The Moderating Role of Age on the Relationship between Attitudes Towards Menopause and Well-Being in Women

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Abstract

All women experience a challenging stage in their lives called menopause. This naturally occurring phase can impact women's satisfaction with life and well-being in general. One factor influencing well-being in women is their attitudes towards menopause. The relationship between attitudes towards menopause and well-being might be affected by the age of the women. Therefore, this study aims at assessing the moderating role of age on the relationship between attitudes towards menopause and well-being in women aged 30 to 50 years. A mixed-methods study design with open and closed questions was implemented. The dataset consisted of 89 middle-aged women from the Netherlands, Germany, and Poland, using convenience and snowball sampling. During the research, the participants could qualitatively elaborate on their perspectives about menopause in an open question on menopause. In addition, the Mental Health Continuum – Short Form and the Attitudes Towards Menopause scale were used to quantitatively assess well-being and attitudes towards menopause, respectively. The results showed no significant moderating effect of age on the relationship between attitudes towards menopause and well-being. However, this study has shown that education about menopause is crucial for women and their attitudes towards menopause. Therefore, society and the media must portray more realistic pictures of menopause and highlight its positive consequences. It is important to appropriately educate women about this major life challenge and provide them with information on where to seek help and support. Moreover, further studies are needed to assess the relationship of attitudes towards menopause with menopausal status rather than age.

Keywords: well-being, menopause, flourishing, women, age differences, attitudes

Introduction

Menopause is a stage experienced differently among ageing women. It naturally occurs in women between the ages of 45 to 55 years (Faubion et al., 2015; Laven et al., 2016; World Health Organization [WHO], 2022). Menopause is the loss of ovarian function followed by the cessation of menstruation (WHO, 2022). It is often recognised when a woman does not have a monthly period for 12 months without any other biological or physiological explanation (Mishra et al., 2003; Nusrat et al., 2008; WHO, 2022). Because of this, menopause is also called the change in a woman's development that signals the end of her reproductive years and the start of the ageing process (Nusrat et al., 2008). Menopause is caused by ineffective DNA repair that leads to the ageing of the soma, which appears to result in the failure to reproduce and the subsequent occurrence of natural menopause (Laven et al., 2016). Consequently, menopause is a natural stage in a woman's life that deserves understanding, support, and self-care.

Understanding, support, and self-care for and during menopause are especially needed because menopause may bring physical and psychological changes and difficulties. During menopause, women may experience many physical symptoms, including hot flashes, irregular menstruation, and dyspareunia (Groeneveld et al., 1993; WHO, 2022; Winterich & Umberson, 1999). Furthermore, the frequency and intensity of these symptoms seem interchangeably influenced by variables such as education, self-esteem, anxiety, and low serum oestrogen (Hunter & Rendall, 2007; Zhang et al., 2020). Apart from these variables, age significantly impacts psychological issues during menopause. Several studies have shown that for healthy middle-aged women, natural menopause had no adverse effects on their mental health (Busch et al., 2016; Dennerstein et al., 1994; Groeneveld et al., 1993; Lennon, 1982; Matthews et al., 1990). However, women who experience divergence from age norms concerning the start of natural menopause, with either an earlier or later onset, exhibit greater

symptoms of depression and psychological discomfort (Faubion et al., 2015; Lennon, 1982). Eventually, women may manage this transition more easily and comfortably if they know the different factors affecting menopausal symptoms.

Notwithstanding, menopause is typically not covered in formal education for women, and many general practitioners have limited training regarding managing menopause (Harper et al., 2022; WHO, 2022). Additionally, the media and the medical profession have frequently considered menopause a deficient disease and a negative experience during a woman's lifetime (Avis & McKinlay, 1991; Harper et al., 2022). In the same way, Winterich and Umberson (1999) and Deeks et al. (2008) highlighted that studies have portrayed menopause as a medical condition that fosters more unfavourable sentiments than framing it as a natural part of ageing or life change (e.g., Arseneau et al., 2021; Hickey et al., 2022). Despite the relevance of menopause, formal education on this subject is insufficient. As a result, women may have distorted attitudes concerning menopause, influencing how they view and prepare for this time of life. Therefore, it is important to conduct research that views menopause as a natural stage, focusing on the positive consequences of it.

Framing menopause more positively is especially important as menopausal attitudes seem to affect the severity of menopausal symptoms and the experience of menopause in general (Avis & McKinlay, 1991). An attitude is a person's feelings and assessment of an object or event (Bowles, 1986). Therefore, menopausal attitudes can be described as the assessment and stance towards menopause. To date, several studies found that women's attitudes towards menopause may be influenced by a variety of factors, such as menopausal status, social background, education, and (self-perceived) emotional and physical health (Avis & McKinlay, 1991; Ayers et al., 2010; Cate & Corbin, 1992; Nusrat et al., 2008). For example, knowledge about and preparation for menopause improve attitudes towards menopause (Liao & Hunter, 1998).

The fact that knowledge affects menopausal attitudes is further confirmed as women have more positive views on menopause after experiencing menopause themselves. A recent study by Dashti et al. (2021) found that postmenopausal women tend to have more positive attitudes than those in pre- or perimenopausal periods. These results are in line with prior studies in which most women – especially postmenopausal women – have neutral or positive attitudes towards menopause and do not view menopause as distressing as they initially thought (Avis & McKinlay, 1991; Groeneveld et al., 1993; Wilbur et al., 1995). Research supports this by showing a moderate decline in menopause concern as people age (Cate & Corbin, 1992; Lacy, 1986; Neugarten et al., 1936). This decline can be explained by the fact that the interpretation of events may change depending on the person's stage of life (Neugarten et al., 1936). Because a great number of physical changes frequently accompany menopause, younger women show more negative attitudes towards menopause than middle-aged women, who typically view menopause as a natural phenomenon with less concern about losing reproductive potential (Ayers et al., 2010; Neugarten et al., 1936). Thus, older women do not seem to view menopause as a crisis or a drastic event but as a natural period of progressive transformation. This demonstrates that age plays a significant role in attitudes towards menopause. Therefore, it is important to educate younger women about the symptoms of menopause and prepare and support them for the onset of their menopause.

Having negative attitudes towards menopause could influence the well-being of these young women. Easterlin (2006) found that well-being is the lowest in young women; it rises moderately from age 18 until midlife (around age 50) and slightly declines afterwards. Williams et al. (2013) suggested that the enhancement in women's self-reported mental health is due to their shifting expectations about their health as they age and their values reorientation in midlife that causes psychological improvements. Moreover, study results in the early nineties indicate that women with overall high well-being showed positive attitudes

towards menopause (Dennerstein et al., 1994; Groeneveld et al., 1993). This supports the theory that younger women have lower well-being caused by negative assessments of menopause and ageing. Generally, well-being is negatively correlated with psychosomatic and respiratory symptoms, past premenstrual complaints, and interpersonal stress (Dennerstein et al., 1994). Besides, it positively correlates with the present general health status and overall health evaluation (Dennerstein et al., 1994). These research results suggest that middle-aged women score higher on well-being caused by positive evaluations about these life stage challenges, such as menopause, despite the developmental challenges of ageing.

Whereas previous research has merely focused on emotional well-being, Keyes (2002) attempted to newly conceptualise well-being. He identified two other main components of positive mental health next to emotional well-being: social and psychological well-being (Keyes, 2002). According to this concept, an individual that scores high on all these components can be described as flourishing (Westerhof & Keyes, 2010). Therefore, flourishing people have high levels of well-being and are mentally healthy (Keyes, 2002). However, no research exists on the relationship between age, attitudes towards menopause, and his concept of well-being. Therefore, it is interesting to study whether age can be a moderator on the relationship between attitudes towards menopause and well-being by Keyes (2002) in middle-aged women. To illustrate, older women might score higher on well-being and have more positive attitudes towards menopause than younger women.

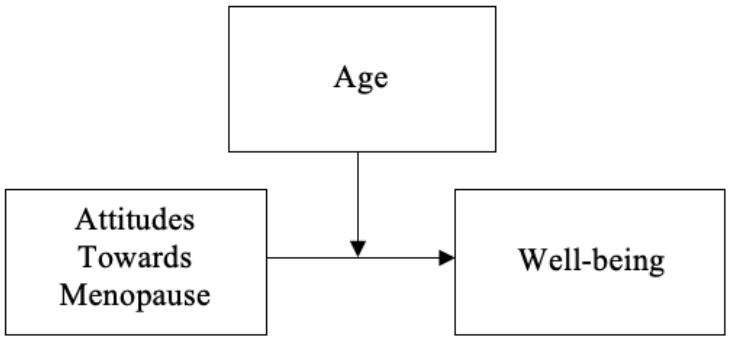
The Current Study

The current study aims to examine the attitudes towards menopause in middle-aged women. Thereby, the relationship between attitudes towards menopause and mental well-being in women aged 30 to 50 years old is investigated. The upper age limit is based on the results of Easterlin (2006), that found a peak in well-being around the age of 50. It is

hypothesised that women with more positive attitudes towards menopause have higher levels of well-being. In addition, it is expected that age moderates this relationship (see Figure 1). In particular, it is predicted that younger women have and describe more negative attitudes towards menopause and possess lower levels of mental well-being. In comparison older women with more positive attitudes toward menopause are expected to display higher levels of mental well-being.

Figure 1

Moderation Model of Age on Attitudes Towards Menopause and Well-Being



Methods

Study Design

A mixed methods design was used by collecting both qualitative and quantitative data to mitigate the disadvantages of the different methodologies. This study was approved by the Ethics Committee of the University of Twente from the Faculty of Behavioural, Management, and Social Sciences (BMS), Domain of Humanities and Social Sciences (HSS), nr. 230111.

Participants

In this study, 184 women aged 30 to 50 years were recruited, of which 95 were excluded because they either did not finish the questionnaire or had been identified as outliers. Outliers resembled participants that did not fit in the target population being studied,

as they did not fit in the age range. Other outliers were removed because they were assumed not to take participation seriously. This was based on the observation that they gave the same answer on all scales, did not answer the open question, and completed the questionnaire quickly. The final sample consisted of 89 participants. The mean age of the participants was 40.16 (*SD* = 6.3), ranging from 30 to 50, representing Dutch (n = 36), German (n = 29), and Polish (n = 24) nationalities. The mean number of children was 1.56 (*SD* = 1.2), ranging from 0 to 4. All socio-demographic data can be seen in Table 1.

Table 1

Socio-demographic Data of the Participants N = 89

	n	%
Nationality		
Dutch	36	40.5
German	29	32.5
Polish	24	27.0
Education level		
Elementary school graduate	14	15.7
Highschool graduate	20	22.5
Bachelor's degree	25	28.1
Master's degree	25	28.1
PhD degree	5	5.6
Job-status		
Full-time	45	50.6
Part-time	39	43.8
Currently unemployed	1	1.1
Prefer not to say	4	4.5
Having Children		
Yes	66	74.2
No	23	25.8

Note. Frequencies (n) and percentages (%) of the demographic data.

Procedure

The participants were recruited via WhatsApp, Instagram, Facebook, and LinkedIn using convenience and snowball sampling. Depending on their preferred language, they received the questionnaire in Dutch, German, Polish, or English. The recruitment message included inviting women interested in contributing to research about flourishing women. The questionnaire was completed on the platform Qualtrics (www.qualtrics.com). Before the questionnaire started, the women were provided with a welcome and instructions for the present study. After being informed about the purpose of the study and their rights, the participants had to consent before starting the questionnaire. First, the women filled out questions about their demographic data. Then the participants completed a questionnaire to assess their current well-being. For some participants, an open question about menopause and then a questionnaire to assess their current attitudes towards menopause followed. Other participants first completed the questionnaire to assess their current attitudes towards menopause and then answered the open question about menopause. At the end of this study, the participants were invited to provide their email addresses in case they would be interested in further studies about flourishing women. This email address has not been connected to the data of the participants. Because the whole questionnaire also included questions from other researchers in the Psychology Program of the University of Twente, the questionnaire took around 30 minutes to complete.

Materials

Open-Ended Question

One open question was asked in which the participants had the chance to elaborate on their attitudes and thoughts about menopause. For this, the participants could complete the sentence “Menopause is…” as often as they liked with a maximum of fifteen times. It was chosen to add a qualitative measure to obtain additional information on the thoughts and

opinions about menopause of the participants. This open question provides the opportunity to explain the concept of menopausal attitudes with a different and additional analytical method.

Attitudes Towards Menopause

The attitudes towards menopause were assessed using the Attitudes Towards Menopause (ATM) scale. This scale asks about general attitudes towards menopause instead of attitudes about one's menopause and is ideally measured before menopause occurs to provide evidence of causal influence (Ayers et al., 2010). This 35 items scale invented by Neugarten et al. (1963) consists of 16 positive items and 19 negative items. For the convenience of the participants, a subset of 7 items from the original questionnaire was used in this study, with four negative and three positive items (see Appendix A). The participants could rate the statements on a 4-point Likert scale from 1 (strongly agree) to 4 (strongly disagree). The scores on the negative items (Items 1, 2, 5, and 7) had to be reversed before the total scores could be calculated. Total scores range from 7 to 28 points, with higher scores indicating a more positive attitude towards menopause. Previous studies have found high internal reliability measures of the full ATM scale (Ali et al., 2020; Thapa & Yang, 2022). The Cronbach's alpha for the short ATM scale in the current study was low ($\alpha = .41$).

Well-Being

To assess the well-being of the participants, the 14-item Mental Health Continuum – Short Form (MHC-SF) by Keyes (2013) was used. The participants answered sentences like "During the past 4 weeks, how often did you feel…" with answers such as "Happy" (Item 1), "That people are basically good" (Item 7), and "That your life has a sense of direction or meaning to it" (Item 14). Besides overall well-being, the scale measures the subscales of emotional well-being (Items 1 to 3), social well-being (Items 4 to 8), and psychological well-being (Items 9 to 14). The participants could rate the items on a 6-Point Likert Scale from 0 (never) to 5 (almost always). Higher mean scores (0 – 5) indicated greater well-being. Lamers

et al. (2011) identified high internal reliability. This was validated by the results of the current study with a high Cronbach's alpha ($\alpha = .92$).

Data Analysis

The qualitative data from the participants has been translated from Dutch, German, and Polish into English by the respective researchers. The researcher analysed answers on the open question using thematic analysis with the help of the scientific software ATLAS.ti (Version 9.1.3 (2089)). Thematic analysis is used to find, analyse, and report patterns – also called themes – in a data set (Braun & Clarke, 2006). The specific themes were identified based on inductive coding. The codes *negative*, *positive*, and *neutral* were used to describe different attitudes towards menopause. These codes were mutually exclusive. Because the participants included answers on the problem of education about menopause, the code *lack of education* was added. This code was added to one of the attitude codes (negative, positive, or neutral) and was therefore not mutually exclusive from these codes. A fragment was defined as one out of the fifteen possible answers on *menopause is…* in the questionnaire. The qualitative data was then quantified by respectively summing the frequency of negative, neutral, positive, and lack of education codes used per person.

The quantitative data analyses were conducted using the statistical software RStudio (Version 2023.03.0+386) with a significance level $< .05$. First, the demographic data of the participants were analysed using descriptive statistics, i.e., mean, median, standard error, standard deviation, and variance. Then the data was tested for the parametric assumptions, i.e., linearity, normality, homogeneity of variance, and outliers. Because the assumptions were only met after adding the variable nationality, this variable was transformed into dummy variables for German and Polish, with the reference category being Dutch. In this way, this categorical variable could be added to the moderation model. Additionally, Bivariate Pearson coefficients were estimated for all qualitative themes and quantitative

variables. Next, the analysis of the moderation model could be investigated using the parametric multiple regression test. This was done by performing a simple moderator analysis, followed by estimating the simple slope estimates for the interaction effects between age, attitudes towards menopause, and well-being. Lastly, an interaction plot was created to visualise the moderation effect. Because the assumptions indicated that nationality plays a significant role in the moderation model, a simple moderator analysis in data sets of the different nationalities was done.

Results

Thoughts and Opinions Towards Menopause

The thematic analysis results on the answers to the open question on menopause are shown in Table 2 and Table 3. The participants gave 264 (M = 2.97, SD = 2.47) answers, ranging from 0 to 9. Most answers covered negative attitudes towards menopause (M = 1.7, 57.2%), ranging from 0 to 9 answers, followed by neutral attitudes or factual information about menopause (M = .83, 28.03%), ranging from 0 to 3 answers, and positive attitudes (M = .44, 14.77%), ranging from 0 to 3 answers. Answers on lack of education were covered least often (M = .19, 6.44%), ranging from 0 to 3 answers.

Negative answers mostly included negative consequences of menopause, such as the end of youth, symptoms such as hot flashes, or the inability to get pregnant. However, to cite some participants, a few indicated menopause as simply “annoying” or “unpleasant”. Positive attitudes included responses highlighting the freedom from their period or that menopause is a normal part of life. Some participants denoted it as “Happy” or “necessary”. Neutral attitudes reflected answers, including menopause as a phase of change or the physiological cessation of a menstrual cycle. Additionally, many participants indicated that they do not know much about menopause and that this topic is not discussed enough in society. Thereby,

the participants responded with statements such as “Still a bit taboo”, “an intense period that should receive more understanding”, or “no idea”.

Table 3 shows the number of answers based on the participants’ nationality and age. For the qualitative analysis, age has been manually categorised into low age (30 to 36 years), medium age (37 to 43 years), and high age (44 to 50 years). Similar to the answers from the entire data set, negative attitude answers were given most previously in all age and nationality categories, followed by neutral attitudes, positive attitudes, and educational comments.

Table 2

Codes for the Thematic Analysis for Attitudes Towards Menopause of the Open Question "Menopause is…"

Code	Explanation	Example Quote
Negative Attitudes	Data related to negative attitudes towards menopause, such as responses reflecting anxious and pessimistic perspectives on menopause, as well as answers referring to the challenges of menopause.	"*The onset of sickness and old age*"
Neutral Attitudes	Data related to neutral attitudes towards menopause reflect neither strongly positive nor strongly negative perspectives on menopause, but answers referring to factual information about menopause.	"*Physiological cessation of the menstrual cycle*"
Positive Attitudes	Data related to positive attitudes toward menopause, such as responses reflecting optimistic and hopeful perspectives on menopause and answers referring to the benefits associated with menopause.	"*It is no obstacle to continue enjoying life*"
Other		
Lack of Education	Data related to educational information and knowledge about menopause, such as responses that highlight the lack of knowledge in today's society about menopause.	"*Something you don't know much about because nobody talks about it*"

Table 3

Number of Answers given to the Open Question "Menopause is…" based on Nationality and Age (N = 264 Answers from 89 Participants)

Code	Nationality			Age			Total
	Dutch	German	Polish	30 – 36 years	37 – 43 years	44 – 50 years	N = 264 (%)
	N = 109 (%)	N = 102 (%)	N = 53 (%)	N = 109 (%)	N = 53 (%)	N = 102 (%)	
Negative Attitudes	62 (56.88%)	66 (64.71%)	23 (43.4%)	62 (56.88%)	26 (49.06%)	63 (61.76%)	151 (57.2%)
Neutral Attitudes	33 (30.28%)	24 (23.53%)	17 (32.08%)	30 (27.52%)	20 (37.74%)	24 (23.53%)	74 (28.03%)
Positive Attitudes	14 (12.84%)	12 (11.76%)	13 (24.53%)	17 (15.6%)	7 (13.21%)	15 (14.71%)	39 (14.77%)
Other (N = 19)							
Lack of Education	10 (9.17%)	4 (3.92%)	3 (5.66%)	5 (4.59%)	8 (15.09%)	4 (3.92%)	17 (6.44%)

Note. N = the number of answers given; Participants could answer this open question with a max. of 15 times.

Bivariate Relations

The Pearson correlation analysis of the qualitative attitudes towards menopause is shown in Table 4. A significant positive correlation was found between well-being and age, $r(87) = .22$, $p = .039$. In contrast, the negative correlations between age and attitude ($r(87) = -.13$, $p = . 216$) and well-being and attitude ($r(87) = -.03$, $p = .755$) were not significant. The correlation analysis of the well-being subscales with the moderation variables showed one significant correlation between social well-being and age ($r(87) = .28$, $p = .006$). Additionally, the correlation between lack of education and neutral from the qualitative analysis was statistically significant, $r(87) = .5$, $p < .001$. This can be explained by the fact that educational codes were often used when the code neutral was used.

Table 4

Pearson Correlation and Statistics for the Moderation Variables and Qualitative Analysis Codes

Variable	Mean	Median	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	40.16	40.00	6.29	–								
2. Attitude	17.40	18.00	2.90	-.13	–							
3. Well-being	3.20	3.36	.93	.22*	-.03	–						
4. Emotional Well-being	3.55	3.67	.97	.19	.08	.84***	–					
5. Social Well-being	2.63	2.80	1.12	.28**	-.07	.88***	.61***	–				
6. Psychological Well-being	3.50	3.67	1.02	.12	-.05	.92***	.75***	.66***	–			
7. Negative	1.70	1.00	1.88	-.03	-.11	-.05	-.04	.05	-.12	–		
8. Neutral	.83	.00	1.05	-.03	.12	.07	.08	.07	.05	.12	–	
9. Positive	.44	.00	.75	-.00	.20	-.02	-.02	.06	-.09	.08	.12	–

Note. * p < .05, ** p < .01, p < *** .001

The Moderating Role of Age

The moderation analysis showed no significant effects between attitudes towards menopause and well-being (b = -.18, z = -.84, p = .405), age and well-being (b = -.04, z = -.49, p = .625), and the interaction between attitudes towards menopause, age, and well-being (b = .00, z = .72, p = .476; see Table 5). For the quantitative analysis, age has been automatically categorised by R into mean age (40.2 years), + 1 SD (46.4 years), and – 1 SD (33.9 years) from mean age. In addition, based on the assumptions – linearity, normality, homogeneity of variance, and outliers – it was decided to add the variable nationality, with Dutch being the reference group and dummy variables for German and Polish, into the multiple regression model. Although there was a significant effect between German and well-being b = -.48, z = -2.10, p = .039, and Polish and well-being b = -1.06, z = -4.55, p < .001, the interaction effects were not significant, indicating that age and nationality did not moderate the relationship between attitudes towards menopause and well-being (see Figure 2).

Table 5

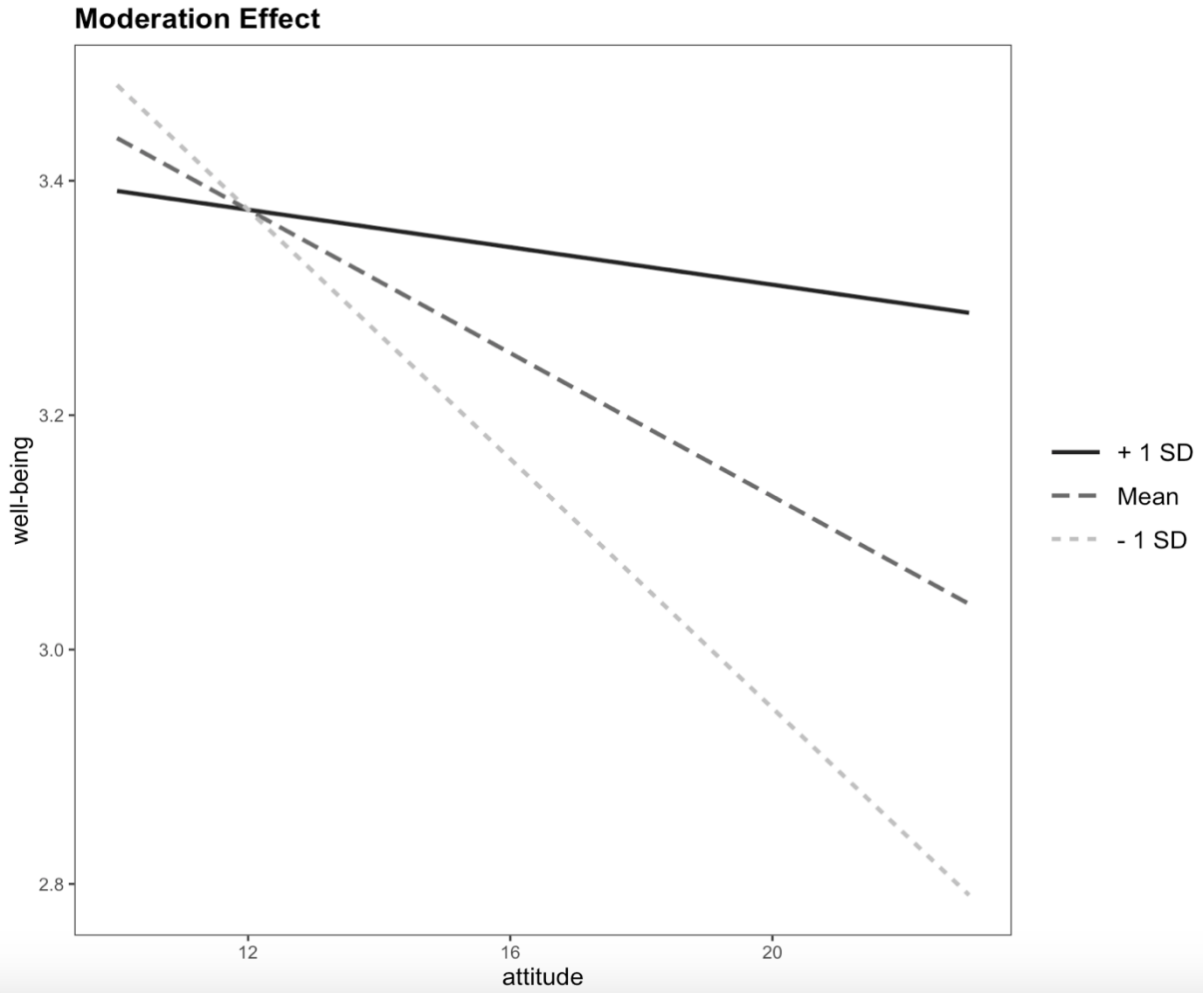
Moderation Estimates of the Moderation Analysis of Age on the Relationship Between Attitudes Towards Menopause and Well-Being from Qualitative and Quantitative Data

Effect	Estimate	SE	95% CI		Z	p
			LL	UL		
Intercept	5.96	3.66	-1.33	13.25	1.63	.108
German	-.48	.23	-.94	-.03	-2.10	.039
Polish	-1.06	.23	-1.52	-.59	-4.55	< .001
Negative Attitude	-0.06	.05	-.16	.04	-1.17	.245
Positive Attitude	.03	.12	-.21	.28	.28	.780
Neutral Attitude	.05	.09	-.12	.22	.57	.573
Attitude	-.18	.21	-.59	.24	-.84	.405
Age	-.04	.09	-.22	.13	-.49	.625
Attitude*Age	.00	.01	-.01	.01	.72	.476

Note. CI = confidence interval; LL = lower limit; UL = upper limit; German and Polish are dummy variables of the variable Nationality, with Dutch being the reference group; Variables Negative Attitude, Positive Attitude, and Neutral Attitude were derived from the qualitative analysis about attitudes towards menopause; Variable Attitude was derived from the quantitative analysis of the Attitudes Towards Menopause Scale.

Figure 2

Moderation Effect of Age on Attitudes Towards Menopause and Well-being



Note. Legend shows mean age (40.2 years), and + 1 SD (46.4 years) and – 1 SD (33.9 years) from mean age.

Based on the significant effect of the nationalities on well-being, it was decided to conduct a multiple regression analysis in distinct datasets of the nationalities Dutch, German, and Polish. None of the interactions between attitude towards menopause and age were statistically significant in the distinct datasets. From these results, it can be concluded that age has no significant moderation effect on the relationship between attitudes toward menopause and well-being in the different nationalities.

Discussion

In this study, the moderating role of age on the relationship between qualitative and quantitative attitudes towards menopause and mental well-being in women aged 30 to 50 years old was examined. It was hypothesised that younger women have and describe more negative attitudes towards menopause and have lower levels of mental well-being, whereas older women with more positive attitudes toward menopause have higher levels of mental well-being. The results indicated that in this sample, attitudes towards menopause were unrelated to well-being and age. However, the hypothesis that age and well-being are related could be confirmed. The correlation between age and well-being was positive, meaning that higher age is related to greater well-being in women. From the well-being subscales, especially social well-being was significantly related to age. In general, age did not moderate the relationship between well-being and attitudes towards menopause in the current study. Therefore, the expectation that older age would be related to more positive attitudes towards menopause and higher well-being could not be supported.

The mixed methods results revealed identical findings, indicating that women in the current sample tended to have negative menopausal attitudes regardless of their nationality or age. Answers to the open question towards menopausal attitudes were predominantly negative. Similarly, the quantitative data revealed that the participants had relatively negative attitudes towards menopause. Attitudes towards menopause are influenced by several factors, including menopausal status, social background, education, and mental as well as physical health (Avis & McKinlay, 1991; Ayers et al., 2010; Cate & Corbin, 1992; Nusrat et al., 2008). For example, Fjgueiras and Marteu (1995) discovered significant differences in attitudes towards menopause based on nationality (British and Portuguese) in their sample. In general, Liao et al. (1994) already highlighted in the early nineties that menopause is determined less favourably by society and the medical community than by the women

experiencing it (see also Deeks et al., 2008). Therefore, Hvas (2001) argued that to avoid contributing to the negative perception of menopause by women, practitioners who interact with menopausal women should be more conscious of the images they project about menopause. Focusing on the symptoms and negative consequences of menopause fosters a perception that rarely matches women's actual experiences (Hvas, 2001).

Moreover, the qualitative analysis of attitudes towards menopause showed a low mean of around three answers per person on the open question. Two possible reasons can explain this. First, the questionnaire part of this study was the second of three different parts. Before, participants had to complete one section belonging to a different study, including closed and open questions. This could have exhausted the participants' motivation to complete the questionnaire for the current study. The second reason could be the problem of education about menopause. Multiple participants mentioned that they do not know much about menopause and therefore did not have anything to say about it. Education about menopause is limited (Harper et al., 2022; WHO, 2022). However, the extent of knowledge about menopause obtained positively affects a woman’s attitude towards menopause (Gebretatyos et al., 2020). Therefore, education about menopause might enable women to make appropriate, careful, and more positive assessments of the advantages and disadvantages of menopause.

Furthermore, no relation has been found between attitudes towards menopause and well-being. Only a few studies investigated the relationship between menopausal attitudes and well-being. For example, Dennerstein et al. (1994) and Groeneveld et al. (1993) discovered a significant but weak correlation between these two variables. Both studies recruited a sample with a higher mean age of around 50 years and employed measures other than the ATM scale and the MHC-SF to examine the participants' attitudes towards menopause and well-being, respectively. Thereby, attitudes regarding menopause were

assessed using a combination of items from several scales and studies. In contrast to the current study, their reliability measures of the attitudes towards menopause were satisfactory ($\alpha = 0.78$ and $\alpha = 0.65$; Groeneveld et al., 1993). Groeneveld et al. (1993) used the Inventory of Subjective Health and the Sickness Impact Profile to assess well-being. Dennerstein et al. (1994) assessed psychological well-being using the Affectometer 2. Consequently, previous research has investigated the association between attitudes towards menopause using different concepts of well-being than the one utilised in this study by Keyes (2002). As a result, the non-significant results in this study could be explained due to the unreliability of the short ATM scale or the fact that attitudes towards menopause are unrelated to the concept of well-being as defined by Keyes (2002).

An explanation for the non-significant moderating role of age in this study could be that age is solely an indirect indicator of menopausal status. According to Dashti et al. (2021), age is not the influencing factor in attitudes towards menopause but merely the menopausal status that explains the change in the women's attitude. The participants in this study have not been asked about their menopausal status because an indirect assumption about their stage was made by their age. However, de Bruin et al. (2001) point out that a woman's age at the start of menopause considerably varies from 40 to 60 years. The most effective and currently accessible example of testing the menopausal stage is measuring the follicle-stimulating hormone (FSH) levels; however, these levels vary a lot during menopause and can be misleading (North American Menopause Society, n.d.). Another method of determining the menopausal stage can be made by symptom reporting by the participants. Nonetheless, the menopausal stage cannot be diagnosed by a simple test, yet (North American Menopause Society, n.d.). Conclusively, rather than a direct influence by age, menopausal status may explain how attitudes towards menopause develop in women. To investigate this effect, more reliable menopausal stage measurements must be examined.

Strengths and Limitations

Strengths of this study included using both qualitative and quantitative data that mitigate the disadvantages of the other. Quantitative data provides accurate and objective outcomes, whereas qualitative data can help to analyse further opinions, thoughts, and feelings. A further strength was the diverse sample recruited. The participants varied in their education, working situation, and nationality, making this study's results more generalisable. Additionally, regarding qualitative research, the sample size was relatively large. However, regarding quantitative research, the sample was relatively small, below 100 participants.

Next to these strengths, the present study also had various limitations, implying that the study's findings should be interpreted with caution. Particularly, the different questionnaires had several flaws. First, the different translations of the questionnaires and open questions for the participants can have introduced biases or differing interpretations based on the formulation. Second, the Cronbach Alpha for the short ATM scale was classified as low. That the items had no good internal consistency means that the short ATM scale was insufficient to measure the participants' attitudes towards menopause properly. For that reason, the outcomes of this study regarding the quantitatively measured attitudes towards menopause are unreliable. Lastly, the order of the qualitative and quantitative measures of attitudes towards menopause varied between the questionnaires. Some participants answered the open question on menopause first and then completed the ATM scale. Conversely, some participants completed the ATM scale first. Therefore, some participants could have had biased attitudes towards menopause based on their previous ATM scale answers, whereas others did not. This can also affect the reliability and validity of the results for the attitudes towards menopause of the participants.

Further important limitations concern the sample methods employed. Convenience sampling can enter motivation bias into the research, as the interest and motivation of the

chosen participants influence their engagement in the research (Stratton, 2021). A limitation of snowball sampling is that the selection of participants at the beginning of the sampling phase biases the selection of further participants and the entire sample (Etikan & Bala, 2017). Finally, because only one researcher conducted the thematic analysis of the qualitative data, there is no high inter-rater reliability of the codes.

Implications for Future Research

Attitudes towards menopause have not been shown to be related to age or well-being in the current study. To examine the causal relationship between attitudes towards menopause on age or well-being, longitudinal studies are needed. Specifically, because age has been shown to be an indirect indicator of menopausal status, studies should analyse menopausal status with the help of symptom reporting and hormonal tests to examine the relationship between attitudes towards menopause and pre-, peri-, and postmenopausal women. However, as these tests have limitations, it is also important to investigate more convenient and reliable methods on how to identify the menopausal stage of a woman. Similarly, future research should also focus on validating a shorter ATM scale by identifying a small set of items that reliably measure attitudes towards menopause. Moreover, more research is needed concerning disparities in attitudes towards menopause, representations of menopause, and symptoms experienced during menopause in different nationalities.

Another important implication for the future is education about menopause. This study has shown that women do not know much about this stage. Attention and information should be extended on how women can get help for menopausal symptoms. Because knowledge and preparation for menopause improve attitudes towards menopause (Liao & Hunter, 1998), research should not portray menopause as solely negative but provide women with more nuanced knowledge about symptoms, consequences, and backgrounds of menopause. For example, healthy exercise habits of women during menopause may improve

their physical and mental health (Slaven & Lee, 1994). Furthermore, educating husbands of menopausal women about menopause may improve the husband's commitment to support their wives (Mansfield et al., 2003).

Conclusion

The current mixed-methods study holds insights into attitudes towards menopause and well-being in middle-aged women. The moderation model of age influencing the relationship between attitudes towards menopause and well-being could not be supported. However, it has been shown that well-being did significantly increase with age in this sample. Moreover, it seems that age cannot be seen as an indirect measure of menopausal status; therefore, research should focus on the effects of menopausal status instead. As the participants in this study showed mostly negative attitudes towards menopause while also indicating a lack of knowledge about menopause, educating women about this challenging stage in their lives is crucial. Women should be able to make appropriate assessments about this major life event and should have sufficient knowledge on how to seek help and support.

References

Ali, A. M., Ahmed, A. H., & Smail, L. (2020). Psychological Climacteric Symptoms and Attitudes toward Menopause among Emirati Women. *International Journal of Environmental Research and Public Health*, *17*, 5028. https://doi.org/10.3390/ijerph17145028

Arseneau, M. E., Backonja, U., Litchman, M. L., Karimanfard, R., Sheng, X., & Taylor-Swanson, L. (2021). #Menopause on Instagram: a mixed-methods study. *Menopause*, *28*(4), 391–399. https://doi.org/10.1097/GME.0000000000001713

Avis, N. E., & McKinlay, S. M. (1991). A longitudinal analysis of women's attitudes toward the menopause: results from the Massachusetts Women's Health Study. *Maturitas*, *13*(1), 65–79. https://doi.org/10.1016/0378-5122(91)90286-y

Ayers, B., Forshaw, M., & Hunter, M. S. (2010). The impact of attitudes towards the menopause on women's symptom experience: A systematic review. *Maturitas*, *65*(1), 28–36. https://doi.org/10.1016/j.maturitas.2009.10.016

Bowles, C. L. (1986). Measure of attitude toward menopause using the semantic differential model. *Nursing Research*, *35*(2), 81–85. Retrieved February 17th, 2023, from https://pubmed.ncbi.nlm.nih.gov/3633510/

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

de Bruin, J. P., Bovenhuis, H., van Noord, P. A. H., Pearson, P. L., van Arendonk, J. A. M., te Velde, E. R., Kuurman, W. W., & Dorland, M. (2001). The role of genetic factors in

age at natural menopause. *Human Reproduction*, *16*(9), 2014–2018. https://doi.org/10.1093/humrep/16.9.2014

Busch, C. M., Zonderman, A. B., & Costa, P. T. (2016). Menopausal Transition and Psychological Distress in a Nationally Representative Sample: Is Menopause Associated with Psychological Distress? *Journal of Aging and Health*, *6*(2). https://doi.org/10.1177/089826439400600205

Cate, M. A., & Corbin, D. E. (1992). Age Differences in Knowledge and Attitudes Toward Menopause. *Journal of Women & Aging*, *4*(2), 33–46. https://doi.org/10.1300/J074v04n02_04

Dashti, S., Bahri, N., Fathi Najafi, T., Amiridelui, M., & Latifnejad Roudsari, R. (2021). Influencing factors on women's attitudes toward menopause: a systematic review. *Menopause*, *28*(10), 1192–1200. https://doi.org/10.1097/GME.0000000000001833

Deeks, A., Zoungas, S., & Teede, H. (2008). Risk perception in women a focus on menopause. *Menopause*, *15*(2), 304–309. https://doi.org/10.1097/gme.0b013e31812f7b65

Dennerstein, L., Smith, A. M. A., & Morse, C. (1994). Psychological well-being, mid-life and the menopause. *Maturitas*, *20*(1), 1–11. https://doi.org/10.1016/0378-5122(94)90095-7

Easterlin, R. A. (2006). Life cycle happiness and its sources: Intersections of psychology, economics, and demography. *Journal of Economic Psychology*, *27*(4), 463–482. https://doi.org/10.1016/j.joep.2006.05.002

Etikan, I., & Bala, K. (2017). Sampling and Sampling Methods. *Biometrics & Biostatistics International Journal*, *5*(6). https://doi.org/10.15406/bbij.2017.05.00149

Faubion, S. S., Kuhle, C. L., Shuster, L. T., & Rocca, W. A. (2015). Long-term health consequences of premature or early menopause and considerations for management. *Climacteric*, *18*(4), 483–491. https://doi.org/10.3109/13697137.2015.1020484

Fjgueiras, M. J., & Marteu, T. M. (1995). Experiences of the menopause: A comparison between Portugal and the UK. *Journal of Reproductive and Infant Psychology*, *13*(2), 93–100. https://doi.org/10.1080/02646839508403239

Gebretatyos, H., Ghirmai, L., Amanuel, S., Gebreyohannes, G., Tsighe, Z., & Tesfamariam, E. H. (2020). Effect of health education on knowledge and attitude of menopause among middle-age teachers. *BMC Women's Health Volume*, *20*(232). https://doi.org/10.1186/s12905-020-01095-2

Groeneveld, F. P. M. J., Bareman, F. P., Barentsen, R., Dokter, H. J., Drogendijk, A. C., & Hoes, A. W. (1993). Relationships between attitude towards menopause, well-being and medical attention among women aged 45–60 years. *Maturitas*, *17*(2), 77–88. https://doi.org/10.1016/0378-5122(93)90003-Z

Harper, J. C., Phillips, S., Biswakarma, R., Yasmin, E., Saridogan, E., Radhakrishnan, S., Davies, M. C., & Talaulikar, V. (2022). An online survey of perimenopausal women to determine their attitudes and knowledge of the menopause. *Women's Health*, *18*, 1–18. https://doi.org/10.1177/17455057221106890

Hickey, M., Hunter, M. S., Santoro, N., & Ussher, J. (2022). Normalising menopause. *BMJ*, 377. https://doi.org/10.1136/bmj-2021-069369

Hunter, M., & Rendall, M. (2007). Bio-psycho-socio-cultural perspectives on menopause. *Best Practice & Research Clinical Obstetrics & Gynaecology*, *21*(2), 261–274. https://doi.org/10.1016/j.bpobgyn.2006.11.001

Hvas, L. (2001). Positive aspects of menopause: A qualitative study. *Maturitas*, *39*(1), 1–17. https://doi.org/10.1016/S0378-5122(01)00184-0

Keyes, C. L. M. (2002). No The Mental Health Continuum: From Languishing to Flourishing in Life. *Journal of Health and Social Behavior*, *43*(2), 207–222. https://doi.org/10.2307/3090197

Keyes, C. L. M. (2013). *Mental well-being: International contributions to the study of positive mental health*. Dordrecht: Springer. https://doi.org/10.1007/978-94-007-5195-8

Lacy, P. A. (1986). *The impact of selected experiences on women during mid-life transition: a retrospective study* [Oregon State University]. Retrieved February 16th, 2023, from https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/2r36v102s

Lamers, S. M. A., Westerhof, G. J., Bohlmeijer, E. T., Klooster, P. M. ten, & Keyes, C. L. M. (2011). Evaluating the Psychometric Properties of the Mental Health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology*, *67*(1), 99–110. https://doi.org/10.1002/jclp.20741

Laven, J. S. E., Visser, J. A., Uitterlinden, A. G., Vermeij, W. P., & Hoeijmakers, J. H. J. (2016). Menopause: Genome stability as new paradigm. *Maturitas*, *92*, 15–23. https://doi.org/10.1016/j.maturitas.2016.07.006

Lennon, M. C. (1982). The Psychological Consequences of Menopause: The Importance of Timing of a Life Stage Event. *Journal of Health and Social Behavior*, *23*(4), 353–366. https://doi.org/10.2307/2136493

Liao, K. L. M., & Hunter, M. S. (1998). Preparation for menopause: prospective evaluation of a health education intervention for mid-aged women. *Maturitas*, *29*(3), 215–224. https://doi.org/10.1016/S0378-5122(98)00033-4

Liao, K. L. M., Hunter, M. S., & White, P. (1994). Beliefs about Menopause of General Practitioners and Mid-aged Women. *Family Practice*, *11*(4), 408–412. https://doi.org/10.1093/fampra/11.4.408

Mansfield, P. K., Koch, P. B., & Gierach, G. (2003). Husbands' Support of Their Perimenopausal Wives. *Women & Health*, *38*(3), 97–112. https://doi.org/10.1300/J013v38n03_07

Matthews, K. A., Wing, R. R., Kuller, L. H., Meilahn, E. N., Kelsey, S. F., Costello, E. J., & Caggiula, A. W. (1990). Influences of Natural Menopause on Psychological Characteristics and Symptoms of Middle-Aged Healthy Women. *Journal of Consulting and Clinical Psychology*, *58*(3), 345–351. https://doi.org/10.1037/0022-006X.58.3.345

Mishra, G. D., Brown, W. J., & Dobson, A. J. (2003). Physical and mental health: Changes during menopause transition. *Quality of Life Research*, *12*(4), 405–412. https://doi.org/10.1023/a:1023421128141

Neugarten, B. L., Wood, V., Kraines, R. J., & Loomis, B. (1963). Women's Attitudes Toward the Menopause. *Vita Humana*, *6*(3), 140–151. https://doi.org/10.1159/000269714

North American Menopause Society (n.d.). *How Do I Know When I'm in Menopause?*. Retrieved June 6, 2023, from https://www.menopause.org/for-women/menopauseflashes/menopause-symptoms-and-treatments/how-do-i-know-when-i%27m-in-menopause-

Nusrat, N., Nishat, Z., Gulfareen, H., Aftab, M., & Asia, N. (2008). Knowledge, Attitude and Experience of Menopause. *J Ayub Med Coll Abbottabad*, *20*(1), 56–59. Retrieved February 16th, 2023, from https://pubmed.ncbi.nlm.nih.gov/19024187/

Slaven, L., & Lee, C. (1994). Psychological effects of exercise among adult women: The impact of menopausal status. *Psychology & Health*, *9*(4), 297–303. https://doi.org/10.1080/08870449408407488

Stratton, S. J. (2021). Population Research: Convenience Sampling Strategies. *Prehospital and Disaster Medicine*, *36*(4), 373–374. https://doi.org/10.1017/S1049023X21000649

Thapa, R., & Yang, Y. (2022). Attitude Toward and Associating Factors of Menopause: A Study on Cambodian Women. *SAGE Open*, *12*(4). https://doi.org/10.1177/21582440221129256

Westerhof, G. J., & Keyes, C. L. M. (2010). Mental Illness and Mental Health: The Two Continua Model Across the Lifespan. *Journal of Adult Development*, *17*, 110–119. https://doi.org/10.1007/s10804-009-9082-y

Wilbur, J., Miller, A., Montgomery, A., & Features Submission, H. C. (1995). The Influence of Demographic Characteristics, Menopausal Status, and Symptoms on Women's Attitudes Toward Menopause. *Women & Health*, *23*(3), 19–39. https://doi.org/10.1300/J013v23n03_02

Williams, J. S., Cunich, M., & Byles, J. (2013). The impact of socioeconomic status on changes in the general and mental health of women over time: evidence from a longitudinal study of Australian women. *International Journal for Equity in Health Volume*, *12*(25). https://doi.org/10.1186/1475-9276-12-25

Winterich, J. A., & Umberson, D. (1999). How Women Experience Menopause: The Importance of Social Context. *Journal of Women & Aging*, *11*(4), 57–73. https://doi.org/10.1300/J074v11n04_05

World Health Organization (WHO). (2022). *Menopause*. Retrieved March 8, 2023, from https://www.who.int/news-room/fact-sheets/detail/menopause

Zhang, L., Ruan, X., Cui, Y., Gu, M., & Mueck, A. O. (2020). Menopausal Symptoms and Associated Social and Environmental Factors in Midlife Chinese Women. *Clinical Interventions in Aging*, *15*, 2195–2208. https://doi.org/10.2147/CIA.S278976

Appendix A

Item Selection of the Attention Towards Menopause (ATM) Scale

Item 1:

Menopause is an unpleasant experience for a women

Item 2:

Women who have trouble with the menopause are usually those who have nothing to do with their time

Item 3:

A woman's body may change in menopause, but otherwise she doesn't change much

Item 4:

Life is more interesting for a woman after the menopause

Item 5:

After the change of life, women often don't consider themselves "real women" anymore

Item 6:

Many women think menopause is the best thing that ever happened to them

Item 7:

In truth, just about every woman is depressed about the change of life

Note. Bold Items are negative measures and need to be reversed.