings suggest that CBT can be a low-risk treatment alternative for women managing menopausal symptoms. While HRT has been the main stream treatment for hot flushes for many years, there is increasing demand for alternative treatments due to the increased health risks of HRT reported by WHI and WISDOM (Rossouw, et al., 2002; Vickers, et al., 2007). Although the present results are far from suggesting CBT can yield comparable effectiveness as HRT in reducing hot flushes, it revealed MMM GCBT provided substantial benefits in improving women’s overall menopausal symptoms including psychological symptoms. Health risks, if any, imposed on participants are far less than those associated with HRT. Secondly, the long-term beneficial effects of MMM GCBT on menopausal symptoms are promising. The current study showed positive treatment effects of GCBT on menopausal symptoms at 6-month follow-up. This finding is particularly important when high symptom relapse rates have been reported by HRT users after discontinuing treatment (Ockene, et al., 2005). This maintenance of treatment effects could possibly be attributed to the knowledge and self-efficacy that participants gained as a result of the intervention. It has been shown in past research that an individual’s self-efficacy can facilitate relapse prevention (Schwarzer, 2008). Self-efficacy is a central concept that is essential to successful chronic disease self-management (Bodenheimer, et al., 2002). Menopause has been recognised by researchers, clinicians and women themselves as a long-term condition, rather than just a few years of transition (Hunter & O'Dea, 1997). Although menopause is not considered an illness, the principals of chronic disease self-
management appear to be applicable in coping with menopausal symptoms in the long-term. Thirdly, the comparable results of the Weekly and Weekend groups suggest that both delivery formats are effective and feasible. The intensive Weekend group was an innovative format for delivering a GCBT where different participants' needs and preferences could be accommodated. Subsequently, more women could benefit from the program. Indeed, various delivery formats of CBT such as computerised programs and self-help materials have been developed in the last few decades to increase its accessibility (Proudfoot et al., 2004; C. Williams, 2001). Future development of the MMM program could explore other flexible possibilities for delivering this program.

Fourthly, the current findings suggest that the qualitative data in addition to the quantitative evaluation can provide clinically useful information on the impact and the non-specific therapeutic factors. Past research has suggested using both quantitative and qualitative research methods particularly during the development phase of an intervention (Bevan, et al., 2010; Keefer & Blanchard, 2005a; Mason & Hargreaves, 2001). The qualitative information can inform researchers about how the intervention works and what can be changed to improve the effectiveness or compliance from service-users’ perspectives. For instance, in this study, increased knowledge, skills and self-efficacy in managing symptoms were consistently revealed by the participants as key benefits of the program. The non-specific factors, although not often assessed in the quantitative evaluation, apparently were essential to the therapeutic process. These factors could possibly be the intermediate outcomes that ultimately improved symptoms and the health of participants. This information can assist future study design in terms of outcome data collection.

Limitations

There are several methodological limitations of this study that should be
addressed. Firstly, although the waitlist control time period was used in an attempt to provide a control condition, there is no alternative treatment control group that can rule out any other factors that explain the treatment effects. It is difficult to make a definitive conclusion about the effectiveness of the intervention without comparing with a control condition, which is why a RCT is needed. However, a RCT is expensive to conduct (Sanson-Fisher, Bonevski, Green, & D'Este, 2007). Thus, it is important to establish preliminary evidence of positive treatment effects before investing in a RCT. Secondly, our participants were self-selected, relatively educated and not randomly allocated to the treatment formats. The fee-paying treatment program also implied a possible sample bias. All these factors constrain the generalisability of the findings, and the potential systematic biases in the sample can reduce the validity of the findings. Moreover, ethnic minority groups were not well represented in the study population, hence, the findings might not be generalisable to other cultural populations. Thirdly, the small sample size might not provide sufficient power to detect all the intervention effects. The strength of the results could be improved by employing a larger sample size. Fourthly, the follow-up assessment time periods might not have been lengthy enough to reveal all the treatment effects, especially for coping with anxiety symptoms where participants may need more time to master the skills. Longer follow-up assessments would further determine the durability of the treatment effects. Fifthly, with respect to the qualitative research, the small number of participants also limits the generalisation of these findings. Moreover, participants who “dropped out” of the program were not included in the qualitative study. The reasons for discontinuing, if known to the researcher, would be informative and useful in future program development. However, it might be impractical to collect this information because participants who terminate therapy are not likely to be willing to be involved in further
Future studies

The current research is a pilot study that aimed to provide preliminary results about the effectiveness of GCBT in treating menopausal symptoms. Based on the developing framework for complex health intervention proposed by the UK Medical Research Council (Craig, et al., 2008), the current findings contribute to the piloting stage in building the evidence for the effectiveness and feasibility of GCBT for menopause. Together with previous studies (Alder, et al., 2006; Keefer & Blanchard, 2005a), it has justified the use of a RCT to examine the efficacy of GCBT for menopausal symptoms. A control group with general support could be used to compare with GCBT to determine the specific CBT components that contribute to treatment effectiveness. RCT is considered the gold standard for evaluating the efficacy of an intervention (Guyatt et al., 2008; Harris et al., 2001). If conducted well, it allows researchers to study the therapeutic questions of interest in a controlled environment with minimal bias. In addition, past studies reveal that culture/ethnicity differences can influence individual’s experience of menopause. Therefore, the development of any measurement or intervention should take cultural issues into consideration. Lastly, despite increasing evidence of the effectiveness of GCBT for menopause, the mechanism behind the effects is still not clear. The qualitative results of the current study suggest that knowledge, self-efficacy, positive sense of self and attitudes toward menopause could be the potential intermediate outcomes that warrant further investigation.

Conclusion

This study aimed to contribute to the literature on treatment for menopausal symptoms using a psychological intervention. The beneficial effects on menopausal
symptoms and improved psychological wellbeing produced by the MMM program are consistent with previous GCBT studies. Nevertheless, we cannot ascertain if the treatment has positive effects on anxiety symptoms and general physical health. The treatment gains, except for stress-related symptoms, were maintained at least for six months. Furthermore, there was no advantage of Weekly over Weekend format in relation to treatment gains. The qualitative data further validated the acceptability of the Weekend groups and revealed similar treatment effects from participants’ perspective. The impact of the MMM program included increased knowledge, increased self-efficacy, positive sense of self and positive attitude towards menopause.

In conclusion, the results of this study suggest that the MMM program has the potential to be an effective and feasible, non-pharmacological treatment alternative for managing menopausal symptoms. Since both Weekly and Weekend groups showed similar results, the MMM program could be delivered in either format to suit clients’ needs and preference. Similar to previous studies, the current findings support the use of GCBT for managing peri-menopause symptoms.
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10.1023/a:1011095624717


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Appendix A

Detailed Method Section

Participants

Participants for the MMM program were recruited from the University of Newcastle via internal email and newsletter to all the staff and posted notice around campus, and via a seminar at the University women’s group. Participants were also recruited from the community via media release in local newspapers and radio interview. A total of 121 women responded to the program’s promotion and self-referred to the University of Newcastle Psychology Clinic. Intern psychologists in the clinic conducted telephone intake interviews with all the interested women to screen for inclusion and exclusion criteria. Women who were experiencing any peri-menopausal symptoms (i.e. hot flushes and night sweats) and/or had any changes in the menstrual cycle were eligible for the program. Exclusion criteria were psychosis and current suicidality. Of the 121 women who showed interest, 104 (86%) were allocated to different groups according to their preferred time on a first-come-first-serve basis. The remainder indicated that they were no longer interested or had other commitments. Women who were allocated to groups were invited to participate in the current study. They were informed that their involvement in the research was voluntary. Information sheets (Appendix D) were sent and written informed consent (Appendix E) was obtained from all participants.

Among those who were allocated to the groups, 31 (30%) did not attend any session. The final sample was 73 women, consisting of 51 participants of the Weekly program and 22 participants of the Weekend program. The pattern of contact and participation is shown in Figure A1.
Five participants from the Weekly groups and five participants from the Weekend groups were randomly selected for interviews. The selected participants were contacted by the administrative assistant from the Psychology Clinic via phone to obtain initial verbal consent. A follow-up letter (Appendix F) and a information sheet (Appendix G) were sent to the participants upon consent. If initial verbal consent was not given, another participant was selected until the targeted participant number was reached. In total, 18 women were contacted and the final sample was 10.
Measures

Demographic and medical history. Socio-demographic characteristics and medical history including reproductive health information were collected using a self-report questionnaire. Reproductive health information included menopause status, age at menarche, age biological mother experienced menopause, history of breast cancer and hysterectomy/ovary removal. Menopause status was determined by regularity of menstrual periods, and based on the classification proposed by the Study of Women’s Health Across the Nation (SWAN; Bromberger, et al., 2007). The SWAN classification system is similar to those of WHO and STRAW, but with relatively simple and clear criteria for each menopausal stage. A number of menstrual cyclicity studies revealed that a lot of women are not good at providing retrospective data regarding their menstrual cycles (Soules, et al., 2001). In response to this potential recall error, we decided to adopt the SWAN classification given that it is easy for participants to understand and then provide information.

Menopausal symptoms. The Menopause Rating Scale (MRS) is a self-administered instrument which measures the severity of menopausal symptoms and the impact on health-related quality of life (The Berlin Center for Epidemiology and Health Research, 2008). The scale consists of 11 items and participants are required to indicate the perceived severity of each symptom on a 5-point Likert scale from 0 (none) to 4 (very severe). Three dimension scores: psychological, somato-vegetative and urogenital symptoms, can be produced. The total score is the sum of the three dimension scores. Regarding reliability, the internal consistency coefficient for the MRS was .83 and the test-retest correlation coefficient was .90; regarding validity, the internal structure correlation coefficient of sub-scores and total score were high (.70 to .90; Schneider, Heinemann, Rosemeier, Potthoff, & Behre, 2000). The correlation among sub-scales
were .40 - .70, which indicates that the three sub-scales were not independent from each other. In comparison with other similar measurements, high Pearson correlation coefficient of .91 was found with the Keperman Index (Schneider, et al., 2000). The somatic and psychological sub-scales of the MRS were compared with the SF-36, resulting in a Kendall tau coefficient of .43 and .49, respectively, which shows that the MRS is significantly associated with the short form 36-item Medical Outcome Study questionnaire (SF-36; Schneider, et al., 2000).

**Psychological well-being.** The short form of the Depression Anxiety Stress Scale (DASS-21) was used to evaluate the psychological wellbeing of the participants (Antony, et al., 1998). The DASS is a 42-item, self-report measure that assesses symptoms on a continuum of distress, providing three subscale scores for depression, anxiety and stress. The instrument has well-established psychometric properties in terms of internal consistency and validity, both in clinical and non-clinical samples (Antony, et al., 1998; T. A. Brown, et al., 1997; Clara, Cox, & Enns, 2001; Crawford & Henry, 2003; Page, Hooke, & Morrison, 2007). It has also shown high correlations with the Beck Depression Inventory and the Beck Anxiety Inventory, suggesting a good convergent validity (Lovibond & Lovibond, 1995). A short form of the DASS (DASS-21), which contains 21 items was developed later and found to have similar psychometric properties as the long form. Good reliability and construct validity have been shown in both clinical and non-clinical populations (Antony, et al., 1998; Clara, et al., 2001; Henry & Crawford, 2005). The DASS-21 was used in this study because similar results can be obtained from this shorter version, while the administration time is halved.

**General health.** The SF-36 is the short form of the Medical Outcomes Study questionnaire, which is a generic indicator of health status for use in population surveys.
and outcome measures of clinical interventions (McDowell, 2006). The instrument assesses eight health domains using four physical health components which include physical functioning (PF), role limitations due to physical health problems (RP), bodily pain (BP), general health perceptions (GH); and four mental health components which include vitality (VT), social functioning (SF), role limitations due to emotional problems (RE), and mental health (MH; Ware, et al., 1993). Participants’ response to each item are scored (recoding needed for some items) and summed to provide raw scores for each eight scales. The raw scores are then transformed into a 0 – 100 scale, with 0 indicating lowest well-being and 100 indicating highest well-being. The transformed scores allow comparison between studies, as well as with the population norms (Ware, et al., 1993). Two summary scores, Physical Component Summary (PCS) and Mental Component Summary (MCS), can be obtained through scoring algorithms described in SF-36 Physical and Mental Health Summary Scales: A User's Manual (Ware, et al., 1994). The SF-36 has been widely evaluated for use with general, as well as different clinical populations (Garratt, et al., 2002). The reported reliability statistics for the SF-36 have reached the recommended standard of .70, with median reliability coefficients of .80 (Ware, et al., 1993). Research has shown that the SF-36 has good content (Ware et al., 1995), criteria (Clara, et al., 2001), predictive (McHorney, 1996) and construct validity (McHorney et al., 1993; Ware et al., 1995). The SF-36 was chosen to be used in this research because of its good psychometric properties, as well as its ability to be self-administered by the participants in a short period of time (i.e. 5-10 minutes).

**Symptom diary.** Symptom diary measuring daily vasomotor symptoms was commonly used in previous studies (i.e. Hunter & Liao, 1996; Keefer & Blanchard, 2005a). The symptom diary used in the current study was based on items listed in the
MRS and was adapted to allow participants to record their symptoms every day (Appendix H). Participants were asked to complete a symptom diary every week during the program to monitor their menopausal symptoms.

**Use of strategies.** An extra question was included in the follow-up survey to collect information about strategies that participants used to help reduce their menopausal symptoms. Participants were asked to rate how frequently they had used the 16 strategies that were included in the program on a scale from 0 (not at all) to 10 (every day) in the past week.

**Qualitative interviews.** Qualitative data was obtained through semi-structured interviews. Each interview consisted of a set of standard open-ended questions, as well as some questions that were specifically designed to fit the situation of each participant. Instead of a focus group, one-to-one interviews were used because they are more flexible, rapport building is easier, and interviewees are more able to talk about sensitive and in-depth personal experiences (Reid, Flowers, & Larkin, 2005). The standard interview questions are listed in Table A1.

**Procedures**

**Ethics approval.** The first ethics approval was obtained from the University of Newcastle Human Research Ethics Committee (HREC) in April 2009 for the initial research project by a fellow student, which aimed to evaluate the effectiveness of the Weekly MMM program. An application for variation, which added myself to the current research project as an additional researcher, was submitted in August 2009 and approval was obtained in September 2009 (Appendix I). A subsequent variation was made to include a second supervisor and to seek approval to access participants for semi-structured interviews. Final ethics approval was granted in September 2009 (reference number: H-2009-0447; Appendix J).
Table A1

*Standard Interview Questions for the Qualitative Research*

<p>| | |</p>
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What were the symptoms of menopause like for you prior to the group?</td>
</tr>
<tr>
<td>2.</td>
<td>How did you cope with these symptoms / stresses prior to the group?</td>
</tr>
<tr>
<td>3.</td>
<td>What did you expect to get from the MMM group before it started?</td>
</tr>
<tr>
<td>4.</td>
<td>How did you find the topics covered in MMM?</td>
</tr>
<tr>
<td>5.</td>
<td>How did you find the group discussion?</td>
</tr>
<tr>
<td>6.</td>
<td>How did you find the take home activities?</td>
</tr>
<tr>
<td>7.</td>
<td>Overall in what way did the MMM impact your life?</td>
</tr>
<tr>
<td>8.</td>
<td>Do you think the MMM group met your expectations?</td>
</tr>
<tr>
<td></td>
<td>a. If yes, in what way?</td>
</tr>
<tr>
<td></td>
<td>b. If no, what could be done differently?</td>
</tr>
<tr>
<td>9.</td>
<td>Which group did you join, weekend or weekday? What do you think about the delivery format?</td>
</tr>
<tr>
<td>10.</td>
<td>Do you think refresher session(s) is/are needed?</td>
</tr>
<tr>
<td></td>
<td>a. If yes, how many? What is the best timeframe for the refresher session(s)?</td>
</tr>
<tr>
<td></td>
<td>b. If no, why not?</td>
</tr>
</tbody>
</table>

**Data Collection.** A battery of questionnaires consisting of demographic and medical history questions, the MRS, the DASS-21, and the SF-36 was used in data collection (Appendix K and Appendix L). There were five assessment time points: (1) waitlist control time period (6-8 weeks before the treatment commenced); (2) pre-treatment (1-2 weeks before the treatment commenced); (3) post-treatment (immediate after treatment); (4) 3-month follow-up; and (5) 6-month follow-up. In the waitlist control time period, participants were used as their own control, which is similar to a recent study of GCBT for menopause (Alder, et al., 2006). Participants did not receive any psychological intervention during the waitlist control time period. In order to keep
contact to a minimum during the waitlist period, participants were only contacted to
discuss logistic issues. Figure A2 shows the timeline for five assessment periods and
MMM sessions.

Figure A2. Timeline for five assessment periods and MMM sessions. WL = Waitlist
control time period; Pre = pre-treatment; Post = post-treatment; 3-m = 3-month follow-
up; 6-m = 6-month follow-up; Wk = Week; WD = Weekly group; WE = Weekend
group; MMM = Menopause Made Manageable.

Completion of the DASS-21 could identify participants who were scoring high
on depressive symptoms. An ethical requirement was to contact these women and
advise them to seek additional assistance for psychological distress if factors other than
their peri-menopausal symptoms were contributing to their distress. Seven participants
were contacted via phone and information about counselling services were provided.

Ten participants, who had completed the program, were invited to participate in
qualitative interviews. This sample size followed the recommendation by Smith,
Jarman and Osborn (1999). Written consent was obtained prior to and after the
interview (Appendix M). The semi-structured interviews were conducted in the therapy
room in the Psychology Clinic at University of Newcastle. Each interview took
approximately 60 minutes. These interviews were audio-taped to allow verbatim transcription for data analysis.

Table A2

Distribution of Participants in Weekly and Weekend Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Date</th>
<th>WD / WE</th>
<th>N booked</th>
<th>N attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>May - Aug 09</td>
<td>WD</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>May – Aug 09</td>
<td>WD</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>May – Aug 09</td>
<td>WD</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>May – Aug 09</td>
<td>WD</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Sept – Nov 09</td>
<td>WD</td>
<td>6</td>
<td>4</td>
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<td>6</td>
<td>Sept – Nov 09</td>
<td>WD</td>
<td>8</td>
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<td>7</td>
<td>Sept – Nov 09</td>
<td>WD</td>
<td>7</td>
<td>6 (5) (^a)</td>
</tr>
<tr>
<td>8</td>
<td>Sept – Nov 09</td>
<td>WD</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Jul – Sept 09</td>
<td>WE</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>Sept – Oct 09</td>
<td>WE</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Oct – Nov 09</td>
<td>WE</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Oct – Dec 09</td>
<td>WE</td>
<td>7</td>
<td>4 (5) (^a)</td>
</tr>
<tr>
<td>13</td>
<td>Feb – Apr 10</td>
<td>WD</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>Feb – Mar 10</td>
<td>WE</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>104</td>
<td>73</td>
</tr>
</tbody>
</table>

*Note. WD = Weekly group; WE = Weekend group

\(^a\) One participant attended five sessions in Group 7 (Weekly) then attended one full-day session in Group 12 (Weekend), therefore she was included in Weekend group analysis.

**Treatment.** The current GCBT was named Menopause Made Manageable (MMM). The MMM program manual was developed by staff and student at the University of Newcastle Psychology Clinic. The program aimed to provide women with information and techniques that could assist them to address the physical and psychological changes due to menopause. The intervention was delivered by RW, Clinical Psychologist, with the assistance of 1-2 intern psychologists for each group, depending on the group size. The program fee is $100. Participants were encouraged to
pay full fee up front. However, special arrangement, i.e. pay for one session each time, i.e. $10 / weekly session or $50 / weekend session, can be made if requested. The distribution of participants to the MMM groups is presented in Table A2.

**Weekly group.** The Weekly MMM program consisted of ten weekly sessions with each session lasting 1.5 hours. Six to eight participants were allocated to each group initially, but the actual number attending varied from two to eight. Low numbers in some groups was due to patterns of non-attendance. For instance, five women who were from a town two hours from Newcastle who were car-pooling, did not attend (Group 11). The treatment protocol was structured and followed the therapeutic procedures outlined in the manual. Sessions began with a practice of a new relaxation activity (e.g. Progressive Muscle Relaxation, guided imagery, breathing, etc.). A discussion of take-home activities was introduced after the first session. Subsequently, the main facilitator delivered the content of the current session. An interactive style was employed where participants were encouraged to contribute or ask questions as the session continued. Participants were also provided an opportunity to share their experiences of menopausal symptoms, as well as their coping strategies via group discussion. Between-session take-home activities were assigned, where participants were given opportunities to consolidate the knowledge gained, and to try out some of the new strategies. Ten sessions were outlined as follows: (1) Introduction and program overview; (2) Physical wellbeing; (3) Psychological wellbeing; (4) Change processes; (5) Deciding to change; (6) Memory and concentration; (7) Stress management: procrastination; (8) Social support and social environment; (9) Assertiveness and conflict resolution; and (10) Review and maintaining change. Table A3 lists the themes, strategies and take-home activities for each of the program’s 10 sessions.
<table>
<thead>
<tr>
<th>Session</th>
<th>Topics and contents</th>
<th>Strategies</th>
<th>Take-home activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction and Program Overview</td>
<td>✓ Relaxation exercise</td>
<td>- Mindful eating</td>
</tr>
<tr>
<td></td>
<td>• overview of program; physical, psychological and social effects of menopause;</td>
<td>✓ Mindfulness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>management strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Physical Wellbeing</td>
<td>✓ Healthy diet</td>
<td>- Weekly exercise routine</td>
</tr>
<tr>
<td></td>
<td>• symptoms of menopause; physiology of hot flushes; menopause and diet;</td>
<td>✓ Increase water intake</td>
<td></td>
</tr>
<tr>
<td></td>
<td>managing menopause via exercise</td>
<td>✓ Increase soy intake</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Increase exercise</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Psychological Wellbeing</td>
<td>✓ Identifying and changing unhelpful thinking patterns</td>
<td>- Thought record</td>
</tr>
<tr>
<td></td>
<td>• stress arousal continuum; dealing with stress; risk factors for depression &amp;</td>
<td>✓ Sleep routine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>anxiety; changing life stages; CBT for menopause; belief modification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Change Processes</td>
<td>✓ Goal setting</td>
<td>- Behaviour change</td>
</tr>
<tr>
<td></td>
<td>• process of change; identify your goals and barriers to achieve change; make</td>
<td>✓ Breathing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and maintain change; motivation; theory of change (PRIME Theory)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Deciding to Change</td>
<td>✓ Goal setting</td>
<td>- Develop a change plan</td>
</tr>
<tr>
<td></td>
<td>• goal setting; long and short term goals – S.M.A.R.T. goals; deciding to change;</td>
<td>✓ Breathing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>obstacles to achieve goals; the change plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Memory and Concentration</td>
<td>✓ Using memory techniques</td>
<td>- Paced respiration</td>
</tr>
<tr>
<td></td>
<td>• problems with memory and concentration; strategies to improve memory and</td>
<td></td>
<td>- Memory tips</td>
</tr>
<tr>
<td></td>
<td>concentration; menopause and sleeping</td>
<td></td>
<td>- To-do list</td>
</tr>
<tr>
<td>7</td>
<td>Stress Management: Procrastination</td>
<td>✓ Reducing procrastination</td>
<td>- Time management</td>
</tr>
<tr>
<td></td>
<td>• what is stress; symptoms of stress; menopause and stress; coping with stress;</td>
<td>✓ Improved time management</td>
<td>- Goal setting</td>
</tr>
<tr>
<td></td>
<td>cause of procrastination; time management techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Social Support and Social Environment</td>
<td>✓ Using social support networks</td>
<td>- Utilise social support</td>
</tr>
<tr>
<td></td>
<td>• sexual problems and strategies; social environment and menopause; using support</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to cope with anxiety and depression; pathways of social support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Assertiveness and Conflict Resolution</td>
<td>✓ Being assertive</td>
<td>- Conflict management</td>
</tr>
<tr>
<td></td>
<td>• understanding assertiveness; dealing with feelings of guilt; what is conflict;</td>
<td>✓ Managing conflict</td>
<td>- Using assertiveness</td>
</tr>
<tr>
<td></td>
<td>resolving conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Review and Maintaining Change</td>
<td></td>
<td>- Checklist of all the strategies</td>
</tr>
</tbody>
</table>
Weekend group. Participants in the Weekend MMM program received two 7.5-hour sessions on two weekends scheduled five weeks apart. This arrangement was intended to give participants enough time to complete the take-home activities and assimilate the information and to follow the same sequence as the weekly group but in a condensed format. The first five topics were covered in the first session, while the remainder were delivered in the second session. To help participants remain focused on the program course, 10-minute breaks were provided after each topic. A number of group activities that involved active participation were also designed to keep participants engaged. The Weekend groups were conducted by the same therapist (and 1-2 intern psychologists depending on group size) and used the same treatment manual as the Weekly groups.

Data Analysis

Quantitative analysis. Baseline socio-demographic variables, medical history and pre-treatment outcome measures including the MRS, the DASS-21, and the SF-36 were examined for significant group differences using t-tests for continuous data and chi-square tests for categorical variables. Similar analyses were conducted between those who attended and did not attend the program; as well as for those who completed the program and dropouts.

Means and standard deviations were computed for each of the outcome measures (MRS, DASS-21 and SF-36) at waitlist, pre- and post-intervention, as well as 3- and 6-month follow-up. Changes in mean scores within each group over five assessment time points and between two group formats at each time point were evaluated using a Linear Mixed Model (LMM) using time as the within subject repeated measures factor and group membership (Weekly vs. Weekend) as the between subjects factor. As a clinical study, the issue of incomplete outcome data was unavoidable. This
study followed the principles of intention-to-treat (ITT) analysis in handling the issue of missing post- and follow-up data. According to ITT, all participants should be included in the analysis in order to minimise bias due to attrition (Higgins & Green, 2011). To achieve that, analysis can only be performed by imputing the missing values. However, LMM provides an effective estimation approach that does not require imputation of missing values (Molengberghs & Kenward, 2007). A compound symmetry covariance structure was found to be satisfactory for the residuals over time. An alpha level was set at .05. Post hoc test for differences between fitted model means at different times were Bonferroni adjusted for the number of a priori planned comparisons, i.e. $p = .05/4 = .0125$ for four pre-planned comparisons. The residual from the final model was tested for normality and constant variance. Normality was acceptable for the MRS and SF-36 scales. Since the DASS-21 scores were skewed, a transformation was performed by taking the log of the scores plus one. This improved the normality of the distribution substantially. Analyses revealed that the variance was constant over different time periods. The statistical analyses were performed using PASW Statistics for Windows, Version 18.0.

Effect sizes were used as indices of the magnitude of treatment effect. They were calculated using the Cohen’s formula (Cohen, 1988). An effect size of 0.2 indicates “small effect”, 0.5 indicates “medium effect” and 0.8 indicates “large effect”.

Qualitative analysis. The data was analysed using interpretative phenomenological analysis (IPA). IPA (J. A. Smith, 2004; J. A. Smith, Flowers, & Larkin, 2009; J. A. Smith, Flowers, & Osborn, 1997; J. A. Smith & Osborn, 2003) was selected to analyse the data because it is particularly suitable to explore the research topic in detail from participant’s perspective, to capture and explore the meanings of each individual’s experience. This approach is phenomenological because it is
concerned with individual’s perceptions; it is interpretative because its analysis is a process of the sense-making of the participant, as well as of the researcher. IPA acknowledges that researcher’s own perspective and experiences play an essential role in the interpretation process, that is, making sense of participant’s experience. Therefore, the resultant “lived experience” of the participant is considered a product that is brought together by dual interpretations, the “subjective” process by the participants and the “reflective” process by the researcher (Reid, et al., 2005).

In the last decade there has been a vast increase in qualitative research in psychology, and there is evidence that the number continues to rise (Reid, et al., 2005). Smith, Jarman and Osborn (1999) suggested that IPA is particularly useful in the research of health psychology. Researchers in the field started to recognise that it is important to understand patient’s interpretation of, as well as the meaning that is assigned to his/her ill-health condition (Brocki & Wearden, 2006). IPA provides researchers an opportunity to directly listen to the voice of the patient, from which they can uncover the underlying perceptual process that individual uses to make sense of his/her bodily experiences. Smith and Osborn (2003) suggested that IPA is particularly useful in exploring different ways that individuals with the same diagnosis make sense to their health conditions, as IPA helps to reveal subjective personal meanings instead of objective accounts of the condition.

While the number of studies of psychological intervention for menopause is increasing, most existing research has only adopted quantitative methods focusing on symptom reductions as measured by standardised questionnaires. We acknowledge that the quantitative data could be inadequate in evaluating the range of changes encountered by participants. Thus, we have employed a qualitative research method in the second part of the study, aiming to explore participants’ personal experiences of MMM and to
evaluate the program from users’ perspective. The use of IPA allows us to better understand the meaning of MMM for women. Furthermore, the qualitative information can facilitate the evaluation of the program from user’s perspective by providing possible insights into the therapeutic factors that make the program effective, as well as things that can be improved. This valuable information can assist us to develop the MMM program into a more acceptable, or even more effective treatment program for menopausal women. We believe that the qualitative data is a useful supplement to the quantitative data in this study, by allowing us to elucidate the adjustment processes of the menopausal women during and following MMM. Qualitative research has been used and recommended by some researchers to evaluate new psychological interventions (i.e. Bevan, et al., 2010; Mason & Hargreaves, 2001).

The qualitative analysis in the current study was primarily conducted by the student researcher and followed the processes described by Smith and Osborn (2003). The audio tapes from the interviews were transcribed verbatim by the student researcher. Each interviewee was given a pseudonym in order to protect their privacy. After the transcription, the first stage of data analysis involved reading the transcript a number of times and making a note of significant or interesting points. The second stage consisted of identifying emerging themes from the notes. The third stage involved clustering the subthemes into some main themes according to their conceptual similarities. The fourth stage was to produce a table of super-ordinate themes, which shows the structure of the main themes. The table was referenced to the interview transcript so information supporting the themes could be identified. The above process was conducted for each interview. Patterns were identified across cases and recorded in the table of themes, which were then transformed into a narrative account. The narrative account contained original words from the participants, aiming at keeping the interpretative process
transparent to the reader. A supervisor reviewed and audited the themes in order to verify the interpretation of the first researcher.
Appendix B

Detailed Results Section

Preliminary Comparisons

**Weekly vs. Weekend.** Socio-demographic characteristics, medical history and outcome variables for the Weekly and Weekend participants are presented in Table B1. Of the variables we examined, age of menarche was the only variable that showed a statistically significant difference between Weekly and Weekend groups. Since this is not likely to influence treatment effectiveness, no covariate was included in the analyses and all results are presented unadjusted.

**Attendants vs. non-attendants.** Baseline characteristics were compared between the program attendants and those who did not attend. There were no statistically significant differences between them on any baseline characteristics.

**Dropouts vs. program completers.** Another comparison was conducted between dropouts and those who completed the program. Participants with an attendance rate lower than 60% were considered dropouts. There were exceptional cases where two Weekly participants only attended five out of ten sessions but were still treated as program completers because handouts had been sent to them in their weeks of absence. It is assumed that they were able to access the information and completed the sessions themselves. Among 73 participants, nine women from the Weekly groups and three women from the Weekend Groups dropped out from the program, giving a dropout rate of 16.4% (weekly = 17.7% , weekend = 13.6%). Chi-square analysis showed no adherence difference between the Weekly and Weekend groups, $\chi^2(1, N = 73) = .180, p = .671$. Participants in the dropout group, when compared with program completers, had higher proportion of smokers, $\chi^2 (1, N = 71) = 8.95, p = .003$, had lower satisfaction with their social support, $t(69) = 2.29, p = .025$ and consumed more
Table B1

Socio-demographic Characteristics, Medical History and Outcome Variables for the Weekly and Weekend Groups

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Weekly (n = 66)</th>
<th>Weekend (n = 38)</th>
<th>Analysis of overall differences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-demographic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural Background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian</td>
<td>41 (75.9%)</td>
<td>24 (77.4%)</td>
<td>$\chi^2(2, N=85)=2.303, p = .316$</td>
</tr>
<tr>
<td>British</td>
<td>10 (18.5%)</td>
<td>3 (9.7%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>3 (5.6%)</td>
<td>4 (12.9%)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 12 or below</td>
<td>16 (28.6%)</td>
<td>11 (36.7%)</td>
<td>$\chi^2(1, N=86)=.594, p = .441$</td>
</tr>
<tr>
<td>Tertiary</td>
<td>40 (71.4%)</td>
<td>19 (63.3%)</td>
<td></td>
</tr>
<tr>
<td>Occupation&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unskilled</td>
<td>14 (24.1%)</td>
<td>8 (25.8%)</td>
<td>$\chi^2(2, N=89)=.044, p = .978$</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>30 (51.7%)</td>
<td>16 (51.6%)</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>14 (24.1%)</td>
<td>7 (22.6%)</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married or de facto</td>
<td>42 (72.4%)</td>
<td>26 (83.9%)</td>
<td>$\chi^2(3, N=89)=2.363, p = .501$</td>
</tr>
<tr>
<td>Widowed</td>
<td>1 (17.2%)</td>
<td>1 (12.9%)</td>
<td></td>
</tr>
<tr>
<td>Separated or divorced</td>
<td>9 (10.3%)</td>
<td>3 (3.2%)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>6 (12.0%)</td>
<td>1 (0%)</td>
<td></td>
</tr>
<tr>
<td><strong>Mean (SD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>52.42 (4.87)</td>
<td>53.35 (6.36)</td>
<td>$t(88)=-.781, p = .437$</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of children</td>
<td>1.85 (1.13)</td>
<td>2.10 (1.01)</td>
<td>$t(82)=-1.005, p = .318$</td>
</tr>
<tr>
<td>Age of children</td>
<td>24.09 (7.79)</td>
<td>25.77 (9.23)</td>
<td>$t(67)=-.808, p = .422$</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of people to call</td>
<td>3.98 (1.82)</td>
<td>4.06 (1.79)</td>
<td>$t(87)=-.203, p = .840$</td>
</tr>
<tr>
<td>Satisfaction&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.58 (0.50)</td>
<td>1.71 (0.46)</td>
<td>$t(86)=-.443, p = .659$</td>
</tr>
<tr>
<td><strong>Medical History</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body weight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under &amp; Normal weight</td>
<td>22 (42.3%)</td>
<td>13 (56.5%)</td>
<td>$\chi^2(1, N=75)=1.294, p = .255$</td>
</tr>
<tr>
<td>Overweight &amp; Obese</td>
<td>30 (57.7%)</td>
<td>10 (43.5%)</td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hormones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>41 (69.5%)</td>
<td>19 (61.3%)</td>
<td>$\chi^2(1, N=90)=.615, p = .433$</td>
</tr>
<tr>
<td>Yes</td>
<td>18 (30.5%)</td>
<td>12 (38.7%)</td>
<td></td>
</tr>
<tr>
<td>Vitamins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>27 (45.8%)</td>
<td>14 (45.2%)</td>
<td>$\chi^2(1, N=90)=.003, p = .957$</td>
</tr>
<tr>
<td>Yes</td>
<td>8 (13.6%)</td>
<td>1 (3.2%)</td>
<td></td>
</tr>
<tr>
<td>Anti-depressants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>51 (86.4%)</td>
<td>30 (96.8%)</td>
<td>$\chi^2(1, N=90)= 2.411, p = .120$</td>
</tr>
<tr>
<td>Yes</td>
<td>8 (13.6%)</td>
<td>1 (3.2%)</td>
<td></td>
</tr>
<tr>
<td>Smoking Behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-smoker</td>
<td>50 (86.2%)</td>
<td>29 (93.5%)</td>
<td>$\chi^2(1, N=89)=1.092, p = .296$</td>
</tr>
<tr>
<td>Current smoker</td>
<td>8 (13.8%)</td>
<td>2 (6.5%)</td>
<td></td>
</tr>
</tbody>
</table>
Table B1. Continued.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Weekly (n = 66)</th>
<th>Weekend (n = 38)</th>
<th>Analysis of overall differences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical History (cont’)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast cancer</td>
<td>Count (%)</td>
<td>Count (%)</td>
<td>$\chi^2(1, N=90)=.449, p = .503$</td>
</tr>
<tr>
<td>No</td>
<td>57 (96.6%)</td>
<td>29 (93.5%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (3.4%)</td>
<td>2 (6.5%)</td>
<td></td>
</tr>
<tr>
<td>Menopause Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premenopausal</td>
<td>3 (5.3%)</td>
<td>0 (0%)</td>
<td>$\chi^2(3, N=87)=1.738, p = .629$</td>
</tr>
<tr>
<td>Early perimenopausal</td>
<td>11 (19.3%)</td>
<td>7 (23.3%)</td>
<td></td>
</tr>
<tr>
<td>Late perimenopausal</td>
<td>13 (22.8%)</td>
<td>7 (23.3%)</td>
<td></td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>30 (52.6%)</td>
<td>16 (53.3%)</td>
<td></td>
</tr>
<tr>
<td>Hysterectomy/ovary removal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>43 (72.9%)</td>
<td>23 (74.2%)</td>
<td>$\chi^2(1, N=90)=.018, p = .894$</td>
</tr>
<tr>
<td>Yes</td>
<td>16 (27.1%)</td>
<td>8 (25.8%)</td>
<td></td>
</tr>
<tr>
<td>Number of ovaries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4 (6.8%)</td>
<td>3 (9.7%)</td>
<td>$\chi^2(2, N=90)= 5.048, p = .080$</td>
</tr>
<tr>
<td>One</td>
<td>2 (3.4%)</td>
<td>5 (16.1%)</td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>53 (89.8%)</td>
<td>23 (74.2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Mean (SD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>26.08 (4.51)</td>
<td>25.70 (4.39)</td>
<td>$t(73)=.331, p = .741$</td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>5.23 (5.20)</td>
<td>4.69 (6.01)</td>
<td>$t(87)=.443, p = .659$</td>
</tr>
<tr>
<td>Amount of exercise&lt;sup&gt;c&lt;/sup&gt;</td>
<td>166.70 (124.17)</td>
<td>221.13 (235.16)</td>
<td>$t(39.462)=-1.200, p = .237$</td>
</tr>
<tr>
<td>Age of menarche</td>
<td>13.37 (1.87)</td>
<td>12.32 (1.43)</td>
<td>$t(76.209)=2.938, p = .004$</td>
</tr>
<tr>
<td><strong>Outcome measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>6.84 (2.93)</td>
<td>6.00 (3.39)</td>
<td>$t(87)=1.227, p = .223$</td>
</tr>
<tr>
<td>Somatic</td>
<td>6.71 (2.26)</td>
<td>6.65 (2.82)</td>
<td>$t(87)=.112, p = .911$</td>
</tr>
<tr>
<td>Urogenital</td>
<td>4.29 (2.31)</td>
<td>4.48 (2.71)</td>
<td>$t(87)=-.349, p = .728$</td>
</tr>
<tr>
<td>Total</td>
<td>17.84 (5.58)</td>
<td>17.13 (7.52)</td>
<td>$t(87)=-.510, p = .612$</td>
</tr>
<tr>
<td>DASS-21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>9.93 (9.61)</td>
<td>10.39 (8.77)</td>
<td>$t (87)=-.220, p = .827$</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6.59 (5.72)</td>
<td>7.68 (7.83)</td>
<td>$t (87)=-.752, p = .454$</td>
</tr>
<tr>
<td>Stress</td>
<td>13.59 (7.97)</td>
<td>12.45 (9.39)</td>
<td>$t (87)=-.601, p = .550$</td>
</tr>
<tr>
<td>SF-36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>79.83 (19.26)</td>
<td>76.13 (20.56)</td>
<td>$t(87)=.843, p = .402$</td>
</tr>
<tr>
<td>Role-Physical</td>
<td>60.53 (37.48)</td>
<td>62.90 (37.01)</td>
<td>$t(86)=-.285, p = .776$</td>
</tr>
<tr>
<td>Bodily Pain</td>
<td>61.55 (21.08)</td>
<td>62.77 (24.36)</td>
<td>$t(87)=-.247, p = .806$</td>
</tr>
<tr>
<td>General Health</td>
<td>67.95 (19.28)</td>
<td>65.58 (21.20)</td>
<td>$t(87)=.533, p = .595$</td>
</tr>
<tr>
<td>Vitality</td>
<td>45.09 (18.51)</td>
<td>41.61 (23.47)</td>
<td>$t(87)=.767, p = .445$</td>
</tr>
<tr>
<td>Social Functioning</td>
<td>69.61 (23.54)</td>
<td>73.79 (25.28)</td>
<td>$t(87)=-.777, p = .439$</td>
</tr>
<tr>
<td>Role-Emotion</td>
<td>53.45 (42.32)</td>
<td>61.29 (41.36)</td>
<td>$t(87)=-.839, p = .404$</td>
</tr>
<tr>
<td>Mental Health</td>
<td>67.52 (15.63)</td>
<td>65.16 (17.26)</td>
<td>$t(89)=.653, p = .515$</td>
</tr>
<tr>
<td>PCS</td>
<td>47.79 (8.89)</td>
<td>46.96 (9.35)</td>
<td>$t(86)=.410, p = .683$</td>
</tr>
<tr>
<td>MCS</td>
<td>41.32 (10.80)</td>
<td>41.96 (11.81)</td>
<td>$t(86)=-.256, p = .798$</td>
</tr>
</tbody>
</table>

<sup>a</sup> According to Australian and New Zealand Standard Classification of Occupations (2009).

<sup>b</sup> The satisfaction of social support is measured by three-level Likert scale: 0=not satisfied; 1=somewhat satisfied and 2= satisfied.

<sup>c</sup> Equal variance not assumed.
standard drinks per week, \( t(69) = -3.49, p = .001 \). They also scored relatively lower on two of the SF-36 subscales, SF, \( t(69) = 2.21, p = .030 \) and MH, \( t(69) = 2.12, p = .038 \).

**Comparison with population norms.** Baseline study sample data and normative data of all outcome variables were compared using two-sample t-tests. Results are presented in Table B2. This comparison provides readers a brief idea of where the study samples lie within the population regarding severity of symptoms and health status.

**MRS.** The only normative data available for the MRS was from Heinemann and colleagues’ (2004) study which was based on a large multinational (Europe, North-America, Latin-America and Asia) survey. We decided to compare our MRS baseline values with the North-American norms given that their cultural and lifestyle are most similar to that of Australians. The mean scores for our sample are significant higher than that of the population norms.

**DASS-21.** A recent study by Crawford and colleagues (Crawford, et al., 2011) has provided Australian normative data on some self-report mood scales including DASS and DASS-21. The DASS-21 normative data used in this comparison was based on 395 Australians from the general adult population, with an age range of 25-90. Similarly to the MRS, the mean scores of our samples are significant higher than the Australian norms.

**SF-36.** Australian normative data for SF-36 was obtained from the 1995 National Health Survey published by the Australian Bureau of Statistics (1997). We compared our SF-36 sample data with the unstandardised population data, which was based on 9612 Australian adult females. Except for PF, our sample means are significantly lower than the population norms, suggesting a worse general health status. The differences were most salient for BP, VT, SF and MH, with all \( p \)-value < .001.
Table B2

Comparison between Sample and Normative Data of the Outcome Variables at Baseline

<table>
<thead>
<tr>
<th></th>
<th>Study samplea</th>
<th>Population</th>
<th>Analysis of overall differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M(SD)$</td>
<td>$M(SD)$</td>
<td></td>
</tr>
<tr>
<td><strong>MRS</strong>b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>6.55 (3.10)</td>
<td>3.4 (3.5)</td>
<td>$t(879.5) = 9.23, p &lt; .001$</td>
</tr>
<tr>
<td>Somato-vegetative</td>
<td>6.69 (2.46)</td>
<td>3.8 (3.1)</td>
<td>$t(1420.4) = 10.58, p &lt; .001$</td>
</tr>
<tr>
<td>Urogenital</td>
<td>4.69 (2.44)</td>
<td>2.0 (2.3)</td>
<td>$t(1387.6) = 8.88, p &lt; .001$</td>
</tr>
<tr>
<td>Total</td>
<td>17.6 (6.29)</td>
<td>9.1 (7.6)</td>
<td>$t(216.5) = 12.19, p &lt; .001$</td>
</tr>
<tr>
<td><strong>DASS-21c</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>10.09 (9.28)</td>
<td>4.42 (7.20)</td>
<td>$t(102.9) = 5.41, p &lt; .001$</td>
</tr>
<tr>
<td>Anxiety</td>
<td>6.97 (6.51)</td>
<td>2.96 (5.20)</td>
<td>$t(210.4) = 5.43, p &lt; .001$</td>
</tr>
<tr>
<td>Stress</td>
<td>13.19 (8.46)</td>
<td>7.58 (8.20)</td>
<td>$t(131.3) = 5.68, p &lt; .001$</td>
</tr>
<tr>
<td><strong>SF-36d</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td>78.54 (19.49)</td>
<td>81.1 (24.3)</td>
<td>$t(20.9) = -1.23, p = .233$</td>
</tr>
<tr>
<td>RP</td>
<td>61.36 (37.12)</td>
<td>78.8 (36.0)</td>
<td>$t(5.7) = -4.41, p = .007$</td>
</tr>
<tr>
<td>BP</td>
<td>61.98 (22.15)</td>
<td>75.7 (25.4)</td>
<td>$t(16.2) = -5.81, p &lt; .001$</td>
</tr>
<tr>
<td>GH</td>
<td>67.12 (19.88)</td>
<td>72.0 (20.3)</td>
<td>$t(20.0) = -2.30, p = .032$</td>
</tr>
<tr>
<td>VT</td>
<td>43.88 (20.31)</td>
<td>62.5 (20.1)</td>
<td>$t(19.2) = -8.61, p &lt; .001$</td>
</tr>
<tr>
<td>SF</td>
<td>71.07 (24.10)</td>
<td>84.1 (22.9)</td>
<td>$t(13.6) = -5.08, p &lt; .001$</td>
</tr>
<tr>
<td>RE</td>
<td>56.18 (41.92)</td>
<td>81.6 (33.6)</td>
<td>$t(4.5) = -5.70, p = .005$</td>
</tr>
<tr>
<td>MH</td>
<td>66.70 (16.16)</td>
<td>74.6 (17.3)</td>
<td>$t(30.3) = -4.59, p &lt; .001$</td>
</tr>
<tr>
<td>PCS</td>
<td>47.50 (9.01)</td>
<td>49.5 (10.4)</td>
<td>$t(97.7) = -2.08, p = .040$</td>
</tr>
<tr>
<td>MCS</td>
<td>41.45 (11.10)</td>
<td>49.4 (10.3)</td>
<td>$t(64.1) = -6.65, p &lt; .001$</td>
</tr>
</tbody>
</table>

aStudy sample data was obtained from pre-treatment assessment ($N=89$).
bNormative data for MRS was obtained from the study by Heinemann, et al. (2004), MRS-Psychological, $N=1426$; MRS-Somato-vegetative, $N=1440$; MRS-Urogenital, $N=1437$; MRS-Total, $N=1376$.
cNormative data for DASS-21 was obtained from the study by Crawford, Cayley, Lovibond, Wilson and Hartley (2011), $N=395$.
dNormative data for SF-36 was obtained from the 1995 National Health Survey published by the Australian Bureau of Statistics (1997), $N=9612$.

Figure B1 shows the population and sample SF-36 profiles. The population profile was created using the age-standardised data, which was adjusted in the age profile for our sample which does not include the following age groups: 18-24, 25-34 and above 75.
The profile comparison further confirmed that our sample had a lower general quality of health than the Australian population.

![Graph showing health domains comparison](image)

**Figure B1.** Profiles of eight health domains of SF-36 of Australian population norms and our sample at baseline. Normative data were obtained from the 1995 National Health Survey published by the Australian Bureau of Statistics (1997). Baseline mean scores were obtained from the pre-treatment assessment. PF = Physical Functioning; RP = Role-Physical; BP = Bodily Pain; GH = General Health; VT = Vitality; SF = Social Functioning; RE = Role-Emotional; MH = Mental Health.

**Education level.** Our sample was statistically significant difference to the Australian population norms in the distribution of education attainment level among middle-aged women, with over-representation in the Postgraduate category and under-representation in the Under Year 12 category (Australian Bureau of Statistics, 2010). Further analysis revealed that education level was not significantly associated with treatment outcomes, therefore, there was no need to include education level as covariate in the result analysis.
Primary Outcomes

In total, 83.6% \((n = 61)\) of the participants completed the MMM program. The post-treatment, 3-month and 6-month follow up surveys were sent to all program completers and the return rates were 73.8%, 75.4% and 86.9%, respectively.

**Waitlist vs. pre-treatment.** There was no significant change in any of the outcome measures during the waitlist control time period (all \(p > .05\)). Means and standard deviations for all the outcome measures at waitlist and pre-treatment are shown in Table B3.

**Weekly vs. Weekend.** From the LMM analysis, there was no significant group main effect for any variables \((p > .05)\) and all group × time interactions were also not significant \((p > .05)\). Figure B2 shows the fitted mean scores from Weekly and Weekend groups at five assessment time points. Since there were neither group main effects nor interaction effects, the following analyses results are based on the combined weekly and weekend groups, focusing only on the time based effect.

**Primary Outcomes on Intervention Effects**

Means and standard deviations at five assessment time points, as well as mean differences and effect sizes at post-treatment and 6-month follow-up of all the outcome variables are presented at Table B3. The major groups of outcomes in the table are now discussed in detail.

**Intervention effects on menopausal symptoms.** At post-treatment, 58.1% of the participants achieved a decrease of at least one clinical level of severity of overall menopausal symptoms, i.e. improved from moderate to mild clinical range. LMM analysis indicated significant improvements in menopause related symptoms after intervention, as measured by the MRS. There were significant overall time effects for psychological, \(F(4, 174.92) = 11.85, p < .001\), somato-vegetative, \(F(4, 181.78) = 8.10,\)
Table B3

**Overall Means, Standard Deviation and Effect Sizes for Outcome Measures**

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>WL (n=28)</th>
<th>Pre (n=89)</th>
<th>Post (n=45)</th>
<th>3-m (n=46)</th>
<th>6-m (n=53)</th>
<th>Mean difference (95% CI)</th>
<th>p-value</th>
<th>Cohen’s $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MRS</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>6.29 (3.30)</td>
<td>6.55 (3.10)</td>
<td>4.05 (3.19)</td>
<td>4.65 (2.90)</td>
<td>4.42 (2.56)</td>
<td>2.59 (1.70 to 3.48), &lt;.001</td>
<td>.92 (1.11 to 2.74), &lt;.001</td>
<td>0.86</td>
</tr>
<tr>
<td>Somato-vegetative</td>
<td>6.68 (2.61)</td>
<td>6.69 (2.46)</td>
<td>4.89 (2.64)</td>
<td>5.65 (3.01)</td>
<td>5.32 (2.21)</td>
<td>1.86 (1.08 to 2.63), &lt;.001</td>
<td>1.37 (0.66 to 2.07), &lt;.001</td>
<td>0.76</td>
</tr>
<tr>
<td>Urogenital</td>
<td>4.57 (2.13)</td>
<td>4.36 (2.44)</td>
<td>2.91 (2.56)</td>
<td>3.39 (2.74)</td>
<td>3.11 (2.13)</td>
<td>1.64 (0.95 to 2.32), &lt;.001</td>
<td>1.20 (0.57 to 1.82), &lt;.001</td>
<td>0.66</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17.54 (6.49)</td>
<td>17.60 (6.29)</td>
<td>11.84 (7.10)</td>
<td>13.70 (7.23)</td>
<td>12.85 (5.43)</td>
<td>6.09 (4.27 to 7.97), &lt;.001</td>
<td>4.48 (2.77 to 6.20), &lt;.001</td>
<td>0.93</td>
</tr>
<tr>
<td><strong>DASS-21</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>10.00 (9.37)</td>
<td>10.09 (9.29)</td>
<td>6.09 (7.28)</td>
<td>8.30 (8.02)</td>
<td>6.75 (6.80)</td>
<td>0.47 (0.19 to 0.75), &lt;.001</td>
<td>0.37 (0.15 to 0.42), &lt;.005</td>
<td>0.51</td>
</tr>
<tr>
<td>Anxiety</td>
<td>5.93 (6.61)</td>
<td>6.97 (6.51)</td>
<td>5.36 (4.56)</td>
<td>5.36 (4.92)</td>
<td>5.25 (4.98)</td>
<td>0.09 (-0.18 to 0.36), &lt;.513</td>
<td>0.27 (0.20 to 0.51), &lt;.031</td>
<td>0.19</td>
</tr>
<tr>
<td>Stress</td>
<td>11.79 (7.99)</td>
<td>13.19 (8.46)</td>
<td>9.91 (8.82)</td>
<td>11.26 (9.29)</td>
<td>9.89 (6.99)</td>
<td>0.44 (0.20 to 0.67), &lt;.001</td>
<td>0.20 (-0.16 to 0.41), &lt;.070</td>
<td>0.50</td>
</tr>
<tr>
<td><strong>SF-36</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td>75.36 (23.17)</td>
<td>78.54 (19.49)</td>
<td>84.53 (13.79)</td>
<td>82.39 (16.15)</td>
<td>84.91 (12.50)</td>
<td>7.04 (2.23 to 11.86), &lt;.004</td>
<td>7.21 (2.83 to 11.59), &lt;.001</td>
<td>0.42</td>
</tr>
<tr>
<td>RP</td>
<td>57.14 (39.59)</td>
<td>61.36 (37.12)</td>
<td>69.32 (34.04)</td>
<td>72.83 (35.29)</td>
<td>72.64 (37.42)</td>
<td>5.94 (-7.45 to 19.33), &lt;.382</td>
<td>9.40 (-2.85 to 21.64), &lt;.132</td>
<td>0.17</td>
</tr>
<tr>
<td>BP</td>
<td>60.21 (24.78)</td>
<td>61.98 (22.15)</td>
<td>63.52 (22.03)</td>
<td>64.22 (17.92)</td>
<td>65.23 (22.93)</td>
<td>2.23 (-3.55 to 8.02), &lt;.447</td>
<td>4.94 (-3.5 to 10.22), &lt;.067</td>
<td>0.10</td>
</tr>
<tr>
<td>GH</td>
<td>63.71 (21.07)</td>
<td>67.12 (19.88)</td>
<td>72.30 (16.75)</td>
<td>72.70 (15.65)</td>
<td>70.49 (19.12)</td>
<td>2.45 (-1.70 to 6.60), &lt;.245</td>
<td>0.95 (-2.84 to 4.74), &lt;.622</td>
<td>0.15</td>
</tr>
<tr>
<td>VT</td>
<td>40.71 (18.09)</td>
<td>43.88 (20.31)</td>
<td>51.02 (18.32)</td>
<td>49.67 (21.51)</td>
<td>52.98 (19.12)</td>
<td>5.30 (0.32 to 10.28), &lt;.037</td>
<td>7.40 (2.85 to 11.95), &lt;.002</td>
<td>0.27</td>
</tr>
<tr>
<td>SF</td>
<td>73.21 (25.17)</td>
<td>71.07 (24.10)</td>
<td>78.69 (22.81)</td>
<td>78.26 (21.32)</td>
<td>81.13 (19.86)</td>
<td>6.29 (-6.48 to 13.23), &lt;.075</td>
<td>7.12 (0.79 to 13.45), &lt;.028</td>
<td>0.27</td>
</tr>
<tr>
<td>RE</td>
<td>61.90 (41.29)</td>
<td>56.18 (41.92)</td>
<td>68.94 (39.64)</td>
<td>65.22 (44.42)</td>
<td>66.67 (41.35)</td>
<td>13.09 (0.70 to 25.47), &lt;.038</td>
<td>7.09 (-4.21 to 18.40), &lt;.217</td>
<td>0.32</td>
</tr>
<tr>
<td>MH</td>
<td>67.57 (17.12)</td>
<td>66.70 (16.16)</td>
<td>74.64 (13.05)</td>
<td>71.83 (16.48)</td>
<td>75.09 (14.22)</td>
<td>6.97 (2.95 to 10.98), &lt;.001</td>
<td>7.02 (3.36 to 10.69), &lt;.001</td>
<td>0.49</td>
</tr>
<tr>
<td>PCS</td>
<td>45.22 (12.29)</td>
<td>47.50 (9.01)</td>
<td>48.14 (8.20)</td>
<td>48.85 (8.60)</td>
<td>48.65 (8.87)</td>
<td>0.96 (-1.66 to 3.58), &lt;.470</td>
<td>1.78 (-0.60 to 4.17), &lt;.141</td>
<td>0.11</td>
</tr>
<tr>
<td>MCS</td>
<td>42.91 (12.12)</td>
<td>41.54 (11.10)</td>
<td>46.42 (10.49)</td>
<td>45.02 (12.38)</td>
<td>46.42 (10.23)</td>
<td>3.83 (1.00 to 6.67), &lt;.008</td>
<td>3.28 (0.70 to 5.86), &lt;.013</td>
<td>0.37</td>
</tr>
</tbody>
</table>

*Note.* MRS = Menopause Rating Scale; DASS-21 = Depression Anxiety Stress Scale-21; SF-36 = Short Form Medical Outcomes Study questionnaire; PF = Physical Functioning; RP = Role-Physical; BP = Bodily Pain; GH = General Health; VT = Vitality; SF = Social Functioning; RE = Role-Emotional; MH = Mental Health; PCS = Physical Component Summary; MCS = Mental Component Summary; WL = waitlist control time period; Pre = pre-treatment; Post = post-treatment; 3-m = 3-month follow-up; 6-m = 6-month follow-up.
Table B3. Continued.

a For MRS and DASS, mean difference is calculated by (Pre - Post) or (Pre – 6-month); for SF-36, mean difference is calculated by (Post – Pre) or (6-month - Pre). For MRS and SF-36, fitted model means are used to determine the difference.

b For DASS, the means are reported on the original scale, but the Linear Mixed Model analysis was conducted with log transformed scores, i.e. log (score + 1). Hence, the mean differences reported in this table are based on log scores.

c Cohen’s $d$ effect size is calculated by difference in model means divided by $S_{within}$

$$S_{within} = \frac{SD of mean difference}{\sqrt{2(1-r)}}$$, where $SD of mean difference$ and $r$ are obtained from paired t-test analysis for subjects with both pre- and post- surveys. For DASS which has log transformation variables, this was conducted on a log scale.
Figure B2. Fitted mean scores of the MRS, the DASS-21 and the SF-36 for Weekly and Weekend groups. WL = waitlist control time period; Pre = pre-treatment; Post = post-treatment; 3-m = 3-month follow-up; 6-m = 6-month follow-up.

$p < .001$ and urogenital, $F(4, 176.10) = 9.37, p < .001$, subscale scores across five assessment time points. Post hoc comparisons revealed significant mean score reductions from pre- to post-treatment and from pre-treatment to 6-month follow-up for all three subscales, with effect sizes reflecting medium to large changes. To assess
changes post-treatment, the results at post-treatment were compared to 6-month follow-up. No significant changes were found, indicating the improvements were maintained. However, the relatively smaller effect sizes at 6-month follow-up suggest a slight lapse over time.

**Intervention effects on psychological well-being.** At post-treatment, 37.2%, 25.6% and 27.9% of participants experienced an improvement of at least one clinical level of DASS-depression, DASS-anxiety and DASS-stress subscales, respectively. LMM analysis demonstrated significant overall time effects for the depression subscale, \( F(4, 177.04) = 4.30, p = .002 \), anxiety subscale, \( F(4, 175.79) = 1.46, p = .215 \) and stress subscale, \( F(4, 172.30) = 4.19, p = .003 \). Post hoc comparisons showed a significant reduction in mean scores from pre- to post-treatment and from pre-treatment to 6-month follow-up for DASS-depression. Comparisons between post-treatment and 6-month follow-up revealed no significant time effect, suggesting the gain was maintained. For the mean DASS-stress scores, there was a significant reduction from pre- to post-treatment, but not from pre-treatment to 6-month follow-up, suggesting the treatment gain at post-treatment was not maintained. There was no significant time effect identified overall and at post hoc comparison with Bonferroni adjustment for DASS-anxiety. However, there was a trend towards an improvement of anxiety symptoms from post-treatment to 6-month follow-up.

**Intervention effects on general health.** LMM analysis revealed significant improvements in some domains of general health, as measured by the SF-36. There were significant overall time effects for PF, \( F(4, 167.10) = 4.48, p = .002 \), VT, \( F(4, 172.34) = 3.95, p = .004 \), and MH, \( F(4, 168.85) = 5.51, p < .001 \), subscales across all assessment time points. Post hoc comparisons showed a significant increase of mean scores for PF and MH subscales from pre-treatment to post-treatment and to 6-month
follow-up, indicating an improvement in these areas following the intervention. The related effect sizes indicated the changes were modest. The gains in these domains were maintained, indicated by the nonsignificant time effect from post-treatment to 6-month follow-up. For VT, the increase in mean scores did not reach statistical significance until 6-month follow-up. There were no significant time effects observed for RP, BP, GH, SF and RE subscales at any of the assessment time point according to post hoc comparisons. The two summary measures, PCS and MCS, give an indication of the change in physical and mental health, respectively. For PCS, there were no significant time effects over five assessment time points. MCS demonstrated a small overall time effect, $F(4, 170.90) = 2.50, p = .044$, with paired comparisons revealing a significant mean difference from pre-to post-treatment and to 6-month follow-up. There was no significant mean difference from post-treatment to 6-month follow-up, suggesting the gain was maintained.

**Treatment Compliance**

Treatment compliance was assessed by attendance rate and implementation of strategies.

**Attendance rate.** Due to the dichotomous nature of the attendance data of the Weekend groups (i.e. either 50% or 100%), all attendance rates were re-coded as: (1) 50% or below, or (2) above 50%. The percentage of participants who attended above 50% of the MMM program for Weekly and Weekend groups are 78.4% and 86.4%, respectively. Chi-square analysis showed no distribution difference between the two groups, $\chi^2(1, N=73) = .624, p = .430$.

**Use of strategies.** At post-treatment and follow-up assessment, all participants who returned surveys reported that they had implemented at least 3 strategies to some degree. In order to facilitate the analysis of treatment compliance, the 16 strategies
were grouped using exploratory factor analysis. There are a number of criteria that can be used to determine the number of factors. The first one is the Kaiser’s criterion which states that the number of factors is equal to the number of the eigenvalues of the correlation matrix that are greater than one (DeCoster, 1998). Based on the Kaiser’s criterion, four factors were evidenced from the data. Another criterion is the scree test which plots the eigenvalues of the correlation matrix against the factor number in descending order, and then the number of factors is equal to the number of eigenvalues before the curve drops abruptly. The scree plot indicated two factors could be extracted from the data. They accounted for 45.8% of the variance. The scree test was used and the two factors were named Cognitive-behavioural Strategies and Lifestyle Strategies based on the nature of the items (see Table B4 for the factors and loadings of 16 strategies). Factor scores for each participant were calculated by summing the items within each factor and then dividing by the number of items to give an average score that was on the same range as the original items, i.e. 0 (not at all) to 10 (every day). Mean values for each factor at post-treatment, 3-month follow-up and 6-month follow-up were calculated.

LMM analysis was used to examine the use of strategies over time by the Weekly and Weekend groups. Results revealed no significant difference between groups in their use of Cognitive-behavioural Strategies, $F(1, 51.42) = .22, p = .641$. There was no time main effect, $F(2, 75.22) = 1.71, p = .188$, indicating the use of strategies did not change over the 6-month period after intervention. There was no significant group x time interaction effect, $F(2, 75.22) = 1.45, p = .242$, suggesting the use of strategies by the two groups was similar over time. The overall mean values of the use of Cognitive-behavioural Strategies at post-treatment, 3-month follow-up and 6-month follow-up were 5.03, 4.95 and 4.57, respectively, suggesting the participants on
average used the strategies on some days.

Table B4

*Use of strategies factor structure and loadings*!

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Cognitive-behavioural</th>
<th>Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being assertive</td>
<td>.825</td>
<td></td>
</tr>
<tr>
<td>Managing conflict</td>
<td>.781</td>
<td></td>
</tr>
<tr>
<td>Using social support networks</td>
<td>.780</td>
<td></td>
</tr>
<tr>
<td>Goal setting</td>
<td>.726</td>
<td></td>
</tr>
<tr>
<td>Improved time management</td>
<td>.686</td>
<td>.366</td>
</tr>
<tr>
<td>Using memory techniques</td>
<td>.664</td>
<td></td>
</tr>
<tr>
<td>Reducing procrastination</td>
<td>.659</td>
<td></td>
</tr>
<tr>
<td>Identifying and changing unhelpful thinking</td>
<td>.481</td>
<td></td>
</tr>
<tr>
<td>Sleep routine</td>
<td>.382</td>
<td></td>
</tr>
<tr>
<td>Breathing exercise</td>
<td></td>
<td>.772</td>
</tr>
<tr>
<td>Relaxation exercise</td>
<td></td>
<td>.671</td>
</tr>
<tr>
<td>Increased water intake</td>
<td></td>
<td>.616</td>
</tr>
<tr>
<td>Mindfulness exercise</td>
<td></td>
<td>.607</td>
</tr>
<tr>
<td>Increased exercise</td>
<td></td>
<td>.507</td>
</tr>
<tr>
<td>Healthy Diet</td>
<td></td>
<td>.334</td>
</tr>
<tr>
<td>Increased soy intake</td>
<td></td>
<td>.423</td>
</tr>
</tbody>
</table>

*a Loadings less than 0.3 were suppressed.

With Lifestyle Strategies, there was no significant group main effect, $F(1, 55.39) = 1.52, p = .223$. A significant time effect was found, $F(2, 78.14) = 6.33, p = .003$, suggesting there was a change in the use of Lifestyle Strategies over the 6 months period after treatment. There was also a significant time × group interaction effect, $F(2, 78.14) = 4.02, p = .022$. In Figure B3 the means for both groups are plotted. At post-treatment, similar mean values (around 6) were achieved for both groups. It can be seen that there was a decreased use of strategies at 3-month follow-up for the Weekly groups but not the Weekend groups (Weekly = 4.64; Weekend = 6.04). However, the Weekend
groups reduced the use of the strategies at 6-month follow-up and both groups obtained similar mean values (around 5) at 6-month follow-up.

**Figure B3.** Fitted model means for Lifestyle Strategies by Weekly and Weekend groups. Post = post-treatment; 3-month = 3-month follow-up; 6-month = 6-month follow-up.

*Symptom diary.* There were 92.2% \((n = 47)\) of Weekly participants and 63.6% \((n = 14)\) of Weekend participants who completed at least one symptom diary. The data was reduced by summing the daily symptom scores for each week and then averaging to produce weekly symptom scores. Subsequently, weekly subscale scores for psychological, somato-vegetative and urogenital symptoms were calculated by adding the scores for each item of the respective subscales. Note that some Weekly participants provided data for the symptom diary up to 13 weeks because most Weekly groups had 1-3 week(s) breaks throughout the program due to school or public holidays.
Participants were asked to continue to complete the symptom diary even though they did not have to attend treatment that particular week.

LMM analysis was used to examine change in menopausal symptoms over the treatment period for Weekly and Weekend groups. There was no group main effect or group × time interaction effect for any of the subscales, but there were significant time main effects for all subscales: psychological, $F(12, 475.09) = 2.66, p = .002$; somato-vegetative, $F(12, 477.46) = 4.84, p < .001$; and urogenital, $F(12, 469.60) = 2.47, p = .004$, indicating improvement of menopausal symptoms over the course of treatment. Figure B4 shows the total scores of the symptom diary of Weekly and Weekend groups.

![Figure B4](image)

*Figure B4. Symptom diary for Weekly and Weekend groups.*
Analysis of covariance was used to determine if the diary monitoring effect was associated with improvement in symptom score by using post-treatment symptom score as the dependent variable and controlling for differences between subjects with pre-treatment symptom score as a covariate. Adding the percentage of diary completion to the model as a covariate suggested that it was not significantly related to the symptom diary total score at the completion of the treatment, $F(1, 59) = 1.80, p = .185$. 
Appendix C

Qualitative Results

Five superordinate themes emerged from analysis of the interviews, with a number of subordinate themes for each one. The superordinate themes and their subordinate themes are listed in Table C1.

Table C1

The Superordinate and Subordinate Themes for the MMM Program Interviews

<table>
<thead>
<tr>
<th>Theme</th>
<th>Superordinate Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pre MMM: A Life with Chaos</td>
<td>• Overwhelmed&lt;br&gt;• Loss of control&lt;br&gt;• Loss of old identity&lt;br&gt;• Affect relationship</td>
</tr>
<tr>
<td>2. MMM Answered My Questions</td>
<td>• What’s happening?&lt;br&gt;• Not satisfied with the help that I have got&lt;br&gt;• Answer to “what’s happening”</td>
</tr>
<tr>
<td>3. MMM Made Me a Stronger Woman</td>
<td>• More self-efficacious and in control&lt;br&gt;• Improved life in general&lt;br&gt;• Positive sense of self</td>
</tr>
<tr>
<td>4. The Power of Group</td>
<td>• Meeting others in the same boat&lt;br&gt;• Being each others’ coach&lt;br&gt;• Create hope by helping each other&lt;br&gt;• Now I realise that I am lucky&lt;br&gt;• I hope we can meet again</td>
</tr>
<tr>
<td>5. Need for Options of Delivery Format</td>
<td>• Weekend MMM: not as good&lt;br&gt;• But, thanks for the options</td>
</tr>
</tbody>
</table>
**Pre MMM: A Life with Chaos**

Participants were asked to describe their menopausal experiences prior to MMM. Despite the differences in the women’s symptoms, feelings loss of control and being overwhelmed were two common themes that emerged from the interviews.

**Overwhelmed.** Several participants spoke about feeling overwhelmed by their menopausal symptoms.

Exhaustion. Complete exhaustion. I can go to bed for days. I’ve just got no energy to do anything. It’s just like…I can’t stay awake. I literally couldn’t stay awake…I gave up work at age 55 basically because of menopause - I couldn’t handle it. I just couldn’t handle going to work anymore. (Connie)

I guess that the sleeplessness and the loss of energy were something that I found really troubling because I’m someone who is reasonably energetic, likes to be doing things on top of things and I…it was frightening that there was a decrease of my ability to do that and I didn’t like it at all. And I think lot of these things are linked. I’m too tired to be interested in sex with my husband, and probably linking with…you know, feeling more anxious about things because things were started to pile up and get on top of me… and from someone who has never had a sleeping problem ever, I mean I found that really disturbing to wake up in the middle of the night and not able to get back to sleep. (Betty)
Twenty seconds before a flush came, I would just doom and gloom and just - a most horrible feeling - like you know you can get a bad thought sometimes, it’s a bad thought that come into my head. And that was so annoying… it’s just so strange. I just feel really bad, really depressed, nearly want to cry and even harming myself, that was very occasionally.

(Helen)

What the women considered as the most disturbing menopausal symptom was very individual. A lot of interviewees spoke about the exhaustion that they had experienced, which appeared to affect their level of functioning significantly. For one of the interviewees, Helen, the depressive symptoms that accompanied the hot flushes seemed to be so intense that they were nearly intolerable.

**Loss of control.** While several individuals spoke about their lack of control in relation to their emotions, others reported losing a sense of control with the presence of multiple menopausal symptoms.

Anger was part of me. I couldn’t control. I just got angry and cried about everything. (Belinda)

I just felt irritable a lot of the time and my reactions to situations seemed to be more severe than the situation really warranted. I was having flushes, and I couldn’t concentrate, and I just felt like I had lost control over the aspects of my life. I noticed that my interest in sex declined. I just felt generally awful a lot of the time. (Amy)
There is a sense of frustration for women because they could not explain why they felt angry. They appeared confused, with a sense of helplessness which perhaps arose from the uncertainty of the symptoms. The presence of several symptoms concurrently in that period of time had also intensified the feeling of loss of control. The words that the participants chose to describe their anger suggested the intensity of their emotions. For Belinda, anger had become “part of her”. This seems to imply that the emotion was so intense and frequent that it had become entrenched and out of control.

**Loss of old identity.** Participants spoke of their “old selves” to highlight the significant changes that were brought about by menopause. They felt somehow different from their pre-menopause self.

Not the normal me. I was kind of closed off a lot because I started to not know myself. I reached that stage where I didn’t know myself anymore.

My mood swings, my emotion – I couldn’t control all of that. (Belinda)

I’m getting old and I haven’t got as many as much female hormones anymore. And that sort of makes you feel different. Like all shrivelled up, not working. (Helen)

Women felt they were becoming different people as a result of the menopausal symptoms. Belinda’s extract demonstrates that the change was so drastic that she “did not know herself anymore”. Several participants had spoken about their loss of identity in relation to the loss of youth and femininity. They generally adopted a pessimistic view towards life prior to the MMM program.
**Affect relationship.** Menopausal symptoms not only affected the women but also the people around them. Being unable to control their emotions at times, women direct their anger at their family which they often regret.

Nothing seems to be quite to my liking or I would find faults in lots of thing that people would do. I say things that I really didn’t mean and I would regret, particular with my family. I was just reacting rather than responding. I was just flying off the handle all the time. (Amy)

I found myself angry all the time, so as result I didn’t like being that way, but I couldn’t control it, so I found myself withdrawing from my children because I didn’t want them to see me that way. I didn’t want the erratic mood as well, where they would come to me, and it wasn’t like “yes, darling” like I normally do. It was like “what!” (Belinda)

In addition to uncontrollable anger, decreased sexual desire was another symptom that affected relationships with their partner.

He (husband) thought I was having an affair. He thought I had another man in my life and there isn’t, and that really shocked me that he just thought “Amy’s not interested in me, so there must be somebody else. But that wasn’t the case at all and that really shocked me how he felt. (Amy)

Some women became less active as a result of the tiredness associated with sleep disturbance. Thus, their social relationships suffered.
I was in a group of girls that used to work here in the university and I have a group of people that I socialized with. We have got together invariably. I would ring up and say, “I’m not coming. I’m just too tired” or “I just feel terrible.” So a lot of those relationships went by the way side because I just didn’t have the energy for them, basically. I only had the energy to sort of keep myself alive. (Connie)

These examples demonstrate how menopausal symptoms indirectly affected the women’s partners, children and friends. Instead of talking to their loved ones, several participants adopted an avoidance strategy, which mostly involved isolating themselves from people around them. Perhaps, the women themselves were so confused that they did not know how to talk to others about what was happening. The lack of communication seemed to create further relationship problems.

**MMM Answered My Questions**

Participants revealed their frustrating journey of searching for information and treatment about menopause. Limited help from their doctors and the taboo of menopause create a difficult situation for the women. The MMM program has filled the gap by providing the women with a wealth of information about menopause.

**What’s happening?** All participants voiced that they wanted to know more about menopause, particularly the cause and duration of their symptoms. The following two extracts from Lara and Betty show the confusion that the women felt towards the menopausal symptoms.
Things can happen and you don’t understand why they’re happening. And you don’t realize they can be also part of menopause. So I was probably a little more confused about things that were happening to my body. That was the most difficult thing, not actually understanding what was really happening and how different symptoms can be connected. (Lara)

I think probably sort of confusion, trying to sort through what was happening, what was happening physically, what was happening psychologically, was something I was probably feeling. (Betty)

The desire to know more about menopause was not only limited to those who have severe symptoms. Participants with relatively mild symptoms like Mary also wanted to have more understanding about what was happening to them and what would happen to them in the future. The pursuit of knowledge became the main reason for some participants joining the MMM program.

I want to know what’s happening and I want to know the measure of what could happen and how to deal with it. (Mary)

Apart from the cause of the symptoms, the duration of the menopausal symptoms is another question that the women always had in mind. The unknown timeframe of the symptoms caused a lot of psychological distress.

Terrible. I found it (severe bleeding) very difficult to cope with. Not only on the physical side of it because I was bleeding two weeks out of four. I just felt
really down. You felt as though you didn’t get a break really. And it was unpredictable, so this makes you anxious because you always have to be prepared. I feel like it was never going to end. (Lara)

Some days, yes, very very distressing, always depressing… and it (hot flushes) just starts to get you down and you just think this is never going to stop. I really do get upset by it. (Helen)

This can’t be it (menopause) because I’m gonna to do this for 10 years or so. You know, this is the end of my life kind of thing. I just could not imagine myself going through that all the time, you know, for months and years of it. I don’t know when… how long it lasts. (Belinda)

For Lara, her irregular bleeding cost both her physical and mental health. Because of the excessive bleeding, she suffered from accompanying health issues such as iron deficiency. Psychologically, she was on guard all the time because she had “to be prepared” for the unpredictable bleeding which could happen any time. She perceived the suffering as chronic, which was exhibited in her extract “you didn’t get a break” and “it was never going to end”. The unpredictability and unknown timeframe for the occurrence of the symptoms has contributed to the sense of catastrophe that a lot of the women had prior to the group. Without knowledge and understanding, women began to imagine their future as endless suffering from menopause.

Not satisfied with the help that I have got. Half of our participants went to their General Practitioners (GPs) for medical consultation when they first noticed their physical symptoms, which is in accordance with the literature that the majority
75%) of the women seek information and advice through their GPs regarding menopause (Hope, Wagner, & Rees, 1998). Interestingly, they were all offered the same treatment option – Hormone Replacement Therapy (HRT). All the women who mentioned HRT in the interview chose not to take or refused to continue with HRT for various reasons, including finding unsatisfactory treatment benefit of HRT, worrying about the side-effects and having existing health issues that could possibly be complicated by HRT.

He (My GP) really really wanted to put me on hormone replacement therapy but for some reason and I don’t know why, I just didn’t want to take it. I suppose I just don’t like taking hormones and things like that. I resisted that. (Helen)

He (My GP) offered me hormones and I didn’t want that. I’ve already made that decision. (Lara)

I just went straight to my doctor and said to her that “I’m either stressed, depressed or menopausal. What are my options?” and she just put me on hormone replacement therapy. I just thought that would take everything away and after awhile I thought you know I don’t really feel much better, and I thought if this is supposed to making me feel better, I don’t feel better enough to keep taking it. And I stopped then. When I stopped, everything just magnified after that. The flushing, I just felt dreadful. (Amy)
Besides the absence of treatment choices, some participants felt that their doctors did not take care of the psychological impact of menopause. The women did not think their GPs, predominantly male, show enough understanding of what they were going through emotionally.

I actually found that my GP was no good at all coz’ he’s a male, firstly. I found him actually quite dismissive… he was not able to deal with it, but it was more…I think the emotional side of it. The emotions of not actually…really getting it all and understanding everything that was going on. I found very little help in that area from him. (Lara)

All the above examples demonstrate that the GPs generally adopted a biomedical model, where they view menopause as a group of physical symptoms that could be easily treated by hormone replacement therapy. However, menopause means more than just hot flushes to the women. They were looking for more than a quick fix from their doctor. The women were generally dissatisfied with the limited help that their GPS have offered.

While some participants seek help from their doctors, some participants turned to her mother or female friends for advices. In contrast to the common perception that menopausal experiences are shared among female friends and relatives, the interviewees indicated that they rarely talked about this subject with other people.

My mother sort of didn’t really keep us girls informed about how she was. She kept things very quietly. She might sort of open the back door, and she quietly says I’m a bit hot, you know, but there was no discussion about
how things were. So I was a bit concerned how it was going to be and imagined things a lot worse. (Mary)

I don’t think you hear very much about it out there, you know, apart from my friends. Most of my friends are younger than me. (Amanda)

The women found it difficult to find information about menopause from other people. One possible explanation is that menopause is considered as an intimate, personal issue that is not commonly shared among women, not even between mother and daughter. It is also possible that menopausal women are still carrying negative stereotype as someone who is old, asexual, depressed and irritable, thus discouraging women from revealing their menopausal experience. The unspoken topic has created a sense of the unknown and uncertainty, a theme that was constantly referred to by the women in the interviews.

A number of interviewees spoke about trying to search for information by themselves, however, they did not seem to be happy about the quality and quantity of information that they have found.

I did try to find some information on my own and it wasn’t satisfactory. And you feel really quite alone. You really feel quite isolated because you can’t…you can’t get the information that you need to satisfy your interest in it. And I felt it’s really quite tough that way. (Lara)
You log onto the internet and you try to read up information and it’s all repetitive. And there’s so much information - you close it down, I’ll take a tablet. (Belinda)

Most of interviewees spoke about the difficulty of accessing information to derive a clear picture of what was happening to their bodies, as well as be informed of the best treatment options. As a result, they remained or even became more anxious and confused.

**Answer to “what’s happening to me”.** After experiencing difficulty in search for menopause information by themselves, the women were much appreciate the information given in the MMM program. The knowledge of menopause helped women to make sense of the changes in their body. The ability to attribute the symptoms that they were experiencing to “menopause” has created a sense of relief in them.

I am much more aware of things that are going on. And I really think having all of the information that I got through the course made me understand what was happening to me much more. Because I have the information, I’m informed. And because I’m informed I can rationalize things so much better. You know I can rationalize this may be why I am behaving this way or I’m aching, you know, joint aches and pains, perhaps the menopause you know. There’re things that make I feel a lot more settled in myself. I feel so much happier because I now actually understand all parts of the aging process. (Lara)
Some participants were surprised how little they knew about menopause prior to the MMM program. The example given by Karen demonstrates how her increased awareness of symptoms prompted her seeking treatment, which subsequently resulted in alleviation of her sexual problems. It appears that knowledge of menopause has a positive impact on participants’ psychological and behavioural responses toward menopause.

Being here at the group alerted me to become aware of something that I wasn’t necessarily thinking about what menopause is. (Mary)

… the dry vagina and Rosemary has mentioned it here. I just thought it was me. I did not put that down to menopause at all. So having sex was uncomfortable. I just told her (GP) about that. And then she said “oh, we can fix that. That’s not a problem!” So yeah, I thought, perhaps if Rosemary hadn’t mentioned it, perhaps I would not have mentioned it to the doctor. (Karen)

**MMM Made Me a Stronger Woman**

**More self-efficacious and feeling in control.** In their explanation of how the MMM program had impacted their life with menopause, “I can do something about it” and “more in control” are two recurrent themes that were apparent in the interviews. The participants generally had no idea what to do about their uncontrollable menopausal symptoms prior to the MMM program. After attending the group, they believed that they were capable of using strategies taught in the MMM program to manage their menopausal symptoms, resulting in a greater sense of control.
It (knowledge) gives me the ability to say, “ok, that’s what happening now, I know I can control it by this.” (Carol)

Beforehand I just thought it was something that you just have to suffer through and eventually it would pass. And now I realize that things that I can do to make it a little bit easier. (Amy)

You feel you are in control. You know what’s going to happen. You are aware yourself, you’re aware of it and you are able to sit there and smile and whereas before there is panic…just terrible. (Belinda)

In these extracts, Amy and Belinda compared themselves to the “old” self to highlight their perceived improvement in self-efficacy, an important concept in self-management. Self-efficacy generally refers to one’s confidence in performing certain actions to obtain the desired outcome (Bandura, 1994). When applied to our participants, improved self-efficacy means our participants have transformed from the role of the “victim of menopause” to someone who is capable of actively managing their symptoms.

Many participants also demonstrated their increased self-efficacy through their acceptance of personal responsibility for managing menopausal symptoms, or taking care of their own health.

If your symptoms are not as bad, and you’re not as desperate, you don’t need to make the change. But if it’s that bad, you will. And I was prepared to. (Belinda)
I think it made me realize that you have to work at your life, if you’re going to get most out of it, instead of just letting it sort of tumble along. There are things you need to work at. (Amy)

These extracts suggest a sense of empowerment in the participants. As Belinda said, the women seemed “prepared”, motivated and determined to put in effort in creating a healthy life. Personal responsibility was deemed essential in menopausal management because participants themselves were in charge of their own health outside therapy. Whether they made changes or not was their decision based on their internal motivation.

The MMM program seemed to increase participants’ self-efficacy in two ways. Most of the participants spoke about increased awareness of strategies that they had already known or had been practising.

I’ve done it before, but it’s been reinforced. And certainly it made me exercise more, even if just a walk every day. I was happy. I sort of was happy to do that. I thought that actually helps me sleep better. Just gave me a space to think, so that was something that I was doing, but it compounded that I need to do that. (Mary)

I just think most of the things that I learned in the group were things that I sort of knew beforehand, but maybe not in quite as much depth and the group was good in showing more depth in the way of doing things and why you should do things and I suppose it just reinforced to me why I should do particular things and not others. (Connie)
A lot things probably just reinforced things I already did. I mean I already exercises I already eat well. All of those sort of things I think that I already do. I mean I think they are really important things to remind people about. (Betty)

Knowledge has empowered the participants to manage their own health conditions. All of the participants identified that a lot of strategies taught in the MMM program were simple healthy lifestyle strategies that they were already using or that they could easily incorporate into their life. This might help them to realise that they actually had the ability to alleviate the menopausal symptoms, as well as improve their health. Their confidence in self-management strengthened when they saw the “effect” of those strategies. Several participants spoke about how they discovered the positive influence of some of the strategies that they had implemented.

I’m also aware that the more exercise I do, the more energy I’ve got, the sharper I feel. And now I’m seeing the benefit. (Mary)

I was always a person who did a lot of exercise and that’s disappeared because I couldn’t be bothered anymore. It was too hard. But when I did the group, they talked about how important exercise was to your mental as well as your physical health, so what I try to do now is I always try to walk, nearly every day if I can. So I found that makes a big difference if I’m feeling a bit down or…even when I don’t feel energetic, I try to do that. (Connie)
These two extracts illustrate an empowering process. The participants realised there was something that they could do to create a better health outcome for themselves, by virtue of their own experiences.

Apart from reinforcing existing knowledge, the MMM program also introduced participants to new strategies. All participants indicated that they learned some new strategies in the MMM program. Several participants cited relaxation/mindfulness exercises as the most useful strategy that they had newly learned from the MMM program.

I found the mindfulness exercise was quite good coz sometimes when you are go into menopause, you can get bogged down with what’s happening to you. So I found the mindfulness exercise like having a shower and thinking about how you’re having the shower and washing yourself and…it takes your mind away from it. It’s a small thing, but quite a good – I thought quite powerful. I thought that was good. (Connie)

Controlled breathing, usually I use it if I’m feeling really stressed, just taking a short while to do that. It gets me over the initial hump of feeling. It’s all under control and then I can move on to dealing with it in some way. I also use it at night when I’m lying awake. I feel that I’m sleeping better. When I find that my head’s starting to race with all the things that have to be done, I can usually put it right to the back by just breathing, concentrating on the breathing and relaxation. (Carol)

It seemed that the relaxation/mindfulness strategies helped to create a sense of
calmness for the participants. For some, these strategies helped them to find peacefulness inside themselves, to allow time for easing off tension and to create distance from the “busy mind”. For others, these strategies were ways of coping with symptoms, especially for hot flushes and sleeping disturbance. In Mary’s extracts, she spoke about feeling amazed by her own ability to manage the hot flushes, which was previously considered uncontrollable.

Certainly the relaxation and the breathing…the breathing I would do when I have the hot flushes. And I was quite surprised. I was actually quite staggered that it works. (Mary)

**Improved life in general.** The MMM program not only enhanced participants’ self-efficacy in managing menopausal symptoms, it also helped participants to create a better, healthier life in general.

It definitely helps with everything, it’s not just menopause. They are good strategies for living, really. I mean I know that they help with the symptoms of it, but they definitely are just good strategies for living, you know. (Amanda)

I think it (MMM) gave me a lot of opportunities to think about who I was and who I wanted to become and what was happening to me. And I was lucky enough to be in a position to be able to think about that and to make the changes I needed to make. I mean I don’t think the changes I needed to make were drastic. I think that what I needed to do was sort of
reinterpret…what was happening to me and what this meant for me going forward in the future so having done that I feel like I can move forward and deal with it. I don’t feel overrun, I don’t feel out of control, I don’t feel that if I have a hot flush now is going to be the end of the world.

(Betty)

These examples demonstrate how the participants carried the strategies that they learned from the MMM program with them upon the completion of the program. They generally acknowledged that maintaining a healthy life was a life-long task which required them to actively put in an effort. They were equipped in building a positive future for themselves after the MMM program. For Betty, the MMM program inspired her to think about the future. She seemed to adopt a more optimistic view about the future, by virtue of her confidence in herself to create one that she wants. The following extract was Amanda’s response to what learning the strategies meant for her, speaking of her improved physical as well as psychological wellbeing.

Definitely improved life. I just think it gives me a much more positive outlook on my future as well, you know. It makes me a good role model for my children, you know. I suppose…yeah I can see…sorry I must be feeling positive, I used to be very negative about the future. Now more positive, I can see there’s a lot that I can do in the future. That’s what it does, it makes me see things a lot brighter really. (Amanda)
From the above examples, it can be seen that the MMM program not only had a positive impact on participants’ physical health, but also their psychological health, especially in building self-esteem.

**Positive sense of self.** Participants spoke about feeling positive about themselves following the MMM program. There was a strong sense of growing self-confidence in the participants, including Belinda.

It (the MMM program) brought back who I used to be. The symptoms unfortunately have not fully disappeared, however, I feel a lot more in control and therefore, I’m able to present myself better, I’m back to being a more confident person I used to be. I’m a lot happier. (Belinda)

Prior to the MMM program, participants were suffering from menopausal symptoms and felt out of control in life when they thought menopause had taken over. Following the group, they gained back the control in life that they used to have. It seemed that they found themselves again. As demonstrated in Belinda’s extract, the women did not let menopause define them as women. Some participants’ talked about their positive self in relation to their enhanced mood and psychological wellbeing. In the following extract, Mary spoke of being calmer and happier following the MMM program. This improvement, perhaps, was due to the enhanced self-efficacy of managing symptoms.

I think it makes me calmer. I think I deal with things a bit better. I think people who know me would sort of say that I’m certainly a lot more relaxed than perhaps I was. That’s a good thing. I feel it in myself. I know I’m a lot happier. (Mary)
Other participants spoke about feeling positive in relation to their change of attitude towards menopause. They reported having quite negative views of menopause prior to MMM. They perceived menopause as the evidence of aging, which was considered the loss of youth. Furthermore, menopausal symptoms were regarded as a threat to their physical and psychological wellbeing. A negative attitude towards menopause was found to be associated with higher level of distress and also with more reported symptoms (Ayers, Forshaw, & Hunter, 2010; Nosek et al., 2010). Hence, by adopting a more positive attitude following the MMM program, the participants could improve their psychological distress as well as their menopausal experiences.

I guess I would say that at the beginning like when it started to happen last year, I sort of saw menopause as the end in a way, like the end of child bearing, the end of this period in my life that I really enjoy, that was really great, you know. And that was all downhill from here, god, how I look, how I feel, how…everything was awful. But I think that the reprocessing of it meant that, you know, it’s an opportunity for a new beginning. It’s an opportunity to be a different…well, not a different person, but to embrace difference…a different life in lots of ways. (Betty)

I think I’d just been fighting it and fighting it and fighting it, and I think what the course has actually done for me, is to accept things. Accept things that are happening so much more readily than I was. And you’re not submitting to getting older. You’re just dealing with it as it comes…Now I’ve got the information, and now when I get a hot flush or when I forget something, I’ll have a little chuckle and realize that, you
know, you’re not going crazy, that’s just menopause and this is normal.

(Lara)

These extracts demonstrate participant’s change of attitude towards menopause, or even aging. Betty had a despairing but vivid description of her thoughts at the time her menopause started. Her thought “menopause flagging the end of happiness in life” reflected a sense of desperation, which was echoed by some other interviewees. After the MMM program, the women were able to look at menopause from a new perspective. Instead of feeling sorry for themselves, they started to “embrace the difference” and saw menopause as “an opportunity for a new beginning”. The attitude shift from “refusal” to “acceptance” was best described in Lara’s extract. Acceptance does not simply mean giving up. Contrarily, it represented the employment of an active role in managing their health.

In the last part of Lara’s extract, she spoke about her positive attitude using the description of being able to “have a little chuckle” about the menopausal symptoms. By reviewing the transcripts, a lot of interviewees had used the same description to highlight their improvement in attitude.

I think I probably have a much better sense of humour about growing old and menopause symptoms and things. I mean, the ability to be quite open about it, which is something that I didn’t have before. (Betty)

Feeling a lot more positive. And able to laugh at myself whereas before it was just too serious to laugh about. So yeah, I do feel that I was coping better. (Karen)
I’m a lot more positive. It’s not like “oh god, poor me.”; it’s “for god’s sake! That’s again!” kind of thing. So it helps in that way. (Karen)

The laughing seemed to be an accurate description of what had happened during and after the MMM program. Perhaps by talking about menopause openly and humorously with other women in the group, together with the knowledge given in the MMM program, participants were able to develop more positive and accurate attitudes toward menopause and aging.

**The Power of Group**

**Meeting others in the same boat.** Group discussion is one of the components of the MMM program that was most valued by the participants. All of the women spoke about how meeting similar women created a sense of comfort for them. Since menopause was rarely discussed previously, several of them had a strong sense of uniqueness in experiencing those terrible menopausal symptoms prior to the MMM program. The group discussion has provided a great opportunity for them to hear concerns similar to their own, which helped them to realise they were not the only one experiencing a tough life transition.

To know that the symptoms I was feeling are all normal was really reassuring because I just thought I’m starting to ache and I’m tired all the time, and I’m cranky all the time and I can’t sleep. It just seems to snowball. And knowing that these are normal symptoms of this time was helpful. (Amy)
You feel comfortable about yourself because when you’re going through it, you feel isolated, you feel alone, you feel there is something wrong with you. It’s just a horrible feeling. However, if someone else can identify with it, it’s consolation that you’re normal, and that you’re ok because you don’t feel normal. (Belinda)

Interacting with those other three ladies and hearing their struggles and how their struggles were similar to mine but not, I think that was the best thing for me. Being able to talk and laugh with other ladies about stuff that you can’t talk and laugh about. I found that was good… make me feel that I wasn’t the only boat out there in the sea, in the sea of menopause. (Karen)

In these extracts participants spoke of feeling reassured that there were other people in the same boat. Belinda, in particular, expressed an emotional shift from feeling “abnormal” to a sense of relief when she realised there were other women facing similar menopausal symptoms. A lot of the participants appreciated the opportunity that they could talk to other women about menopause in a relaxing, empathic and supportive environment. Following group discussion, the feeling of isolation and uniqueness dissipated and the participants were able to employ a positive attitude towards menopause. One of the participants also highlighted how sitting around a group of similar women created a safe and non-judgemental environment for her to ventilate.

I felt quite comfortable and everyone was free to talk. And you can really get it off your chest cause’ there were other people same as you. (Helen)
Some women had weak social networks outside the group, hence the support in
the MMM program was valuable to them. For others, despite their current support,
there was perhaps greater empathy and understanding among group members who
shared similar menopausal experiences and were in the same stage of life.

**Being each others’ coach.** Apart from the opportunity for sharing menopausal
experiences, the group also provided a platform for sharing information. All
interviewees spoke about learning ways to cope with symptoms from other group
members.

I found sometimes the suggestions that the participants put forward were
really quite good. And it just gave me a different way of looking at things
that I haven’t thought of before. (Connie)

They are going through it with you, and there may be something new that
just happened and they’re able to share with you. So it’s also about
sharing, and just helping each other. (Belinda)

They often give you a way of dealing with that activity that you haven’t
thought of because somebody would have a different way of dealing with
it. (Carol)

These examples show participants’ appreciation of information sharing,
especially strategies for managing symptoms. The sharing of wisdom was important in
the context of menopause management, where experiences and strategies are quite
different for everyone. The women welcomed ideas on strategy implementation, and
perhaps the more they learned, the more likely they could find effective strategies for themselves.

Create hope by helping each other. Exchange of ideas happened during discussions which played an important role in helping participants to make the most of the information provided. While some participants spoke about how grateful they were to being given information, some of them talked about the benefit of being in an altruistic position where they were able to offer help to others.

My contribution to discussions is from someone who has survived those years and is coming out the other side. And I think for someone who is in the middle of it that’s sort of a bit reassuring… so I think that observations from people in different circumstances was probably very useful as a whole. (Betty)

I felt I’m good at something, you know, that was like, “hey, I can do this. And this is what, you know. And this is how, and this is the strategies that I used.” I felt that I was able to help. (Karen)

Having participants who had “survived” menopausal situations talking about their experience seemed to instil hope in others who were still struggling. The ability to help others also bought about positive self-esteem to those offering help. Some were proud of being able to pass on their knowledge and experience to other members. The group discussion benefited all participants, regardless of whether they offered assistance or received help.
Now I realise that I am lucky. Social comparisons are inevitable when people meet similar others. Participants spoke about the opportunity to hear others’ experiences which then made them realise some were “worse off” than them. They felt better about themselves after the downwards social comparison.

I certainly welcomed hearing about others because it actually made me feel I’m pretty lucky. My symptoms aren’t terribly, you know, nuisance factor, not too much, I can put up with them. (Mary)

Some people had terrible experiences with hot flushes and that had been going on for years and years and years. That sort of made me feel lot better knowing that other people are experiencing the same thing, and often much worse than I had. (Amy)

It (group discussion) also reinforced the things about my symptoms for whatever reason weren’t as severe as other people’s symptoms. I did have some symptoms but they weren’t totally controlling parts of my life as other women were experiencing where, you know, they couldn’t do things because of this. I guess that hot flush thing where I’ve just accepted it as a norm, and they would be embarrassed by it. I think “oh, I’ve never thought about being embarrassed by it.” That reinforced what I was thinking - ”you’re getting out of this pretty easy, your symptoms are fairly mild.” (Carol)
These examples showed that participants compared themselves with others whose symptoms were more severe than theirs, resulting in re-appraisal of their situation in a more positive direction. Besides comparing the severity of symptoms, some participants like Carol also compared their attitudes toward menopausal symptoms with others. Social comparison reinforced their positive attitudes, which possibly promoted psychological wellbeing.

**I hope we can meet again.** In general, strong group cohesion was evident in the MMM program. Participants spoke about the connection between group members.

We actually got along quite well and there were different personalities in there. Everybody pretty much participated in the group discussions and we were honest about things that were happening. I found it personally very helpful. (Lara)

It was very comfortable, very easy, very nice ladies that you felt affinity with where you looked forward to seeing them the next time. I’ve never seen any of them again. (Mary)

The group cohesiveness was further confirmed by the interviewees’ desire to continue contact with other group members after termination of MMM.

I sort of was wanting to find a friend that I could share this journey with. I do think that it would be helpful to come together as a group afterwards. (Amy)
It’s a shame that it didn’t then lead into a support group. I think it would have been good if it led in to meeting once a month with those people. So you have the continuing support from them and you could talk about how you’re going and laugh at one another’s failures, and commiserate with one another’s failures, and it might motivate you for the next challenge. It was something that we all said at different times. Oh it’s a shame we won’t keep on meeting. I’m going to miss you all. (Karen)

The continued contact, if any, appeared to serve several functions. Amy’s extracts again highlighted the feeling of loneliness that women had in their menopause journey. Some participants was looking for continuing emotional support from their group members who were perceived to be empathic and understanding because they were in the similar situation. For some other participants, the continuing support that they expected was both emotional and practical. They not only wanted to “talk and laugh” with other group members but also wanted to focus their discussion on strategy implementation. This implied that the group discussion had a positive influence on women’s menopause management especially for increasing their awareness and motivation.

**Need for Options of Delivery Format**

Participants had been offered two choices of delivery format, Weekly and Weekend, at the beginning of the program. Since the Weekend MMM was a rather innovative format which has not been researched before, it was interesting to listen to participants’ comments about different delivery format.
Weekend MMM: not as good. When asked to comment on the delivery format, all Weekend interviewees indicated that there was a lot of information to take in for one day.

I think there’s a lot of information to digest in two days. And then, to have to go and implement that, you have to be really quite strict and motivated to follow…to get the best out of it. (Amy)

Obviously everyone was really very tired by the end of it. It’s a long day and lots to take in… I even start thinking,” oh, I can’t sit here anymore and I’ve got to go.” Not in a horrible way. So whatever would be covered at the end of the day you probably wouldn’t take in as much. (Helen)

There was a perception that the Weekend MMM was too long. The amount of information given on one day had overwhelmed the participants.

The Weekend participants also spoke about the perceived difficulty in completing the take-home activities by themselves, without weekly follow-up as the Weekly participants had.

Unless you…come back and discuss what you’ve done for another half a day. And then go through it may be they work out where you can solve any issues that you had…so that would help. Unless you actually had a little bit more time to go through it. Then you know like where you actually do a little bit of workshop. Anyone who is having a problem with
a certain area that you can actually get advice on those, or listen to
everyone else. But I don’t think we had that time. (Amanda)

I think it would be easier to concentrate on one topic each week and then share. I don’t remember that we really shared much of the take-home activities. (Amy)

I still think the weekly one I think would probably help people more because of feedback, you probably… might do it (take home activity) knowing that you’re going to see someone, you could remember what you did; and when there is a big gap, you can’t remember. (Helen)

These extracts demonstrated that the group discussion were important in facilitating the completion of take-home. The participants valued the feedback and advice they received from the group discussion and perceived this information as helpful particularly in problem-solving. Furthermore, participants were more likely to do the take-home activities if they had been invited to share their experiences in the group. There was a strong sense that the time dedicated for discussing the take-home activities was not enough for the Weekend groups. Additionally, there was no follow-up after the second session where participants could discuss the last five take-home activities.

I think that’s something that I feel strongly about that we kinda didn’t have a chance to share how we went with the other stuff, with the last 5…I don’t think I’ve really put a lot of work into that (take-home activities in
the 2\textsuperscript{nd} session), I have to say, which is perhaps where a follow-up might encourage people to do that. (Amy)

The amount of information and the opportunity to discuss the take-home activities were the two main advantages of the Weekly had over the Weekend groups as perceived by the Weekend participants. Their speculation was supported by the Weekly participants, who spoke about their perceived benefit of being in the Weekly group.

The delivery format that I did suited my personality more because I like to contemplate and think about things. In the intensive workshop like that sometimes I think the information is too much I’m trying to digest it and think about it and may be answer questions and that would be probably too intense for me. (Connie)

The weekly format would have been a lot better, because it broke things down in small enough chunks and gave me time to think about them before the next chunk came along. (Betty)

I think going once a week for an hour was better for me because I can’t sit and concentrate for very long. My body kicks in and then I got the drippy eyes and I need to go for walk. So the hour was just long enough for me. (Karen)

\textbf{But, thanks for the options.} Although they had only experienced MMM in one delivery format, all participants perceived the Weekly format was superior to Weekend format, by virtue of the well-paced sessions and more group discussion. Despite the
perceived disadvantages, participants chose the Weekend format for various reasons. Two out of five interviewees from the Weekend MMM said because of their work/family commitment; one revealed that it was more cost effective for her in terms of transportation as she was living a long distance away. The Weekend MMM was undoubtedly a creative way to increase the accessibility of the treatment. This option opened the door for those who had difficulty attending sessions every week.

I thought it was great that you accommodated…you know, people’s lifestyle. (Mary)

This example demonstrated the appreciation that participant had for the availability of the Weekend format. Mary was working full-time when MMM first started. Due to her tight schedule, she would not have joined the MMM if only the Weekly format had been available.

The remaining two Weekend participants indicated that they liked the idea of concentrating the course on one day. In the following extract, Amy spoke about her preference for the Weekend group.

It was a relief that I didn’t have to fit it into my day that I could come here on a Saturday and just really relax and enjoy it. (Amy)

Participants chose the delivery format by weighing the pros and cons according to their personal circumstances and preferences. In other words, the availability of the format options helped to capture most of the interested women into the MMM program.
Appendix D

Information Sheet for the MMM Evaluation Study
Information Statement for the Research Project:

Menopause Made Manageable (MMM) Evaluation Study

The research team:
Dr Rosemary Webster (Research Supervisor, School of Psychology, the University of Newcastle)
Cindy Buxton (Professional Doctorate student, School of Psychology, the University of Newcastle)
Bonnie Ip (Professional Doctorate student, School of Psychology, the University of Newcastle)

You are invited to participate in a group treatment program for Menopausal symptoms conducted by Dr Rosemary Webster (Clinical Psychologist and Clinic Director) and Psychology Clinic Interns.

The group treatment program will be evaluated by Cindy Buxton and Bonnie Ip as part of their studies at the University of Newcastle under the supervision of Dr Rosemary Webster.

Why is the research being done?
The aim of this project is to determine the feasibility and effectiveness of a 10 session Cognitive Behavioural Group Therapy program designed for women experiencing symptoms associated with menopause. Each session will take 1 ½ hours. This program evaluation study will determine the benefits to participant’s physical and emotional wellbeing.

Who can participate in the research?
Women aged 40 and 65 years who are experiencing symptoms associated with menopause (e.g. irregular menstruation, hot flushes, night sweats, insomnia, fatigue, and muscle weakness) are invited to participate in the group treatment program and assist in the program evaluation by completing surveys.

What choice do you have?
Participation in this research is entirely your choice. Only individuals who give their informed consent will be included in the research project. Whether or not you decide to participate, your decision will not disadvantage you.

If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data relating to you.
What would you be asked to do?

If you agree to participate, you will be randomly assigned to one of two groups. One group will commence the MMM program and the other will wait 10 weeks and then begin the program. You will be asked to attend the MMM program at a cost of $10 per session. You will attend the program in one of two formats: 10 weekly sessions; or two day sessions (five sessions per day) occurring five weeks apart. Evaluation of the program involves a survey asking questions about your physical and emotional health and menopause symptoms. The survey will be completed before attending the MMM program, after the program is completed, and at three and six months following the program. Participants in the waiting group will complete the survey twice before attending the program (at the beginning and at the end of the waiting period).

During the MMM program you will be asked to complete a Symptom Diary recording your menopause symptoms. Participants will also be asked to complete a program evaluation survey at the conclusion of the program.

How much time will it take?

The survey should take approximately 20 minutes to complete on each occasion (before and after the program, and at three and six months following the program). The MMM program consists of 10 sessions (1 ½ hours each session). The symptom diary should take 2-5 minutes each week while attending the MMM program. The evaluation survey should take approximately 5 minutes to complete at the conclusion of the program.

What are the risks and benefits of participating?

We cannot promise participants any benefit from participating in this research although prior research suggests that participant’s attending similar programs have shown improvements on measures of physical and emotional wellbeing.

In the survey you will be asked questions about your physical and emotional well-being, should you experience any distress please inform the study researchers. Alternatively you could contact the Psychology Clinic (Ph. 49215075) or Lifeline (Ph. 131114). If your survey shows that you have high levels of depression symptoms the researchers will contact you.

How will your privacy be protected?

If you consent to be included in the research project, your name and contact details will be given a numeric code by the Clinic Administrator. The surveys (identified by a code) will be posted to you by the Clinic Administrator. When you have completed your survey please return it in the reply paid envelope to the researchers.

Your contact information and surveys will be stored separately in a secure location. Yours contact information will not be accessed by the researchers unless they are concerned about your wellbeing; you consent otherwise; or as required by law.

Data will be retained for at least 5 years at the School of Psychology, University of Newcastle.

How will the information collected be used?

The findings of this study will be reported in a thesis to be submitted for Ms Cindy Buxton’s degree. Results of the study may also be presented at scientific conferences and in journals.

Individual participants will not be identified in any reports arising from this project.

A summary of the results will be made available on the Psychology Clinic website on completion of the study approximately early 2011.

www.newcastle.edu.au/school-old/psychology/research/psychology_clinic.html
What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, the researcher will be available to speak to you at your request.

If you would like to participate, please complete the enclosed Consent Form and return it to the University of Newcastle Psychology Clinic in the reply paid envelope provided.

Further information

If you would like further information please contact the Psychology Clinic (Ph: 49215075) or the project supervisor, Dr Rosemary Webster (Ph: 4921 5975) or student researchers cindy.buxton@studentmail.newcastle.edu.au or Ho.Ip@studentmail.newcastle.edu.au

Thank you for considering this invitation.

Cindy Buxton  
Intern Psychologist  
Student Researcher

Bonnie (Ho-Kwan) Ip  
Intern Psychologist  
Student Researcher

Dr Rosemary Webster  
Clinical Psychologist  
Project Supervisor

Complaints about this research

This project has been approved by the University’s Human Research Ethics Committee, Approval No. H-2008-0447.

Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au.
Appendix E

Consent Form for the MMM Evaluation Study
Consent Form for the Research Project:

Menopause Made Manageable (MMM) Evaluation Study

Researchers: Dr Rosemary Webster, Cindy Buxton and Bonnie Ip

I agree to participate in the above research project and give my consent freely.

I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

I consent to:

- Attend the MMM program at a cost of $100.
- Complete a survey before attending the MMM program, after the program is completed, and at follow up times.
- Being contacted via telephone or email by the student researcher if I have not returned my survey within three weeks.
- My contact information being accessed by the researchers and to them contacting me if they have concerns about my welfare.
- Being contacted for future follow up studies (please tick yes or no) Yes [ ] No [ ]
- My data may be used in other research (please tick yes or no) Yes [ ] No [ ]

I understand that my contact information will not be accessed by the researchers unless they are concerned about my wellbeing; I consent otherwise; or as required by law.

I understand that my personal information will remain confidential to the researchers except as required by law.

I have had the opportunity to have questions answered to my satisfaction.

Print Name: ____________________________

Telephone: ____________________________ Email: ____________________________

Signature: ____________________________ Date: ____________________________

Student Researchers: Cindy Buxton Email: cindy.buxton@studentmail.newcastle.edu.au and Bonnie (Ho) Ip Email: Ho.Ip@studentmail.newcastle.edu.au
Appendix F

Confirmation Letter for the MMM Interview
<<Date>>

<<FirstName>> <<Surname>>
<<Address1>>
<<Address2>>

Dear <<FirstName>>

Thank you for agreeing to participate in the research interview for the Menopause Made Manageable group program, details as below:

Location: Psychology Clinic
Time and Date:

Please find enclosed a parking permit to use while you are at the Clinic. Please let me know if this time or date is not suitable and we can make another time.

Regards,

Bonnie Ip
Researcher
T +61 2 4921 5075
F +61 2 4921 7749
psychology-clinic@newcastle.edu.au
Appendix G

Information Sheet for the MMM Interview
Information Statement for the Research Project:

Menopause Made Manageable (MMM) Evaluation Study

The research team:
Dr Rosemary Webster (Research Supervisor, School of Psychology, the University of Newcastle)
Dr Martin Johnson (Research Supervisor, School of Psychology, the University of Newcastle)
Cindy Buxton (Professional Doctorate student, School of Psychology, the University of Newcastle)
Bonnie (Ho) Ip (Professional Doctorate student, School of Psychology, the University of Newcastle)

You are invited to participate in an individual interview conducted by Bonnie Ip (Professional Doctorate student) as part of her studies at the University of Newcastle under the supervision of Dr Rosemary Webster.

Why is the research being done?
The aim of this interview is to learn about your experience of menopausal symptoms, your participation in the MMM program, and the impact of the program on your symptoms. Your feedback will assist us to improve the program.

Who can participate in the research?
Women who have attended the MMM program.

What choice do you have?
Participation in this research is entirely your choice. Only individuals who give their informed consent will be included in the research project. Whether or not you decide to participate, your decision will not disadvantage you.

If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data relating to you.

What would you be asked to do?
If you agree to participate, you will be contacted regarding a suitable time to conduct the interview.
You will be asked questions about your experience of the MMM program and your menopausal symptoms. The interview will be audio taped for future transcribing.
Following the interview, you will be asked to confirm consent to use the transcript for research, conference and publication purposes.
How much time will it take?
The interview will take about 45 minutes.

What are the risks and benefits of participating?
We cannot promise participants any benefit from participating in this interview, but we hope that this will give you the opportunity to provide feedback to the Psychology Clinic about the MMM program.

In the interview you will be asked questions about your physical and emotional well-being, should you experience any distress please inform the study researchers. Alternatively you could contact the Psychology Clinic (Ph. 49215075), Lifeline (Ph. 131114) or your local Mental Health Team at Hunter New England Mental Health.

How will your privacy be protected?
You will be treated with respect and the information you give us will be kept confidential. Exceptions to this would be if you are at risk to yourself or others; or as required by law.

You privacy will be protected by using a numeric code to identify the information you have provided. Your name and contact details will not be associated with your audio taped information and will be stored separately in a secure location. Notes written following the interview will be kept in a locked file and only available to the researchers.

Audio taped data will be destroyed once the research has been completed. De-identified transcript of the interview will be kept at the School of Psychology, University of Newcastle in a locked filing cabinet for 5 years.

How will the information collected be used?
The information collected will be used in a thesis to be submitted for Bonnie Ip’s and/or Cindy Buxton’s Doctoral degree. Results of the study may also be presented at scientific conferences and in journals. However, individuals will not be identifiable in any reports arising from this study. If you wish to have a summary of a study sent to you within two years after completion of the project, please complete the relevant section of the consent form.

A summary of the research results will be made available on the Psychology Clinic website on completion of the study approximately early 2011.

www.newcastle.edu.au/school-old/psychology/research/psychology_clinic.html
What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, the researcher will be available to speak to you at your request.

If you would like to participate, please complete the enclosed Consent Form and return it to the University of Newcastle Psychology Clinic in the reply paid envelope provided.

Further information

If you would like further information please contact the Psychology Clinic (Ph: 49215075) or the project supervisor, Dr Rosemary Webster (Ph: 4921 5975) or student researchers cindy.buxton@studentmail.newcastle.edu.au or Ho.lp@studentmail.newcastle.edu.au

Thank you for considering this invitation.

Cindy Buxton        Bonnie (Ho-kwan) lp        Dr Rosemary Webster       Dr Martin Johnson
Intern Psychologist  Intern Psychologist     Clinical Psychologist     Health Psychologist
Student Researcher   Student Researcher     Project Supervisor       Project Supervisor

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2008-0447.

Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au.
Appendix H

Symptom Diary
Symptom Diary: Week_______Date____________________

Symptom Rating Scale

From the scale below select the number that represents the level of discomfort associated with a symptom for that day.

<table>
<thead>
<tr>
<th>Rating</th>
<th>none</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
<th>very severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot flushes, sweating (episodes of sweating, night sweats)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart discomfort (unusual awareness of heart beat, hear skipping, heart racing, tightness)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Depressive mood (feeling down sad, on the verge of tears, lack of drive, mood swings)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritability (feeling nervous, inner tension, feeling aggressive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety (inner restlessness, feeling panicky)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)</td>
<td></td>
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<tr>
<td>Sexual problems (change in sexual desire, in sexual activity and satisfaction)</td>
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</tr>
<tr>
<td>Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)</td>
<td></td>
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</tr>
<tr>
<td>Joint and muscular discomfort (pain in the joints, rheumatoid complaints)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Appendix I

University of Newcastle Human Research Ethics Committee

Notification of Approval 1 (24 September 2009)
Notification of Expedited Approval

To Chief Investigator or Project Supervisor: Dr Rosemary Webster
Cc Co-investigators / Research Students: Miss Ho Ip
Ms Cindy Buxton
Re Protocol: A cognitive behavioural group therapy program Menopause Made Manageable (MMM) to assist in the management of peri-menopausal symptoms: A feasibility study
Date: 25-Sep-2009
Reference No: H-2008-0447

Thank you for your Response to Conditional Approval submission to the Human Research Ethics Committee (HREC) seeking approval in relation to a variation to the above protocol.

Variation to:

1. Add a new student researcher, Ho-Kwan (Bonnie) Ip, to the research team to assist with program evaluation.

2. Include new questions in the follow-up survey (MMM - Evaluation Study follow-up Survey, Version 3, dated 14 August 2009) to cover additional factors that may impact on program evaluation.

3. Amend the following study documents accordingly:
   a. Information Statement - MME Evaluation Study (version 4, dated 14 September 2009);
   b. Consent Form - MME Evaluation Study (version 3, dated 14 September 2009); and

Your submission was considered under Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 24-Sep-2009.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request.

Associate Professor Alison Ferguson
Chair, Human Research Ethics Committee

For communications and enquiries:
Human Research Ethics Administration

Research Services
Research Office
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 18999
Appendix J

University of Newcastle Human Research Ethics Committee

Notification of Approval II (17 December 2009)
Notification of Expedited Approval

To Chief Investigator or Project Supervisor:  
Doctor Rosemary Webster

Cc Co-investigators / Research Students:  
Doctor Martin Johnson
Miss Ho Ip
Ms Cindy Buxton

Re Protocol:  
A cognitive behavioural group therapy program
Menopause Made Manageable (MMM) to assist
in the management of peri-menopausal
symptoms: A feasibility study

Date:  
17-Dec-2009

Reference No:  
H-2008-0447

Thank you for your Variation submission to the Human Research Ethics Committee (HREC) seeking approval in relation to a variation to the above protocol.

Variation to:

1. Choose 10 participants to attend a one to one semi-structured interview with the researcher.

2. Add Rev Dr Martin Johnson to the research team.
   - Participant Information Statement, Version 5 dated 30.11.2009
   - Consent Form, Version 4 dated 30.11.2009

Your submission was considered under Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 17-Dec-2009.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request.

Associate Professor Alison Ferguson
Chair, Human Research Ethics Committee

For communications and enquiries:
Human Research Ethics Administration

Research Services
Research Office
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 18999
F +61 2 492 17164
Human-Ethics@newcastle.edu.au
Appendix K

The MMM Evaluation Study Survey (Pre-treatment)
Menopause Made Manageable (MMM)
Evaluation Study Survey

Researchers:
Dr Rosemary Webster (Clinical Psychologist, University of Newcastle)
rosemary.webster@newcastle.edu.au
Cindy Buxton (Intern Psychologist, University of Newcastle) cindy.buxton@studentmail.newcastle.edu.au
Bonnie (Ho-Kwan) Ip (Intern Psychologist, University of Newcastle) Ho.ip@studentmail.newcastle.edu.au

Date completed survey ____________________________

General Information

1. Age _______ years

2. Cultural Background

3. Education

   Highest secondary level completed

   Highest tertiary level completed

4. Occupation

Relationship Information

5. Current Relationship status
   □ Married (includes de facto relationship)
   □ Widow
   □ Separated or divorced
   □ Single

6. Number and ages of children

7. How many people could you call upon to discuss an issue you needed to discuss with someone?
   □ No-one
   □ 1 person
   □ 2 persons
   □ 3 persons
   □ 4 persons
   □ 5 persons
   □ More than 5 persons
8. What is your satisfaction with the support from people around you?

☐ not satisfied  ☐ somewhat satisfied  ☐ satisfied

General and Reproductive Health

9. What has been the pattern of your recent menstrual bleeding - Please select one option:

☐ Menstruation in past three months with no change in regularity
☐ Menstruation in past three months with change in regularity
☐ No menstruation in past 3 months but some menstrual bleeding in past 12 months
☐ No menstrual bleeding in the past 12 months

10. If you know, how old was your biological mother when she experienced menopause?

______________________ years

11. How old were you when you started menstruating?______________________

12. What is your height?   ________________________ centimeters

13. What is your weight?   ________________________ kilograms

14. Please list any medications you are taking and what the medication is for. Please include hormone replacement, psychological and herbal medications.

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________

__________________________________________________________________
15. Have you had breast cancer? Yes / No (please circle response)

16. If you have had breast cancer, what treatment have you had for breast cancer?

17. Have you had a hysterectomy or ovary removal?

18. How many ovaries do you currently have?

19. How many standard alcoholic drinks do you consume in a week?

20. Do you smoke? Yes / No (please circle response)

21. How many minutes of exercise do you undertake in a week? (if no exercise is undertaken answer “0”)

If you have any further details you think would be relevant to the research please include here:

Thank you for completing these questions and the questionnaires attached

Please return to The University of Newcastle Psychology Clinic
in the reply paid envelope provided
Menopause Rating Scale (MRS)

Which of the following symptoms apply to you at this time? Please, mark the appropriate box for each symptom. For symptoms that do not apply, please mark 'none'.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>none</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
<th>very severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hot flushes, sweating (episodes of sweating)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Irritability (feeling nervous, inner tension, feeling aggressive)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Anxiety (inner restlessness, feeling panicky)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Sexual problems (change in sexual desire, in sexual activity and satisfaction)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11. Joint and muscular discomfort (pain in the joints, rheumatoid complaints)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Score: 0 1 2 3 4
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

**The rating scale is as follows:**

0 Did not apply to me at all  
1 Applied to me to some degree, or some of the time  
2 Applied to me to a considerable degree, or a good part of time  
3 Applied to me very much, or most of the time

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>I found it difficult to relax</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>I felt I was close to panic</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>I felt I wasn't worth much as a person</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
SF-36

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer every question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is:
   (circle one)
   Excellent ................................................................. 1
   Very good ................................................................. 2
   Good ................................................................. 3
   Fair ................................................................. 4
   Poor ........................................................................ 5

2. Compared to one year ago, how would you rate your health in general now?
   (circle one)
   Much better now than one year ago ........................................ 1
   Somewhat better now than one year ago ................................ 2
   About the same as one year ago ......................................... 3
   Somewhat worse now than one year ago ................................ 4
   Much worse now than one year ago .................................... 5

3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

   ACTIVITIES
   Yes, Limited
   Yes, Limited
   No, Not
   Limited
   A Lot
   A Little
   At All
   (circle one number on each line)

   a. Vigorous activities such as running, lifting heavy objects, participating in strenuous sports... 1 2 3
   b. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf... 1 2 3
   c. Lifting or carrying groceries........................................ 1 2 3
   d. Climbing several flights of stairs................................ 1 2 3
   e. Climbing one flight of stairs...................................... 1 2 3
   f. Bending, kneeling, or stooping..................................... 1 2 3
   g. Walking more than a mile......................................... 1 2 3
   h. Walking several blocks............................................. 1 2 3
   i. Walking one block.................................................. 1 2 3
   j. Bathing or dressing yourself...................................... 1 2 3

Copyright © 1992 Medical Outcomes Trust. All rights reserved. (SF-36 Standard U.S. Version 1.0)

Management of Mental Disorders: Handbook of Management Skills
4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cut down on the amount of time you spent on work or other activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Accomplished less than you would like</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>c. Were limited in the kind of work or other activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>d. Had difficulty performing the work or other activities (for example, it took extra effort)</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cut down on the amount of time you spent on work or other activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Accomplished less than you would like</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>c. Didn't do work or other activities as carefully as usual</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

<table>
<thead>
<tr>
<th></th>
<th>(circle one)</th>
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<tbody>
<tr>
<td>Not at all</td>
<td>1</td>
</tr>
<tr>
<td>Slightly</td>
<td>2</td>
</tr>
<tr>
<td>Moderately</td>
<td>3</td>
</tr>
<tr>
<td>Quite a bit</td>
<td>4</td>
</tr>
<tr>
<td>Extremely</td>
<td>5</td>
</tr>
</tbody>
</table>

7. How much bodily pain have you had during the past 4 weeks?

<table>
<thead>
<tr>
<th></th>
<th>(circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td>Very mild</td>
<td>2</td>
</tr>
<tr>
<td>Mild</td>
<td>3</td>
</tr>
<tr>
<td>Moderate</td>
<td>4</td>
</tr>
<tr>
<td>Severe</td>
<td>5</td>
</tr>
<tr>
<td>Very severe</td>
<td>6</td>
</tr>
</tbody>
</table>
8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

(circle one)

- Not at all ........................................................................................................ 1
- A little bit ......................................................................................................... 2
- Moderately ..................................................................................................... 3
- Quite a bit ..................................................................................................... 4
- Extremely .................................................................................................... 5

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the past 4 weeks -

<table>
<thead>
<tr>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>(circle one number on each line)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- a. Did you feel full of pep?... 1 2 3 4 5 6
- b. Have you been a very nervous person? .......... 1 2 3 4 5 6
- c. Have you felt so down in the dumps that nothing could cheer you up?..... 1 2 3 4 5 6
- d. Have you felt calm and peaceful? ............... 1 2 3 4 5 6
- e. Did you have a lot of energy? ...................... 1 2 3 4 5 6
- f. Have you felt downhearted and blue?... 1 2 3 4 5 6
- g. Did you feel worn out? .... 1 2 3 4 5 6
- h. Have you been a happy person?................... 1 2 3 4 5 6
- i. Did you feel tired? ........... 1 2 3 4 5 6
10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

(circle one)

- All of the time .............................................................................. 1
- Most of the time ........................................................................... 2
- Some of the time .......................................................................... 3
- A little of the time ........................................................................ 4
- None of the time .......................................................................... 5

11. How TRUE or FALSE is each of the following statements for you?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don’t Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I seem to get sick a little easier than other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b. I am as healthy as anybody I know</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c. I expect my health to get worse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d. My health is excellent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix L

The MMM Evaluation Study Survey (Follow-up)
Menopause Made Manageable (MMM) Evaluation Study Follow-up Survey

Researchers:
Dr Rosemary Webster (Clinical Psychologist, University of Newcastle) rosemary.webster@newcastle.edu.au
Cindy Buxton (Intern Psychologist, University of Newcastle) cindy.buxton@studentmail.newcastle.edu.au
Bonnie Ip (Intern Psychologist, University of Newcastle) ho.ip@studentmail.newcastle.edu.au

Date completed survey _____________________________

Relationship Information

1. Current Relationship status
   - Married (includes de facto relationship)
   - Widow
   - Separated or divorced
   - Single

2. How many people could you call upon to discuss an issue you needed to discuss with someone?
   - No-one
   - 1 person
   - 2 persons
   - 3 persons
   - 4 persons
   - 5 persons
   - More than 5 persons

3. What is your satisfaction with the support from people around you?
   - not satisfied
   - somewhat satisfied
   - satisfied
General and Reproductive Health

4. What has been the pattern of your recent menstrual bleeding - Please select one option:
   □ Menstruation in past three months with no change in regularity
   □ Menstruation in past three months with change in regularity
   □ No menstruation in past 3 months but some menstrual bleeding in past 12 months
   □ No menstrual bleeding in the past 12 months

5. What is your weight? ______________________ kilograms

6. Please list any medications you are taking and what the medication is for. Please include hormone replacement, psychological and herbal medications.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

7. How many standard alcoholic drinks do you consume in a week? ______________________

8. Do you smoke? Yes / No (please circle response)

9. How many minutes of exercise do you undertake in a week? ______________________
   (if no exercise is undertaken answer “0”)

Program evaluation

10. Which group format were you in?
    □ 10 weekly sessions  □ 2 whole-day sessions

11. Please comment on the schedule/duration of the sessions:
    _______________________________________________________________________
    _______________________________________________________________________
    _______________________________________________________________________
12. Which of the following strategies have you included or improved as a result of attending the MMM program. Write a number from 0 to 10 to show how often you have included these strategies in the past week. 0 indicates “not at all” and 10 indicates “every day”.

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all Most days Every day

a) Mindfulness exercises (e.g. walking, eating, observing thoughts, shower) ............

b) Relaxation exercises (e.g. progressive muscle relaxation, visualization) ............

c) Breathing exercise (e.g. paced respiration, counting) ......................................

d) Healthy Diet (e.g. reducing fats and sugars, increasing fruit and vegetables) .......

e) Increased water intake ......................................................................................

f) Increased soy intake .........................................................................................

g) Increased exercise ...........................................................................................

h) Sleep routine .....................................................................................................

i) Identifying and changing unhelpful thinking patterns ........................................

j) Goal setting ........................................................................................................

k) Using memory techniques ................................................................................

l) Reducing procrastination ...................................................................................

m) Improved time management ............................................................................

n) Being assertive ...................................................................................................

o) Using social support networks .........................................................................

p) Managing conflict .............................................................................................

q) Others: ...............................................................................................................
13. What did you like best about the MMM program?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

14. Are there any changes to the MMM program you would suggest?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

15. If you have any further information you think would be relevant to the research please include here (e.g. changes in health, family or work):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Thank you for completing these questions and the questionnaires attached

Please return to The University of Newcastle Psychology Clinic

in the reply paid envelope provided
Menopause Rating Scale (MRS)

Which of the following symptoms apply to you at this time? Please, mark the appropriate box for each symptom. For symptoms that do not apply, please mark 'none'.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>none</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
<th>very severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hot flushes, sweating (episodes of sweating)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Irritability (feeling nervous, inner tension, feeling aggressive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Anxiety (inner restlessness, feeling panicky)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Sexual problems (change in sexual desire, in sexual activity and satisfaction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10. Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11. Joint and muscular discomfort (pain in the joints, rheumatoid complaints)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Score = 0 1 2 3 4
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of the time
3 Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>a fool of myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I felt that I had nothing to look forward to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I found myself getting agitated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I found it difficult to relax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I felt down-hearted and blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I was intolerant of anything that kept me from getting on with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>what I was doing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I felt I was close to panic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I was unable to become enthusiastic about anything</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I felt I wasn't worth much as a person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I felt that I was rather touchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I was aware of the action of my heart in the absence of physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>exertion (eg, sense of heart rate increase, heart missing a beat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>I felt that life was meaningless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SF-36

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer every question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is:

   Excellent................................................................. 1
   Very good ..................................................................... 2
   Good ........................................................................... 3
   Fair.............................................................................. 4
   Poor............................................................................ 5

2. Compared to one year ago, how would you rate your health in general now?

   Much better now than one year ago .................................. 1
   Somewhat better now than one year ago ............................ 2
   About the same as one year ago ........................................ 3
   Somewhat worse now than one year ago ............................ 4
   Much worse now than one year ago ................................... 5

3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

   
   ACTIVITIES
   
   a. Vigorous activities such as running, lifting heavy objects, participating in strenuous sports ...
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   b. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   c. Lifting or carrying groceries ........................................ 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   d. Climbing several flights of stairs ................................ 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   e. Climbing one flight of stairs ....................................... 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   f. Bending, kneeling, or stooping .................................... 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   g. Walking more than a mile ......................................... 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   h. Walking several blocks ............................................. 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   i. Walking one block .................................................. 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3
   
   j. Bathing or dressing yourself ...................................... 1
      (circle one number on each line)
      Yes, Limited A Lot ...................................................... 1
      Yes, Limited A Little ................................................... 2
      No, Not Limited At All ............................................... 3

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4. During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cut down on the <strong>amount of time</strong> you spent on work or other activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. <strong>Accomplished less</strong> than you would like</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>c. Were limited in the kind of work or other activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>d. <strong>Had difficulty</strong> performing the work or other activities (for example, it took extra effort)</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

5. During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cut down on the <strong>amount of time</strong> you spent on work or other activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. <strong>Accomplished less</strong> than you would like</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>c. Didn't do work or other activities as <strong>carefully as usual</strong></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

6. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

<table>
<thead>
<tr>
<th></th>
<th>(circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>1</td>
</tr>
<tr>
<td>Slightly</td>
<td>2</td>
</tr>
<tr>
<td>Moderately</td>
<td>3</td>
</tr>
<tr>
<td>Quite a bit</td>
<td>4</td>
</tr>
<tr>
<td>Extremely</td>
<td>5</td>
</tr>
</tbody>
</table>

7. How much **bodily pain** have you had during the **past 4 weeks**?

<table>
<thead>
<tr>
<th></th>
<th>(circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td>Very mild</td>
<td>2</td>
</tr>
<tr>
<td>Mild</td>
<td>3</td>
</tr>
<tr>
<td>Moderate</td>
<td>4</td>
</tr>
<tr>
<td>Severe</td>
<td>5</td>
</tr>
<tr>
<td>Very severe</td>
<td>6</td>
</tr>
</tbody>
</table>
8. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the home and housework)?  

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A little bit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Quite a bit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extremely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(circle one)

9. These questions are about how you feel and how things have been with you during the **past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 4 weeks** -

<table>
<thead>
<tr>
<th></th>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Did you feel full of pep?...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>b. Have you been a very nervous person? .......</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>c. Have you felt so down in the dumps that nothing could cheer you up?.......</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>d. Have you felt calm and peaceful?................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>e. Did you have a lot of energy?..................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>f. Have you felt downhearted and blue?...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>g. Did you feel worn out? ....</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>h. Have you been a happy person?................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>i. Did you feel tired? ........</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

(circle one)

- All of the time .................................................. 1
- Most of the time .................................................. 2
- Some of the time .................................................. 3
- A little of the time .................................................. 4
- None of the time .................................................. 5

11. How TRUE or FALSE is each of the following statements for you?

<table>
<thead>
<tr>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don't Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I seem to get sick a little easier than other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b. I am as healthy as anybody I know</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c. I expect my health to get worse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d. My health is excellent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix M

Consent Form for the MMM Interview
Consent Form for the Research Project:

Menopause Made Manageable (MMM) Evaluation Study

Researchers: Dr Rosemary Webster, Dr Martin Johnson, Cindy Buxton and Bonnie Ip

I agree to participate in the above research project and give my consent freely.

I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.

I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

I consent to:

- A 45 minute interview about my experience of menopausal symptoms, participation in the MMM program and the impact of that program on my symptoms.

I understand that interview sessions will be audio taped. Following the completion of the research, tapes will be destroyed and only coded transcripts will be kept for 5 years at the University of Newcastle.

I understand that my contact information will not be accessed by the researchers unless they are concerned about my wellbeing; I consent otherwise; or as required by law.

I understand that my personal information will remain confidential to the researchers except as required by law.

I have had the opportunity to have questions answered to my satisfaction.

Print Name: _________________________________________________________

Telephone: ___________________ Email: ________________________________

Signature: ___________________ Date: _________________________________

Student Researchers: Cindy Buxton Email: cindy.buxton@studentmail.newcastle.edu.au and Bonnie (Ho-kwan) Ip Email: Ho.Ip@studentmail.newcastle.edu.au

To be completed at the end of the interview

I agree to my interview being used in its present form by the researchers who may also use quotes from the interview in the analyses and as described in the information sheet.

Signature: ___________________
Appendix N

“Aims & Scope” and “Instructions for Authors” of Psychology & Health

These pages have been removed for copyright reasons.

"Aims & Scope" can be found at:
http://www.tandfonline.com/action/aboutThisJournal?
show=aimsScope&journalCode=gps20

"Instructions for Authors" can be found at:
http://www.tandfonline.com/action/authorSubmission?
journalCode=gps20&page=instructions