

Menopausal women: perceiving continuous power through the experience of regular exercise

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Background. Menopausal women are at high risk for cardiovascular diseases and osteoporosis. However, for so long, women have devoted much of their time and energy to family, children, and work such that they could not regularly exercise. There are few studies addressing the experiences of Taiwanese women who regularly exercise.

Objectives. The aim of this study was to explore the experiences of regularly exercising, defined as thoughts or actions by menopausal women who did not regularly exercise before menopause, but who now exercise regularly.

Design. A grounded theory research design was used.

Methods. In-depth interviews were undertaken with a purposive sampling of 12 menopausal women who began to do regular exercises after menopause and who have continued exercising for more than 6 months. The constant comparative method was used to analyse the interview data.

Results. 'Perceiving Continuous Power' was the core category during the process of regularly exercising. Every participating woman perceived that her body and mind were filled with continuous power including the subcategories of 'Overcoming the initial discomfort', 'Experiencing Benefits to Body and Mind' and 'Broadening' during the process. 'Awareness of Health Crisis', which included the subcategories of 'Cureless Chronic Disease', 'Mood Swings', and 'Conflict on Medication', was identified as occurring when these women first began regularly exercising. Throughout the process of perceiving continuous power, women experienced the following interactive behaviour categories: 'Exercise Selection' with subcategories of 'Self-Evaluation', 'Seeking and Fitting', 'Comparing' and 'Health Becoming' with the subcategories of 'Releasing Health Crisis', 'Regaining Flowering Life', and 'Self-Fulfilling'.

Conclusions. Regular exercises provided continuous power for menopausal women. **Relevance to clinical practice.** The experiences with exercise we uncovered in this study can provide a reference for nurses to guide menopausal women with their regular exercise plans.

Key words: grounded theory, menopausal women, regular exercise

Introduction

Menopausal women are at high risk for cardiovascular diseases (Chow *et al.*, 1997; Stevenson *et al.*, 1997). In addition, menopausal women lose about 1% of their bone mass every year, which can reach 3–10% during the first 5–10 years after menopause (Horowitz *et al.*, 1991). She *et al.* (1998) pointed out that menopausal women lose about 2–3% of bone mass annually in the first 4 years, and then continue to lose about 1–2% every year. When they are 80, they will have lost half of their bone density. Therefore, menopausal women are severely threatened by osteoporosis. Previous qualitative studies showed that ‘living with changing health’ and ‘relieving discomforts’ were the issues of greatest concern to perimenopausal women (Tsao, 1998, 2002).

Recently, several articles published in the *Journal of American Medical Association* (2002) about the heart and estrogen/progestin replacement study concluded that additional evidence is needed concerning the effects of hormone replacement therapy (HRT) on heart disease prevention (Grady *et al.*, 2002; Hulley *et al.*, 2002; Petitti, 2002). Some studies demonstrated that regular exercise can improve menopausal signs and symptoms, prevent and suppress some chronic diseases like cardiovascular disease and osteoporosis, and enhance psychological health (Brehm & Iannotta, 1998; Cass & Runowicz, 1998; Wong & Wong, 1999; Iwamoto *et al.*, 2001; Kelley *et al.*, 2001). Regular exercise has been highly promoted and recognized as the best non-medical treatment for postmenopausal problems (Cass & Runowicz, 1998). Menopausal women not only have a high risk of cardiovascular diseases, they are also in danger of bone density loss or osteoporosis. Therefore, it is crucial for menopausal women to exercise regularly.

In Taiwan, the average age of menopause is around 49 years, while the mean life span for women is 78 years (Administration Yuen, Health Department, 2001). That is to say, in Taiwan, women spend a third of their lifespan after menopause. However, as women generally devote much of their time and energy to their family and children as well as other work, they find it difficult to exercise regularly. There

have been no studies addressing the experiences of Taiwanese women who exercise regularly. Therefore, the main purpose of this study was to establish a descriptive theory to explore the perceptions, meanings and process of regular exercise for menopausal women. We hope the study outcome can serve as a reference for creating regular exercise plans for menopausal women.

Method

This study was conducted based on grounded theory. Grounded theory focuses on grasping participants’ viewpoints to understand interaction, process and social change (Strauss, 1993). Based on symbolic interactionism, it is concerned with the meaning of events or perceived reality and the ways in which people act in relation to the significance or meaning of those events (Chenitz & Swanson, 1986). In addition, grounded theory is used to develop substantive theory when little is known about the topic (Strauss & Corbin, 1990). In Taiwan, there is little research about menopausal women doing regular exercise. The grounded theory research design was used to analyse the meanings and perceptions of these women’s experiences of doing regular exercise to understand the process of developing regular exercises as their health promotion life styles during their menopausal period. The grounded theory design helped to generate a descriptive model that can be used by clinicians as a good reference to empower menopausal women building their healthy life.

Sample

Purposeful sampling was used based on the following criteria: (i) they had undergone menopause for more than 1 year but less than 5 years; (ii) they had not regularly exercised before menopause, but now exercised regularly and had done so for more than 6 months; (iii) they had no muscle or bone diseases that restrained their activities; and (iv) they were willing to share their exercise experiences and agreed to have the interview, tape-recorded. Data collection began in January 2001 and was completed in June 2002, when data saturation was considered to be achieved.

Sample characteristics

The mean age of participant women was 54 years, and the average age of menopause was 50.7 years. Seven had graduated from elementary school, two from junior high school, two from senior high school, and one from college. Four were career women, and eight were housewives. The participating women exercised daily and engaged in about two to three different kinds of exercise such as yuen-chi dancing (one kind of traditional Chinese dancing), swimming, hiking, aerobic dancing and yoga.

Ethical aspects

Permission for this study was obtained from the Research Committee at the Taipei Medical University. Before the interview the participating women provided both oral and written consent, were informed about the aims of the study, how data would be analysed and were assured of complete confidentiality. The convenience and privacy of the setting were considered for the sake of the interviewees. Basically the investigator chose the women's homes and interviewed them without involving their families.

Data collection and analysis

In-depth interviews were conducted according to interview guidelines designed to suit the study purposes and in congruence with the relevant literature. The interview included such questions as:

- 1 Why did you begin to exercise?
- 2 What kind of exercise did you choose?
- 3 Did you change to other kinds of exercise? Why?
- 4 What were your feelings when you first began to exercise? And then why did you continue exercising.
- 5 How did you adjust your life in order to exercise regularly?
- 6 What do you feel and think when you finish your regular exercise?
- 7 What are your comments about regular exercise for menopausal women?

During the interview process, interviewees were encouraged to express their experiences and feelings freely. The investigator tried not to interrupt when an interviewee was freely talking, but sometimes asked for clarification or confirmation, or drew an interviewee's attention back to the topic of regular exercise if she had gone astray. If an interviewee's answers were short, the investigator used non-invasive, encouraging, questioning technique to further encourage her, saying 'You mean?' 'You were saying?' or 'Why?' so as to generate more data. Interviews were

audiotaped as agreed by the participants. The investigator summarized interviewees' non-verbal behaviours, such as facial expressions, tone of voice and reactions from what was recorded live and what was observed during the face-to-face interview. The interview was scheduled to last for about an hour, but was adjusted according to some special situations. In keeping with grounded theory, changes were incorporated into the interviews as theory emerged from the data; some questions were added to the follow-up interview. The second interview was conducted at the time of the follow-up appointment approximately 2 months after the initial interview; it focused on the process of developing regular exercises for women. Interviews were continued until the data were saturated and dense. If there were any questions during the data analysis, the investigator would clarify them with the subject by asking for a second interview.

The constant comparative method was used to analyse content from both the typed transcripts and field notes (Strauss & Corbin, 1990). The investigator completed listening to the recorded contents of the audiotape within 72 hours of the interview. The researcher and peer reviewers read and analysed each line, phrase, sentence and paragraph from the transcribed interview, and made notes of general patterns, codes, similarities and differences among subjects. The peer reviewers included researchers who specialized in exercise, qualitative research and clinical nursing. Constant comparative method was used for data analysis as follows:

- 1 *Opening coding*: In total a 147-page interview record was transcribed. The researchers initially reviewed each interview transcripts to get a sense of participating women regarding regular exercise experiences. The researchers then reviewed them again and laid out primary subcategories related to doing regular exercises.
- 2 *Axial coding*: All subcategories were classified, analysed, compared and then linked properly and categorized.
- 3 *Determining the initial diagram*: After sorting all subcategories, the researchers generated an initial diagram to explain the relationship among categories. All different categories were named and given operational definitions.
- 4 New interview data were continuously and repeatedly added to the database until the characteristics of the data became saturated and stable, and then finalized categories were defined. Finally, based on the finalized categories, common themes were elucidated among these categories.

Four criteria were applied to evaluate the rigor of the study and to establish trustworthiness: (i) credibility, (ii) transferability, (iii) dependability, and (iv) confirmability (Guba & Lincoln, 1994). Open-ended interviews were used to verify participants' responses, and participants were asked to

validate findings to establish credibility. Use of few controlling conditions, variations in sampling and analysis of a large volume of qualitative data established transferability. Dependability was validated using a peer review coding process and by constantly re-coding the transcripts. Confirmability was established through a detailed review and critique of the data and by recruiting women who were willing to share their experiences.

Findings

Theoretical framework

A theoretical framework was generated in the study (Fig. 1). 'Perceiving continuous power' was the core category identified during the process of regular exercise. Every participating woman perceived that her body and mind were empowered with continuous power under the subcategories of 'Overcoming the initial discomfort', 'Experiencing benefits to body and mind', and 'Broadening' during this process. 'Awareness of health crisis', which included the subcategories of 'Incurable chronic disease', 'Mood swings', and 'Conflicts about medications', was identified when the women began regularly exercising. Throughout the process of 'Perceiving continuous power', women experienced the following interactive behaviour categories: 'Exercise selection' with the subcategories of 'Self-evaluation', 'Seeking and fitting', and 'Comparing'; 'Health becoming' with the subcategories of 'Resolving health crisis', 'Regaining flowering life', and 'Self-fulfilling'.

Perceiving continuous power

'Perceiving continuous power' referred to women empowering themselves during the process of doing regular exercises. When women began exercising, they reported 'Overcoming the initial discomfort', 'Experiencing benefits to body and mind

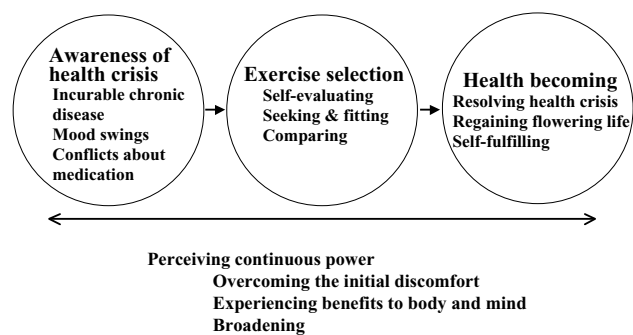


Figure 1 Theoretical framework of perceiving continuous power during regular exercise among menopausal women.

mind', and 'Broadening'. When they began exercising, they endured the initial discomfort accompanying the exercise and overcame it and continued exercising regularly. After exercising regularly for a while, they began to enjoy the physical and mental comfort, enhancement of their physical strength, relief of physical pain, achievement of learning exercises, and increased affection between them and their spouses. Meanwhile, by doing outdoor exercise, they made more friends and enriched their lives. For instance, one woman said:

People said you needed to keep dancing even if it felt painful. No matter how painful it was, you just had to endure it and keep doing it. Then you wouldn't feel any more pain. So I took that advice, and kept dancing no matter how painful it was for the first half month. But by the latter half of the month, I no longer felt so much pain. And then, imperceptibly, I didn't feel any pain. That's it. You feel pain when you first start to exercise. That's the way it is. You can overcome it, and then you won't feel any pain if you keep doing it. For the sake of your health, you have to do it!

I sell fruit everyday for such a long time that I always feel very tired after work. But dancing at night is the exercise that makes me feel happy. I feel so relaxed after dancing; like when I walk home, I feel so light on my feet like I had taken some magical medicine. I then walk pretty fast, and I just feel very relaxed even in my shoulders. Exercise makes me feel like I have taken some amphetamines. I just continue regularly exercising, and I feel as healthy as a bull now.

We have practised yuen-chi dance together for 5 or 6 years, and we have all become good friends. So I wouldn't want to change my type of exercise. Exercise has not only given me a softer body, relieving some pain in my hands, but also brought me some good friends, and that's the reason why I keep exercising. We are all very good to each other, and we meet more and more friends; we have even gotten to know people from the next neighbourhood. I like this. Besides exercise, I also work as a volunteer at the Household Registry. A friend from the next neighbourhood whom I exercise with told me about this job. I have a very good day everyday, and never get bored staying at home.

Awareness of health crisis

Triggered by physiological discomfort, ageing and deterioration, menopausal women begin to feel psychologically haunted by 'Incurable chronic disease', 'Menopausal mood swings', and 'Conflicts about medications'. The women were disturbed by such incurable chronic diseases as cold, deterioration of bones and joints and osteoporosis. Such kinds of discomfort began to affect them frequently and they never could get cured. In addition, some mood swings resulted from the physical changes of menopause. Menopausal mood

swings, resulting from menopausal physical changes, create uncertainty about the effectiveness of medication and a dilemma of whether to use medical treatments or not. The participating women stated:

I have been feeling some pain in my waist since I became old. I have been to a lot of doctors for this. One doctor said it was because my backbone was somewhat crooked; some said that I have spurs. Anyway, I have been to a lot of doctors which people recommended me to, but they could not help me no matter how much medicine I took. So I started to think doing some exercise might be good for me.

At that time, I had my period every month and it bothered me very much, especially when I was travelling. Then I heard people saying that women have a lot of physiological problems when their menstruation stopped. Since then I started to worry. I would rather that I had menstruation throughout my life! But it's such a dilemma to a woman! I reached my menopause, and I felt very upset whenever I got hot flushes on my face, and I would easily get angry at other people. And that's very embarrassing. I think I must overcome these emotional disturbances.

People said that there would be some side-effects with hormone supplementation, such as cancer. I was so scared and considered stopping taking any hormone replacement. However, I was also worried that there would be a lot of discomfort if I didn't take it. So, I try to do exercises to relieve the discomfort.

Exercise selection

Facing up to the 'Awareness of health crisis', menopausal women decided to overcome it by engaging in regular exercise and they experienced the process of 'Self-evaluation', 'Seeking and fitting', and 'Comparing' to form their regular exercise. They evaluated whether the weather was suitable, the location was secure, the type of exercise was economical, they could have companions, equipment and right location, and then they began to exercise in a proper sequence. They asked for and accepted other people's recommendations, researched reference information and found out the best exercise they needed to improve their own health. They compared all the different types of exercise and chose the one that interested them and suited their bodies the best. For instance, the participating women said:

I think environment and friends are extremely important to me. For instance, I began to regularly exercise for the first 3 days doing yuen-chi dance with my neighbours. The head of our neighbourhood provided us a place to do it. We had a total of around 10 to 20 neighbours, and we would encourage each other to go there and exercise. And when it's time, we just go do it together!

There was a book about all the advantages of jumping rope. They said jumping rope could help enhance the cardio respiratory function, and you don't need a companion to do it. It is not like playing ball, where you need to find somebody to play with. That's it. It's just very convenient to do it.

I do not think yuen-chi dance is really useful to enhance my cardio respiratory function; it's too mild of an exercise for me. So, I jump rope in the morning. I also jump rope after some yuen-chi dancing.

Health becoming

In the study, the menopausal women's continuous regular exercise experiences included 'Resolving health crisis', 'Regaining flowering life' and 'Self-fulfilment', illustrating the continuous overall improvement process of the physical, mental and social role-playing, and spiritual aspects of life. This is the so-called process of 'Health becoming'. These women reported that exercise helped prevent the degeneration of physiological functions, and released pain so that they were able to discontinue some of their medications. They also approached menopause with greater optimism, and believed that regular exercise would make them feel better both physically and mentally, which in turn make them feel prettier and more attractive. In addition, regular exercise made them feel vigorous and hopeful in their lives. For instance, one woman said:

I went to have my bone density tested a few days ago. Though it's still secondary osteoporosis, the doctor said to me that it hadn't become any worse. People said that the older you get, the more bone density you lose. I do regular exercise, so I don't need to take any medication to fight ageing or to maintain my bone density.

I used to look good when I was young, but when I got married and started having babies, I had to spend a lot of time doing housework, and I could no longer make myself look good. Now my kids are all grown up, and I have some time for myself. So I want to gain back my elegance and beauty again. Exercise does make people look better and better. Really! Exercise has given me my beauty and confidence back, it's really good!

I didn't feel like I had ever persevered nor used my willpower to do anything for myself. But I have changed totally since I began to exercise regularly. You don't need to encourage me, because I will think of doing it (exercise) myself. When you discover the importance of exercise, you will do it yourself without being pushed by anybody. It's more important to be self-motivated. If you don't want to exercise, no matter how hard people encourage or push you, it just won't work.

Discussion

Menopause is an important turning point for middle-aged women. During this period of time, women begin to experience changing health and are aware of their constantly changing physical and mental states (Quinn, 1991; Tsao, 1998). The current study demonstrated that women became aware of their health crisis. They perceived that they had 'Incurable chronic disease', also they had 'Mood swings' and 'Conflicts about medications'. The outcome of this study demonstrates that the key motivator leading menopausal women to consider regular exercise was their experience of health changes. From the viewpoint of feminist research, natural therapies (intake of healthy food and exercise) are suggested for treating menopausal syndromes (Chang & Chang, 1998). The outcome of this study shows that all the 12 participating women chose regular exercise to relieve some of their menopausal syndromes. They also used alternative natural foods to help 'Resolving health crisis'. Women perceived their menopausal health problems as 'Incurable chronic disease'; however, they had 'Conflicts about medications'. These women's subjective perceptions of health crises reminded the health providers should help women to get through their perimenopausal difficulties based on individual values as previous studies (Kaufert *et al.*, 1998; Greendale *et al.*, 1999; NAMS, 2000).

When selecting a suitable form of exercise, they experienced the processes of 'Self-evaluating', 'Seeking and fitting' and 'Comparing'. In the self-evaluation process, menopausal women considered weather, the safety of environment, the available time, the cost, the companions, the distance of exercise location and the exercise equipment. These factors would be a good reference for health providers to design a mid-life exercise programme. In the current study, all these factors were obstacles that affected these women's willpower to exercise regularly. However, all 12 participants were able to reduce the influence of these factors to a minimum, and continued to exercise daily. The outcome of the study echoed research by Conn (1998) and Nies *et al.* (1999) who studied middle-aged or older women. In addition, menopausal women who had more social support from the group they exercised with showed better exercise performance (Sternfeld *et al.*, 1999). The present study also demonstrated that all participants had friends they exercise with or families as companions to help them exercise regularly.

'Perceiving continuous power' was referred like the Western meaning of 'empowering'. Women perceived that they got 'health power' by themselves during the process of regular exercises. The interviewee's concept that 'exercise enhances my health' was similar to the conclusion of Jeng

et al. (2002) study. Jeng pointed out that heart transplant patients adjusted themselves and tried to think positively about the discomfort they experienced in the initial exercise stage. They all considered that they had to overcome the initial discomfort; otherwise they would never recover from the illness.

According to the outcome of the study, the motivation for menopausal women to continue regular exercise came from 'Overcoming the initial discomfort', 'Experiencing benefits to body and mind', and 'Broadening'. Moving from sporadic exercise to regular exercise, every interviewee experienced initial physical discomfort, such as muscle or joint pain. But for the sake of their health, they endured and eventually overcame all the discomfort.

Eaton *et al.* (1993) pointed out that doing exercise could help menopausal women to relieve their physiological and psychological discomfort, increase their self-confidence and no longer feel melancholy. The current study also revealed that all women, in the process of regular exercise, experienced benefits to their bodies and minds. That is, they enjoyed physiological and psychological comfort, enhancement of their physical strength, relief of physical pain, achievement of learning exercise and increased affection between them and their spouses. These were all joyful and positive exercise experiences for all menopausal women who engaged in regular exercise.

Hautman (1996) and Tsao (1998) pointed out that menopausal women experienced a 'Broadening' of their social networks. Women in this study also experienced a 'Broadening' when they entered an exercise group outside the family; they all agreed that the biggest motivator for regularly exercising, apart from improving their bodily health, was to make friends with people they exercised with and to expand their social contacts.

Parse (1987) emphasized that health is an ongoing process, not just a status. When independently facing all environmental conditions, human beings are able to analyse or explain these personal experiences and grow or benefit from all the analysed relationships. This is the so-called process of 'becoming'. The main concept and principle of the human becoming are that humans structure the meaning of their reality by way of multi-dimensional correlations between imagination, value and language. The interviewees used language to express or describe how they had changed physiologically and psychologically during their menopausal stages and how they had been lost in the dilemma of whether or not to take HRT. Likewise, they had language to depict how they selected suitable forms of regular exercise to resolve their health crisis, how their body and mind experienced a positive changeover and also how they were empowered by

regular exercise. By way of language, they were able to express their positive feelings about regular exercise and how they insisted on doing it and finally achieved their ideal of self-fulfilment. Therefore, the regular exercise experience that menopausal women had was identical to Parse's 'human becoming' concept.

In summary, the findings of this study support the notion that menopausal women who exercised regularly were able to face their menopausal lives optimistically. They were able to maintain a fit figure by regular exercise; they could enjoy physical and mental happiness that comes with active exercise; happy living made them feel prettier and more attractive. They felt like regaining their flowering lives although they had gone through menopause.

Implications for nursing practice

When engaged in the nursing practice of women's health promotion, nurses should encourage all menopausal women actively to seek health-improving behaviour: regular exercise, and should provide them with accurate, accessible and effective exercise prescriptions. While promoting the idea of health care for menopausal women via newspapers and all kinds of media broadcasting, we should emphasize the importance and effectiveness of regular exercise by encouraging people to establish women's exercise groups in every community, providing safe, convenient, and economical exercise teaching, exercise environments, exercise locations and ample exercise equipment, so that more women can be able to participate in regular exercise and benefit from it.

Study limitations

The findings of this study are limited to the 12 women who were recruited from community parks and cannot be generalized to all Taiwanese women. Replication of the study with a large, systematic, sampling of Taiwanese women is recommended. In addition, most of the data were collected based on participating women's retrospections and were undoubtedly somewhat affected by their selective memories. In addition, although the findings of this study have helped to begin generating a descriptive framework, further studies are needed to establish and validate a comprehensive framework for understanding the issues perimenopausal women face when initiating a regular exercise programme.

Conclusions

The regular exercise experiences of menopausal women began after they reached menopause, they encountered the

impact of 'Awareness of health crisis' by worrying about 'Incurable chronic diseases', 'Mood swings', and the dilemma of whether or not to take medication. Facing these health crises, menopausal women began 'Exercise selection' to regain their health. They attempted 'Self-evaluation', 'Seek and fitting' and by 'Comparing' to choose exercises matching their own interests and body strength and then performed it regularly. Finally, they experienced the overall 'Health becoming' by 'Resolving their health crisis', 'Regaining flowering lives', and gaining 'Self-fulfilling' when they began to face their postmenopausal lives optimistically and when exercise brought them the happiness and helped them achieve less body fat that made them look slimmer and more attractive. They 'Perceived continuous power' during the process of regular exercise. These powers help them to overcome the initial psychological and physical discomfort, experience benefits to their bodies and mind and then broaden their social contacts by making more friends during exercise. This process of regular exercises of menopausal women brings a good reference for health care providers who need to build a culturally sensitive and humanistic exercise programme for mid-life women.

Contributions

Study design: CJ, L-IT; data analysis: CJ, L-IT, P-CC; manuscript preparation: CJ, S-HY, L-IT; literature review: CJ, S-HY, P-CC.

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