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A Situation-specific Theory of Midlife Women's Attitudes toward Physical Activity (MAPA)

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Abstract

This paper presents a situation specific theory—the Midlife Women's Attitudes toward Physical Activity (MAPA) theory—that explains how women's attitudes toward physical activity influence their participation in physical activity. Using the integrative approach of Im, the theory was developed based on the Attitude, Social Influence, and Self Efficacy Model, a review of the related literature, and a study of women's attitudes toward physical activity. As a situation-specific theory, the MAPA theory can be easily linked to nursing practice and research projects related to physical activity in midlife women, especially interventions aimed at increasing midlife women's participation in physical activity.

Keywords

Situation-specific theory; midlife women; attitudes toward physical activity

A Situation-specific Theory of Midlife Women's Attitudes toward Physical Activity (MAPA)

Many intervention studies have been conducted to increase the level of physical activity among inactive people, especially midlife women.^{1, 2} However, these studies have rarely succeeded in achieving their goals of improving health behaviors, in part, because dropout rates have been as high as 50% in the first several months.^{1, 2} Physical activity interventions may fail because they are not designed with women's values, attitudes, and beliefs related to physical activity in mind.^{3, 4} The key to improving these interventions is understanding more about how women's attitudes influence their participation in physical activity.

Studies, however, have tended to focus on a range of factors that influence midlife women's participation in physical activity to the exclusion of their attitudes.⁴ Those factors included age, educational level, socioeconomic status, employment status, marital status, number of children, acculturation, perceived health and menopausal status, physical activity self-efficacy,

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social influence, and perceived barriers.^{5, 6} To explain how these factors relate to each other, a number of theories have been developed and used.⁷⁻¹⁰ Of all the currently available theories indexed in PubMed, the PsycINFO database, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL), only one theory was identified that incorporates women's attitudes toward physical activity: The Attitude, Social Influence, and Self Efficacy (ASE) Theory.¹⁰ However, even this theory does not adequately explain how midlife women's attitudes toward physical activity influence their participation in physical activity within the sociocultural contexts of their daily lives.

The purpose of this paper is to present the Midlife Women's Attitudes toward Physical Activity (MAPA) Theory, a situation-specific theory that was developed using the steps in the integrative approach suggested by Im.¹¹ More details on the integrative approach can be found elsewhere.¹¹ The MAPA theory aims to explain the relationship of midlife women's attitudes toward physical activity to their actual participation in physical activity, while also considering other influencing factors that are known from the literature. The process of theory development for the MAPA theory had three major assumptions. First, it was assumed that theories explaining midlife women's attitudes toward physical activity should be diverse. Second, it was assumed that the theory development process is cyclical, evolutionary, and occurs in specific sociopolitical contexts. Finally, based on a feminist perspective, it was assumed that women's physical activity is most completely understood through the dynamics at the nexus of physical activity, the female body, and cultural ideals of health and beauty within patriarchal societies.¹²

Definitions used in Theory Development

In this theoretical development work, we refer to *physical activity* as bodily movements produced by the contraction of skeletal muscles that result in energy expenditure, and define *exercise* as a subset of physical activity that is planned, structured, repetitive, and has the improvement or maintenance of physical fitness as an intermediate or a final objective.¹³ We also refer to *attitudes toward physical activity* as what a woman thinks and expresses about a physically active lifestyle for herself.¹⁴ *Social influence* is what other people think about a physically active lifestyle for her. *Self-efficacy* is her confidence in being able to successfully engage in a certain physical activity behavior, given a range of contexts and barriers.

Multiple Sources for Theory Development

As the integrative approach directs, the MAPA theory was developed by exploring the phenomenon in multiple sources: a mid-range theory, an integrative literature review, and the findings of a research project. First, a mid-range theory—the Attitude, Social Influence, and Self Efficacy (ASE) Model by De Vries et al.¹⁰ was used as a source for the development of the MAPA theory. From the ASE Model, three psychosocial determinants of physical activity behavior—attitude, social influence, and self-efficacy¹⁰—were adopted to explain the relationships between midlife women's attitudes toward physical activity and their actual participation in physical activity, while considering social influence and self-efficacy.

Second, an integrative literature review based on searches of PubMed, the PsycINFO database, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) was conducted and used as a source for theory development. We searched the literature from 1965 to 2005 with the keywords “midlife,” “women,” “physical activity,” “exercise,” and “attitudes.” Three hundred sixty-four articles were retrieved; articles not in English and articles on tutorials were excluded, for a net total of 332 articles. Additional articles (25), which became part of the literature review, were identified from the reference lists of the retrieved articles. Then, the articles were analyzed in terms of their major findings. Only those findings from the literature review that were directly linked to the MAPA theory are presented in the next section.

Finally, we used the findings from a study on midlife women's attitudes toward physical activity, called the MAPA study,¹⁵ with the major goal of exploring midlife women's attitudes toward physical activity. The MAPA study utilized a cross-sectional design including an Internet survey administered to multiple ethnic groups of midlife women (57 Whites, 20 Hispanics, eight African Americans, and 15 Asians), an online forum involving 15 midlife women recruited from among the Internet survey participants, and an expert review by eight experts in women's health and physical activity. For development of the MAPA theory, only the findings of the Internet survey and online forum for midlife women were used. More detailed information on the MAPA study and the study participants can be found elsewhere.¹⁴ Because the MAPA study was conducted with participants recruited via the Internet, they tended to be a select group of midlife women: 43% of the women were college graduates; 77% had a religion; 68% were married or partnered; 75% were employed; and 52% reported that their family income was such that it was sometimes hard to meet their basic needs. Only the findings of the MAPA study that were directly linked to the MAPA theory are presented in the next section.

The MAPA Theory

The proposed MAPA theory (see Figure 1) is composed of eight major concepts that were developed using multiple sources: (a) women's attitudes toward physical activity, (b) women's participation in physical activity, (c) background characteristics, (d) health and menopausal status, (e) physical activity self-efficacy, (f) social influence, (g) perceived barriers, and (h) the contexts of women's daily lives. The major concepts and their associations are described below.

Women's Attitudes toward Physical Activity

The findings from several studies have suggested certain ethnic-specific attitudes toward physical activity and their associations to physical activity levels.^{3, 14, 16} Post-menopausal African American women did not participate in physical activity because of a lack of time due to work and family responsibilities.¹⁶ While Anglo Americans valued individual outcomes and spoke of personal factors promoting or preventing exercise, Mexican Americans viewed physical activity as prescriptive, important for restoring health, and cited family responsibilities and family attitudes as factors that promoted or prevented them from exercising.³ Patriarchal cultural heritage did not allow Korean immigrant women to prioritize their needs for physical activity¹⁴; rather, they chose to take care of their households and children if they had any spare time.

The quantitative findings of the MAPA study also indicated that attitudes toward physical activity significantly explained the variance in the women's physical activity (partial $R^2 = .24$, $p < .01$) when controlling selected factors that have been reported to influence women's physical activity (age, years of education, family income, employment status, marital status, number of children, ethnic identity, number of years in the U.S., general health, menopausal status, menopausal symptoms, physical activity self-efficacy, social influence, and perceived barriers). The selected factors and attitudes toward physical activity significantly explained 38% of the variance in women's physical activity. Among the four ethnic groups of women, Whites had the lowest mean attitude score (a low mean score means more negative attitudes toward physical activity) and Hispanics had the highest mean attitude score.

The qualitative findings of the MAPA study also indicated that there are ethnic differences in women's attitudes toward physical activity. White women thought that physical activities were those that should be done outside of work and should be fun, whereas ethnic minority women thought that physical activities included their jobs, housework, walking, cooking, child-rearing, etc. Two women indicated:

Physical activities should be done outside of work and [be] enjoyable. We all need to dedicate 20-30 minutes of time per day to free time to do something beneficial for our health 2-3 times a week and you got away from stress and gave something to yourself (White).

To me, it's housework, walking, when doing laundry... I think of physical activity as being anything that gets us up on our feet and moving our body for a period of time. I think that any type of physical activity is a good thing. I have an advantage because of my job, not because of my race, since I am constantly on my feet as a nurse (African American).

Women's Participation in Physical Activity

Women's rate of participating in physical activity is commonly low, and they tend to be less likely to be physically active than men.^{3, 17} Data from the Behavioral Risk Factor Surveillance System (BRFSS) for Texas showed that only 19.5% of the women in the survey engaged in more than 20 minutes of vigorous physical activity three or more days per week in the previous month.¹⁷ In addition, most midlife and older adults lead sedentary lifestyles.³ A number of studies have also reported ethnic differences in women's participation in physical activity^{18, 19}; more White adults are meeting the recommended guidelines for moderate physical activity than ethnic minorities.^{18, 19} Despite these findings, few investigations on physical activity have included women from all major ethnic groups in adequate numbers to produce valid comparative data; and each has targeted a specific ethnic group in a particular geographic area.^{1, 4}

The MAPA study also indicated ethnic differences in women's participation in physical activity ($F = 2.97, p < .05$). African Americans had the lowest mean physical activity score (a low mean score means a low level of physical activity). The qualitative findings also indicated that Whites tended to be more active and intentional about it and that ethnic minorities tended to limit their physical activities because of other immediate needs. One White woman wrote:

I look at my exercise regimen as part of my job in maintaining a healthy mind and body, that mindset gets me through physical activity...Toss the clothes in and push a button.

An Asian woman indicated:

Mine are time (to the question on the reason for not participating in physical activity). I just never have enough time to do all the things I need to get done and I tend to put my family and home first before I think of myself.

Background Characteristics

Because age, educational level, socioeconomic status, employment status, marital status, the number of children, and acculturation are background characteristics known to influence women's physical activity,^{1, 3-5, 13} these variables are another major concept in the MAPA theory. However, the findings on the directions of the relationships between the background factors and women's physical activity were inconsistent, which may be due to differences in the measurement of physical activity, whether by average weekly frequency and intensity of some leisure-time physical activity or energy expenditure over 24-hour periods, including household physical activity. For example, some showed that younger women reported a higher rate of participation than older counterparts did, whereas others indicated that older women were more likely to engage in physical activity than their younger counterparts did.^{12, 13}

The quantitative findings of the MAPA study also indicated a significant relationship between the number of children and women's physical activity. Among the background characteristics

that were considered in the multiple regression analysis, only the number of children significantly explained physical activity (R^2 change = .054, $p < .01$).

The qualitative findings of the MAPA study also support the association of background factors and women's physical activity. One White woman reported that her age was the factor that influenced her physical activity. She wrote:

I think getting older helps me realize that I won't be around forever and had better make the most of whatever amount of time I do have left. With my body aging and health problems starting to develop, and cooking fattier meals for friends who request them has helped me see—only I can take care of myself and my own needs for physical activity.

Health and Menopausal Status

Perceived health status has been reported to influence women's participation in physical activity; adults with poor self-perceived health status performed no or few physical activities during their leisure-time.^{5, 20} As women reach midlife, the incidence of chronic conditions increases significantly, and symptoms of various chronic conditions (e.g., fatigue, weakness, sleep disturbances) may make it more challenging to engage in health-promoting behaviors, physical activity, and exercise. One of the most frequent responses to common symptoms such as fatigue and weakness is to stop leisure-time activities—often resulting in physical inactivity.²¹ Menopausal status is also associated with women's participation in physical activity,²² but the direction of the relationship has not been explicitly explored or delineated. In the literature, rather than examining women's physical activity in relation to menopausal status, studies have explored the relationships of physical activity to a specific aspect of women's health (e.g., bone mineral density, body mass, mood state, quality of life, risk of hip fracture, etc.) in a specific menopausal status group (e.g., postmenopausal women).^{20, 23} Menopausal symptoms also frequently correlated with physical activity level^{3, 22}; however, the findings were inconsistent.¹⁹

Although the quantitative findings of the MAPA study did not indicate a significant association between health and menopausal status and women's participation in physical activity, the qualitative findings supported the influences of health status. Two women wrote:

Dealing with an illness that relies on staying active and eating a controlled variety and portion of foods in order to stay healthy has been my goal... These are two things (staying active and eating a controlled diet) I can control in order to influence my health (White).

Four years ago, I found I had type 2 diabetes, which was hard on me mentally and physically. I had to change my way of eating, which was and still is hard. I had always loved baking and having sweets around. Now, the sweets are still here with the rest of my family, but I have to stay away. I have to [admit] that I do cheat...Anyway, with my meds, I can walk and not have to suffer at night for doing it. I know I feel better when I walk, and [the] farther I walk, [the] better I feel mentally (Asian).

Some women mentioned that their pregnancy and menstrual period prevented them from doing physical activity. One White woman mentioned:

I only really noticed physical activity affecting me as a woman when it came to being pregnant or being on my period (mine were always painful, heavy, and problematic). Under both situations, I found myself limiting my physical activity to accommodate my condition.

Physical Activity Self-efficacy

Physical activity self-efficacy (how confident an individual is in their ability to be active) is the most frequently identified factor associated with physical activity.¹ Studies report that self-efficacy is associated with adherence to and regularity of physical activity, and it is a significant predictor of women's participation in physical activity.^{1, 24, 25}

The MAPA study also supported the association of physical activity self-efficacy with midlife women's participation in physical activity. In the multiple regression analysis, physical activity self-efficacy significantly explained the variance in women's physical activity (R^2 change = .086, $p < .01$). The qualitative findings of the MAPA study also supported the influences of self-efficacy on women's physical activity. Two White women indicated:

When I don't (do physical activity), I feel guilty and lazy, so emotionally it's harder not to walk than to work... But, sometimes, I'm lazy and just can't get motivated.

I think that we have declined in our ability to participate in physical activities. Most people are too caught up in their daily lives to be concerned with being physically active...But, I have been able to overcome that feeling by getting up earlier, getting an exercise partner, or doing things in the house to substitute for "going out" for exercise.

Social Influence

Social influence, one of the main environmental determinants of physical activity consists of the opinion of family, friends, colleagues, and health professionals, but also the general opinion of society.^{10, 15, 16} The influence of family and friends has been repeatedly reported to have a positive influence on physical activity in healthy people.¹⁶ However, health professionals' influence was positively correlated with weight reduction, but not physical activity.¹⁵

Although the quantitative findings of the MAPA study did not confirm the association of social influences on the women's participation in physical activity, the qualitative findings of the MAPA study were consistent with existing studies in terms of the significant relationship of social influences and midlife women's participation in physical activity. The women described traditional patriarchal stereotypes reinforced by mothers and grandmothers (e.g., taboos related to physical activity, especially during periods), who encouraged physical inactivity in their childhoods. Two women wrote:

My mother discouraged me from basketball because I was a woman, and football was seen as out of the question. Some sports were more associated with men and bodybuilding. I like the more stereotypically female activities, such as flower gardening (White).

My grandmother had specific concerns on my physical activity especially during the periods. Even washing hair during the periods was something that girls shouldn't do. Girls should not sit on cold floors to protect their wombs. Girls should not ride a bicycle. Girls should not wear tight pants that could hurt their sexual organs (Asian).

Perceived Barriers

The perceived barriers to physical activity were a significant factor that influenced physical activity.^{6, 16, 26} Lack of time, feeling tired, feeling that they were active enough at their jobs, and lack of motivation influenced women's participation in physical activity.²⁶ Studies have indicated that inadequate time was a major barrier to physical activity.^{16, 26}

The quantitative findings of the MAPA study indicated significant relationships between perceived barriers and midlife women's participation in physical activity ($r = .45$, $p = .02$). The

qualitative findings also indicated a variety of barriers; the most frequently reported barrier was busy schedules (inadequate time). Health problems and issues were sometimes facilitators of physical activity, but they were also barriers to physical activity. Weather was another barrier that many women reported. Two women wrote:

I try to walk at least 3 to 4 times a week during my lunch hour, but I find that this is not helping much with weight loss since I think my body is used to these walks. I joined a gym about 3 weeks ago so I can try to do weight lifting and more difficult cardiovascular exercises...but here again family demands, and the holiday activities have prevented me from going...I am having a difficult time finding the time (African American).

I also have more trouble getting out to walk in the winter weather. The cold really seems to bother me now...much more than it used to. Also, the decrease in daylight during the winter months seems to make it harder to get moving (White).

Contexts of Daily Lives

Studies have indicated ethnic differences in the contexts of participation in physical activity.^{15, 16, 26, 27, 31} For example, Taiwanese women are expected to meet all of the emotional and physical demands of their husbands and children,²⁶ which frequently makes it hard for them to find time for physical activity. Other gender roles in individual cultures have also been reported to affect physical activity.²⁶ For instance, women with fewer domestic tasks were more likely to engage in leisure-time physical activity. Also, traditional norms of femininity (i.e., where vigorous, sweaty activity is seen as unfeminine) have been reported to influence women's participation in physical activity across ethnic groups.²⁷ Body image was also related to Korean immigrant and African American women's physical activity.^{15, 31} Childcare has been reported as one of the contextual factors that influences physical activity across six ethnic groups of women.¹⁵ Furthermore, physical environments (safety, availability of facilities, cost) have been reported to influence participation in physical activity, especially by ethnic minority women.^{1, 16}

The qualitative findings of the MAPA study also revealed the influences of the contexts of daily lives on midlife women's physical activity. Family members' illnesses and child rearing were the major contextual factors identified in the MAPA study. Two women wrote:

Recently, due to taking care of my husband's grandmother and attempting to locate a facility for her care, exercise has come second and truly missed in our lives (White). Being a stay at home mom that home schools a special needs child and also a wife and caregiver to a spouse that [is] blind and [disabled] from a head wound, there is little time for me...that is what inhibits me from taking time out to keep myself healthy (Asian).

Conclusion

The MAPA theory presented in this paper describes how midlife women's attitudes influence their physical activity and integrates multiple factors that are known to influence their participation in physical activity within the sociocultural contexts of their daily lives. As a situation-specific theory, the MAPA theory is anticipated to be easily employed in nursing practice and research projects related to physical activity in midlife women, especially physical activity interventions. However, the MAPA theory has several limitations due to the inherent nature of situation-specific theories. First, the proposed theory aims solely to explain the relationship of midlife women's attitudes and their participation in physical activity within the sociocultural contexts of their daily lives in the U.S. Thus, the MAPA theory should be carefully applied in studies of women of different ages or in different settings. Furthermore, the theory

should be viewed as emerging rather than complete, because a situation-specific theory at a specific time and place would not be applicable for a different time and place because of its specificity; additionally, the theory development itself is a dynamic, evolving, and cyclic process.

We would like to conclude this paper with the following implications for future testing and development of the MAPA theory. First, several major concepts of the MAPA theory, including background factors, health status, menopausal status, social influence, and contexts of daily lives, should be further tested and developed in future studies. These concepts require additional supporting evidence because the quantitative findings of the MAPA study did not provide concrete evidence to support them, or the current literature reported inconsistent findings about their relationships to midlife women's physical activity. In addition, the MAPA theory should be further tested and developed in a diversity of midlife women (in terms of ethnicity, socioeconomic class, age, etc.), in different settings (e.g., rural versus urban areas), and in national and international samples with a larger number of ethnic minority women. The participants in the MAPA study were a select group of midlife women, which might have put limits on the MAPA theory. Finally, the MAPA theory should be further tested, validated, and developed in intervention studies that test the theory in actual intervention development and implementation. Because the MAPA theory aims to direct physical activity interventions, its linkage to intervention development and implementation is imperative.

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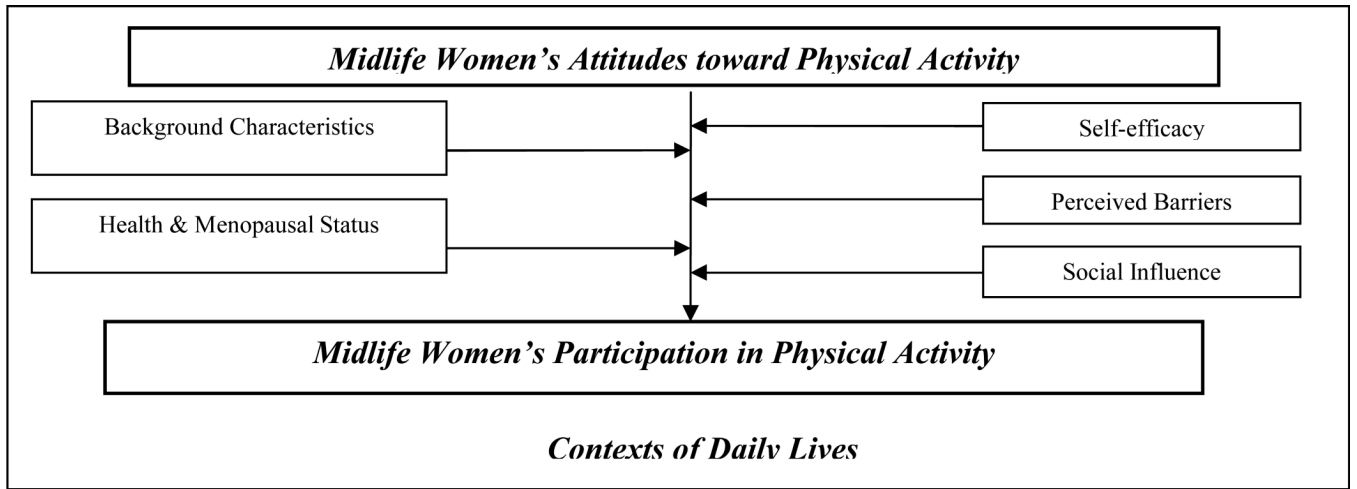


Figure 1.
The MAPA Theory