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# Impact of Menopause on Quality of Life in Community-based Women in China: 1 Year Follow-up\*\*,\*\*

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#### ABSTRACT

Quality of life (QOL) throughout menopause has become an outcome variable requiring measurement in clinical care. Staff nurses can provide earlier nursing during the menopausal transition (MT) stage. The purpose of this study was to describe the changes of QOL in different stages of the MT according to The Stages of Reproductive Aging Workshop (STRAW) in Chinese women in community settings. Prospective longitudinal study design was used to analyze QOL of 327 community women age 30–65 years old. They were followed up at 1-year. An instrument including the Chinese version of the Menopause-Specific Quality of Life Questionnaire was used to obtain data. A gradual decline in QOL was seen from premenopausal to menopausal transition (MT) and in postmenopausal women. Significant differences were observed in vasomotor, physical and sexual scores at baseline and follow-up (P < 0.05). Significant differences in vasomotor scores were observed between baseline and follow-up for women in the premenopausal and Late MT stages (P < 0.05). There were significant differences in psychosocial and physical scores between baseline and follow-up in the Late MT stage (P < 0.05). Menopause might have a negative impact on QOL independent of age in community-based women in China. There seemed to be a potential model of the relationship of menopause status to change in QOL, but this needs supporting evidence from longer longitudinal studies.

## Background and significant

Although the menopausal transition (MT) is a normal physiological process, changes in ovarian function across the transition are accompanied by climacteric symptoms (Burger, 1999), increased risk of cardiovascular disease (Muka et al., 2016), and osteoporosis (Lindsay, 2003). More than 80% of women experience physical or psychological symptoms in the years approaching menopause with various degrees of distress and disruption to their lives (Whelan et al., 2005), leading to a decrease in quality of life (QOL).

50% to 80% of women complain about menopausal symptoms such as hot flashes, night sweats, sleep disturbances, tiredness, and depression. They are the principal determinants of a reduced health-related quality of life (HRQOL), which is detectable soon after the onset of menopause (Jenabi, Shobeiri, Hazavehei, & Roshanaei, 2015). The

World Health Organization (WHO) defines QOL as "an individual's perception of their position in life, in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards, and concerns" (Hilditch et al., 2008). QOL is a multidimensional concept that has been used in different fields of knowledge including sociology, occupational functioning, politics, marketing, climate, and health care. Menopause-related symptoms have a negative impact on the QOL of perimenopausal women (G K P & Arounassalame, 2013).

QOL throughout and beyond menopause has become an outcome variable requiring measurement in clinical care or pivotal regulatory trial research. Compared with developed countries, there are relatively fewer studies examining menopausal QOL in developing countries in Asia. Moreover, Asian countries differ from each other politically, economically and socially, as well as in the organization of their

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healthcare systems. As a result, the findings reported in studies from Asia show some heterogeneity (Punyahotra, Dennerstein, & Lehert, 1997). When assessing QOL for some specific physical condition, a QOL instrument specific for it should be used. With regard to the assessment of menopause-related complaints, the menopausal index of Kupperman remains widely used, but it has been criticized for its scoring system, inappropriate items to validate menopause-related symptoms, and lack of demographic data. Moreover, it is usually applied by physicians to evaluate the symptomatology and effectiveness of various treatments. Therefore, it is not suitable for use in studies of the general population.

The menopause-specific quality of life questionnaire (MENQOL) was developed in 1996 by a group of researchers from Canada, and is based on 88 women age 47–62 years old and 2–7 years beyond menopause. It has the benefit of being a self-administered tool for assessment of climacteric complaints with convenient application, containing four domains: vasomotor, psychosocial, physical and sexual. MENQOL has been used in Europe (Davis et al., 2004; Dodin et al., 2005; Goss et al., 2003) and some developing countries (Peeyananjarassri et al., 2006). Little information about its application in China can be obtained. Although the Pan-Asia Menopause Study, applying the MENQOL, analyzed the QOL of women including 249 postmenopausal Chinese from clinical study centers (Limpaphayom et al., 2006), it might not reflect information from the general population in China.

The analytic strategies in available studies typically compared premenopausal women with women of other menopause status taken separately, and usually these studies did not question further changes after the cessation of menses. It is not clear whether the transition from peri- to post-menopause is associated with further deterioration, additional deterioration, or improvement in QOL. The Stages of Reproductive Aging Workshop (STRAW) was the first to define the subtle changes in menstrual cycle characteristics that are important early makers of MT. STRAW proposed that reproductive life could be divided into seven stages from menarche to postmenopause (Soules, Sherman, & Parrott, 2001). In the STRAW staging system, reproductive life was divided into three reproductive stages (early-, peak- and late reproductive), two transition stages (early and late transition), and two postmenopausal stages (early and late). The objective of the present study is to describe the changes on QOL in different stages of the menopausal transition according to the STRAW staging system in Chinese community dwelling women using the MENQOL.

# Methods and participants

# Design

This study employed a prospective longitudinal study design. Follow-up from baseline occurred at 1-year.

#### Sample

Women at baseline. The study was conducted from September 2014 to June 2015. Healthy women age 30–65 years, residing in a community in Harbin, China, for at least six months were enrolled. The participants were recruited through flyers and bulletin board postings and residency lists from the community's residency committee. Each woman received directions from trained staff and completed an instrument containing; (1) a form requesting information on age, marital status, smoking status, socio-economic level, medical history, drug intake, physical activity, and life style, and (2) the Chinese version of the MENQOL. Written informed consent was obtained from all women. The Ethical Committee of Peking Union Medical College Hospital (PUMCH) approved the study.

There were 1553 women between 30 and 54 years old who lived in the general community. According the inclusion and exclusion criteria, 368 women were enrolled by convenience sampling in the study. Inclusion criteria included women who reported regular menstrual cycles (defined as every 21–35 days) at 20–30 years of age, with an

Table 1
Characteristics of age and body mass index based on STRAW (N = 327).

	Pre	Early- MT	Late- MT	Early- post	Late- post	F	*P
Age (years)/ mean (SD)	42.47 (4.61)	45.74 (3.81)	49.59 (2.99)	52.82 (2.59)	57.18 (2.72)	179.97	< 0.001
BMI (kg/ m²)/ mean (SD)	23.72 (2.85)	23.91 (2.51)	25.21 (2.03)	25.18 (2.65)	24.90 (2.70)	4.56	0.001

BMI: body mass index; \*P: derived using one-way analysis of variance.

intact uterus, and one or both ovaries. Women were excluded if they suffered from a serious illness that may affect menstrual and hormonal status (such as diabetes, liver disease, or cancer), if they were pregnant, lactating, or taking any hormones in the past six months. Women were asked to keep prospective menstrual calendars monthly which were reviewed every three months. Height, weight, body mass index [BMI, calculated as weight divided by height squared  $(kg/m^2)$ ], and blood pressure were obtained.

Women at follow-up. Age, medical history, and medication use were ascertained by self-report after one year as well as the same clinical measures that were completed at baseline. The Chinese version of the MENQOL was used by the women participating in the baseline research. Almost 89% of women completed all follow-up measures at 1-year. Reasons for incomplete data included: missing data (n = 33), pregnancy (n = 3), receipt of hormone therapy (n = 3), surgical menopause (n = 1), and iatrogenic ablation of ovarian function (n = 1).

## Study measure

# MENQOL and its application in the study

The original MENQOL was developed in 1996 by a group of researchers from Canada and consists of four domains and 29 items: vasomotor (three items: hot flushes, night sweats, and sweating), psychosocial (seven items: dissatisfied with personal life, feeling anxious or nervous, poor memory, accomplishing less than I used to, feeling depressed or down or blue, being impatient with other people, and the feeling of wanting to be alone), physical (16 items: flatulence or gas pain, aching muscles and joints, feeling tired or worn out, difficulty sleeping, aches in the back of the neck or head, decrease in physical strength, decrease in stamina, feeling a lack of energy, dry skin, weight gain, increased facial hair, changes in appearance or texture or tone of skin, feeling bloated, lower back ache, frequent urination, and involuntary urination when laughing or coughing), and sexual (three items: changes in sexual desire, vaginal dryness during intercourse, and avoiding intimacy). All items followed the same format, in which the woman is asked whether she has experienced the item in the previous week. The questionnaire is scored as 1 for no, 2 for yes but not bothered, through 8 for yes and extremely bothered. The domain score is the mean of the converted item scores for that domain and ranges from 1 to 8. The higher the score, the worse the QOL is considered to be. The Chinese version of MENQOL, which consists of 27 items (deleting the 16th item, decrease in physical strength [similar to the 18th item, feeling a lack of energy] and the 21st item, increase in facial hair [rarely seen in Chinese women]), has been validated (Yang, Cheng, Wang, Wen, & Zhang, 2005). Cronbach alpha reliabilities across studies have ranged from 0.86 to 0.89 (Ying, Shou-qing, Yang, Hong-lian, & Zheng-lai, 2007).

#### Menstrual cycle

Menstrual cycles were collected by the menstrual calendars which

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