Factors influencing women in physical activity programs in Malaysia

C. Hanlon1,*, S. Khoo2, T. Morris1, and R. Eime3

1Institute of Sport, Exercise and Active Living, Victoria University, Melbourne, VIC, Australia, 2Sports Centre, University of Malaya, Kuala Lumpur, Malaysia and 3Institute of Sport, Exercise and Active Living, Victoria University, Federation University of Ballarat, Australia

*Corresponding author. E-mail: clare.hanlon@vu.edu.au

Summary

The majority of research on factors associated with women participation in physical activity (PA) has been in developed countries with limited research in developing countries. Few women in Malaysia are active at the recommended levels for health, and activity rates are less than developed countries. Little research has focused specially on physically active Malaysian women and the factors that contribute to them becoming and staying active in PA programs. This lack of knowledge hinders the tailored development and implementation of PA programs to meet their needs. The aim of this study was to identify the factors of participation in PA programs for Malaysian women. The social–ecological model was used to investigate and theme the factors. Focus group discussion was conducted with participants in six PA programs targeted specifically to women. Thirty-seven women were involved in the focus group discussion, with ages ranging from 19 to 82 years. Inductive and deductive content analysis was conducted from verbatim transcripts using NVivo. Inductive content analysis allowed raw data and second-order themes to emerge. Findings revealed social support structures, tailored programs for women, and location were key contributors that encouraged women to participate in these programs. The similarity in contributors between women in non-western and western countries signifies a prime opportunity for bi-lateral relationships to be formed to enable the enhancement of program development relevant to different ethnicities and cultures within or across countries.

Key words: women, Malaysia, facilitators, social development, physical activity programs

INTRODUCTION

Physical inactivity contributes to many chronic diseases and is a global public health epidemic (World Health Organisation, 2015). Furthermore, women are less likely to be physically active than males (Eime et al., 2015a).

In order to have effective strategies and programs to increase women in physical activity (PA) we need to understand the factors of participation. Ecological models are commonly used for researching PA based on the activity conducted in specific places (Sallis et al., 2006). In particular the socio-ecological model whereby factors of participation in PA are commonly aligned to the intrapersonal, interpersonal, organizational, physical environmental and/or policy factors within the model (Sallis et al., 2006). For example key intrapersonal factors for women often relate to self-efficacy, competency and confidence (McAuley and Blissmer, 2000), health status (Milne et al., 2014) and availability of personal time (Hanlon et al., 2010;
Eime et al., 2015b). A key driver for many women to be physically active is a desire to be fit (Hanlon et al., 2010) and the development of an improved body image (Caperchoine et al., 2009). Key interpersonal factors for women participating in leisure-time PA relate often to social support from friends and/or family (Eime et al., 2015b) or more broadly relating to perceived community and cultural expectations and backgrounds (Koca et al., 2009; Hanlon et al., 2014). However, women who come from a culture in which PA is not valued as an activity for women often lack family support for participation (Taylor and Toohey, 1999; Koca et al., 2009).

Organizational factors of PA participation for women can relate to access of facilities (Eime et al., 2015b), and specifically to the access, number and type of programs offered (Jones et al., 2010; Milne et al., 2014). Program providers can be key to attracting and sustaining involvement of women in PA programs, through accommodating individual requirements, abilities and life stages and having quality instructors who understand women’s needs, display a caring and listening demeanor (Hanlon et al., 2010). Other positive influences include provision of childcare facilities and group activities that include children (Jones et al., 2010), flexible schedules around work commitments (Milne et al., 2014), and programs with a social focus (Newson and Kemps, 2007). Perceived comfort and safety of where the program is conducted are also important factors for women (Caperchoine et al., 2009). The behavior of instructors can increased participants’ competence contributing to continued participation (Hanlon et al., 2010), and the creation on intrinsic motivation contributes to increased satisfaction and enjoyment (Deci and Ryan, 1985). In addition, physical environment factors for women involved in PA participation comprise the built and natural environment, including weather and land-use policies (Heath et al., 2006; Chan and Ryan, 2009). The central tenet to ecological models is every level of influence is important, and multi-level interventions are generally more effective than single-level interventions (Sallis et al., 2015).

Although there is comprehensive information of the factors on the PA participation of women, this has mainly focused on developed western countries (Babakus and Thompson, 2012). Very little PA-based research has been conducted in non-Western countries, and the meaning or concepts of PA differ internationally (Liu et al., 2008). For example, Malaysia is a developing country in South East Asia with a multi-cultural, -ethnic and -religious society with a 49% female population (Department of Statistics Malaysia, 2011). Despite the richness in culture, research is sparse on the PA participation of women.

Women participating in PA in Malaysia
Limited, and at times conflicting, statistics on the PA rates among women in Malaysia are reported. Malaysia has been recognized as one of the countries globally that has the highest insufficient PA rates among females (58% prevalence) (World Health Organisation, 2015). Findings from a Malaysian survey revealed the prevalence of PA is lower for women than men (National Health and Morbidity Survey, 2015). One reason may be within the Malaysian culture, the traditional role of women relates to the family caregiver and they are often expected to prioritize home activities over leisure-time PA (Cheah, 2011).

Kuala Lumpur in Malaysia has private and public community organizations that have developed programs targeted at encouraging women in PA. Climatic reasons have resulted in many of these programs to be conducted indoors and the type of PA offered depends on local community traditions. Despite some of these programs being run for over 30 years, there is a lack of understanding on what factors in these PA programs encourage women to participate (Cheah and Poh, 2014).

Research has been conducted in Malaysia on the factors of participation in PA for men (Ibrahim et al., 2013), and socio-demographic factors such as gender, income and education (Cheah and Tan, 2014). The aim of this qualitative study is to identify the factors that encourage participation in PA programs for Malaysian women.

METHODS
A qualitative approach was employed in this study to obtain a deep understanding of the factors of participation in PA programs among Malaysian women. This approach was chosen in order to understand the lived experiences of women who take part in long-term PA programs. Focus group discussions were used as they allowed participants to explore issues together (Kitzinger, 2006). For the purpose of this study, long-term programs were defined as PA programs tailored for women that had existed for over 3 years (Hanlon et al., 2014).

Participants
The participants were women who represented six different PA programs, namely aerobics, gym, floorball, futsal, tai chi and an exercise class specifically for pregnant women and mothers (Table 1). Participants’ ages ranged from 19 to 82 years with tai chi participants being the oldest (60–82 years) and they represented major ethnic groups within Asia (e.g. Malays, Chinese and Indians). These women had been participating in the
program from between one to 30 years. Nearly a third (30%) of participants had been involved for only a year. The tai chi participants had been participating for the longest time with half of them involved for more than 10 years.

**Procedure**

Twelve women only long-term PA programs in Kuala Lumpur were identified by one of the authors (S.K.). These programs comprised privately run (commercial gym and exercise classes for pregnant women), community sport (floorball and futsal) or fitness (aerobics and tai chi) programs. Managers of these programs were invited to assist recruiting participants. Six accepted and were emailed the Information Statement for Participants to distribute when inviting program participants to be involved in this study. The inclusion criteria were women aged 18 years who attended one of the identified programs. After the managers provided a list of participants who volunteered for the study, a suitable day and time was arranged to conduct each focus group.

### Table 1: Demographic profile of participants

<table>
<thead>
<tr>
<th>Program</th>
<th>Participant ID</th>
<th>Age</th>
<th>Ethnic group</th>
<th>Years involved in program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobics</td>
<td>A1</td>
<td>53</td>
<td>Malay</td>
<td>2</td>
</tr>
<tr>
<td>Aerobics</td>
<td>A2</td>
<td>46</td>
<td>Chinese</td>
<td>3</td>
</tr>
<tr>
<td>Aerobics</td>
<td>A3</td>
<td>35-40</td>
<td>Indian</td>
<td>3</td>
</tr>
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<td>Aerobics</td>
<td>A4</td>
<td>33</td>
<td>Malay</td>
<td>1</td>
</tr>
<tr>
<td>Aerobics</td>
<td>A5</td>
<td>31</td>
<td>Chinese</td>
<td>1</td>
</tr>
<tr>
<td>Aerobics</td>
<td>A6</td>
<td>52</td>
<td>Chinese</td>
<td>1</td>
</tr>
<tr>
<td>Gym</td>
<td>G1</td>
<td>66</td>
<td>Malay</td>
<td>3</td>
</tr>
<tr>
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<td>G2</td>
<td>36</td>
<td>Malay</td>
<td>3</td>
</tr>
<tr>
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<td>30</td>
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</tr>
<tr>
<td>Gym</td>
<td>G4</td>
<td>40</td>
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<tr>
<td>Gym</td>
<td>G5</td>
<td>67</td>
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<tr>
<td>Exercise class for pregnant women</td>
<td>E1</td>
<td>33</td>
<td>Non-Malaysian (Caucasian)</td>
<td>2</td>
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<tr>
<td>Exercise class for pregnant women</td>
<td>E2</td>
<td>35</td>
<td>Non-Malaysian (Caucasian)</td>
<td>1</td>
</tr>
<tr>
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<td>E3</td>
<td>41</td>
<td>Chinese</td>
<td>5</td>
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<td>E4</td>
<td>39</td>
<td>Chinese</td>
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<td>E5</td>
<td>32</td>
<td>Non-Malaysian (Caucasian)</td>
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<tr>
<td>Exercise class for pregnant women</td>
<td>E6</td>
<td>32</td>
<td>Non-Malaysian (Caucasian)</td>
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<tr>
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<td>F4</td>
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<td>F5</td>
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<td>Futsal</td>
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<td>Indian</td>
<td>3</td>
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<td>T1</td>
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<td>Chinese</td>
<td>28</td>
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<td>Tai chi</td>
<td>T8</td>
<td>63</td>
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Six focus groups were conducted with five to eight participants in each. A total of 37 women participated in the study. Prior to the focus group beginning, the participants indicated their consent by signing the consent form following an explanation of the study. The same facilitator, who was a woman, conducted the sessions either in English, Malay or Mandarin. Focus groups were conducted where the program was held and lasted between 24 and 45 min. Focus group discussion was recorded on a digital recorder with the prior permission of all participants in the group. The discussion started with questions about participants’ involvement in the program to encourage participants to contribute. This was followed by recruitment and retention questions associated with the program including ‘Explain why you decided to join this program’, ‘What do you like about the program?’, ‘What have been the benefits for you?’ and ‘What problems have you had with participating (barriers)?’ The focus group facilitator used clarification and elaboration probes to enhance information provided by participants that was unclear or that seemed to be incomplete.

Data analysis
In line with previous studies relation to PA, this study utilized inductive techniques to identify themes and then applied an often predetermined theory or model based on deductive techniques to provide a structure within which to set the themes they derived from the data (e.g. Winfield et al., 2013). The digital recordings of all six focus groups were transcribed verbatim and adopted inductive techniques to allow raw data themes and second-order themes to emerge from the data. The transcripts were read at least twice for familiarization and coded the content using QSR NVivo10 software. An author and research assistant coded each transcript independently, and compared the data to check for consistency. In Stage 1 of coding, we assigned a unique code to all statements that referred to an aspect of what made a PA program for women successful in terms of recruitment and retention and we described them as raw data themes. In Stage 2, we grouped together by code all raw data themes that appeared to refer to a similar more general theme, which we termed second-order themes. Thus, to this point the themes emerged from the data inductively. In Stage 3, the socio-ecological model was applied in a deductive manner to provide a framework of general dimensions that included all the second-order themes. The themes were then categories into the socio-ecological domains.

RESULTS
Intrapersonal factors
The main intrapersonal factors discussed by the women related to psychological health, physical health, educational benefits or other priorities. These included facilitators to being physically active, and barriers to further involvement. More specifically, these included weight loss, enjoyment, improved mood and lack of time due to other priorities like caring for family and doing housework. Examples of respondent statements that reinforce the psychological benefits associated with being involved in the program included:

‘It’s fun. At home it’s very hard for us to do exercise’ (A2), and ‘Doing some exercise is a big stress reliever. I get really exhausted, but when coming here, I just forget about all that. It’s like mom’s all-time favourite place’ (E5).

The emphasis women in the focus groups placed on psychological factors that provided an escape from the demands of their everyday lives, as well as relaxation and stress management, reflect these women’s perception that their lives are stressful, often due to competing demands of work and family.

The physical health benefits that contributed to women participating in PA programs, were fitness, post-pregnancy recovery, improved sleep, weight loss, and improved overall health. Examples of women respondents’ statements that typified the themes in physical health benefits include, ‘I feel better about myself and I tend to sleep better as well’ (E2), and one woman, who had recently given birth, stated

‘The recovery post-delivery is so much quicker. You don’t become a couch potato or you don’t feel like your body is extremely weak after delivery, which is usually the case for those who are not so active’ (E4).

Most of the physical benefits that women reported reflect the perception that their busy lives also have a physical impact on their bodies that can be reduced by suitable programs of PA.

Participants also recognized some educational benefit associated with the programs in which they participated, namely increased knowledge about the value of fitness. As stated by one participant,

‘I’ve learnt about cardio. Previously, I knew nothing and when I came here. The coach taught me how to increase my cardio; now I can exercise at home’ (G3).

Lack of knowledge among women in Malaysia about how the body and mind work and how the competing
demands of work and family duties, can impact negatively on their physical and psychological wellbeing. Women reported that instructors and program providers were alerting them to the benefits of PA for health.

Personal inhibitors to program involvement was the final second-order theme. Inhibitors included lack of time, carer duties, and housework. An example of a statement about inhibitors from a respondent was, 

‘I had to stop because my daughter started playschool’ (E4).

Such factors commonly identified as inhibitors of involvement in PA, are mostly manageable by relatively simple strategies that program providers can recommend to women who perceive them to be barriers to participation.

**Interpersonal factors**

Within the intrapersonal domain there was much discussion relating to social connectedness, particularly that participation in the PA program was an opportunity to meet people, and their participation reduced feelings of isolation. Furthermore, family and friends provided support and encouragement.

Participants in focus group interviews stated social connectedness related to the opportunity to meet people and this led to decreased feelings of isolation. One respondent positively stated that it was an opportunity to, ‘Make new friends, become healthier, share with others about happenings in life’ (T7), while another stated the program allowed her to,

‘Meet a lot of other moms who . . . become friends. They go through the same routes and challenges and we have similar discussion topics’ (E4).

Another strong theme was encouragement for participation in the programs was from friends and family. For example, one respondent noted ‘I only attend because of my friend. If she didn’t attend it would not be of interest to me’ (F4), whilst another stated

‘I think it’s the support and encouragement from the spouses. Most women can’t exercise because they want to take care of the kids’ (A3).

Although attending programs to be with friends appears to link closely with the social interaction theme, it is located here because the primary point related to how friends can motivate and be role models for these women’s PA. To avoid the PA inhibitor identified by participants, of caring for children, and to encourage these women to take time for themselves, spouses could do more than support the value of PA. For example, they can demonstrate their support by being prepared to look after the family, while these women attend programs.

The personality and social skills of the instructor was recognized as a social influence for encouraging women in programs and increasing the women’s enjoyment. One focus-group member stated ‘They become our friends’ (G5). Instructors can play multiple roles. Acting as another source of social interaction is a role that might not immediately appear critical to instructors whose focus is on the mechanics of PA programs.

**Organizational factors**

The women in the focus groups discussed issues relating to organizational factors less than they talked about intrapersonal and interpersonal factors. The organizational factors the women discuss related to scheduling of programs, the activities themselves, which were facilitated through music, as well as knowledge about the programs though media channels.

Appropriate scheduling of programs represented one theme classified as organizational. This theme related to recognizing that to recruit and retain women regardless of their work or life situation, programs need to be conducted at times that fit with the lifestyles of the women. For example, as noted by one respondent when discussing women who worked

‘Their timing is different. They are looking at 7 so they can exercise right after work and then go home 8 o’clock to cook dinner for the family’ (U7).

The women in the focus groups reflected their awareness that the demands of working and/or caring for a family left only a small window of opportunity for them to participate in PA programs. This suggests they need to believe the program content is worth fitting into that window.

Participants recognized that subsidized or free of charge programs encouraged their participation, this was a second theme that evolved. As reflected by one participant,

‘I was subsidised for this program as I brought a friend who joined. I think that helps bring more members’ (G3).

This finding indicates that expensive PA programs might appear to contradict the need for financial thrift.

Another theme that evolved from the focus group transcripts was programs tailored to what women wanted in the PA programs. Participants explained that they were encouraged to attend programs that catered for a number of factors, including their life stage, such as the ability to include their children in the program;
the fitness of individuals, such as allowing women to exercise at their own pace; and providing equipment women want, for example,

‘I feel that the machines here are made for us, … the machines in the normal gym are for both sexes, they are not specially tailored for women’ (G5).

The attraction that women expressed for activities and equipment that were designed specifically for their needs seems to reflect a perception among women that often PA is considered to be a domain that is more appropriate for males, so little effort is made to organize activities specifically for women.

The theme of varied exercise activities within PA programs was also evident. Varied activities typically enhanced program enjoyment and encouraged these women to participate. Emphasis on the need for variety in the program from session to session reflects that women in this study perceived that exercise activities can become boring and monotonous, increasing the risk of women losing interest and dropping out.

Inclusion of music emerged as a characteristic of exercise programs that facilitated participation. Inclusion of music helped to create a fun and enthusiastic atmosphere and, as noted by one participant,

‘It’s music that we know and having fun doing exercise’ (G1).

There are many ways in which music can facilitate enjoyment during PA, including acting as a distraction and being synchronized with movements both of which tend to reduce perceived exertion, making the exercise appear less demanding.

Finally, the theme pertaining to knowledge about programs through media channels was identified. This form of communication played a positive recruitment role in informing women about the existence of programs they could join. Social media referred to Facebook and emails that promoted the programs. For example, one respondent explained

‘The manager of the program started with a core group of girls. She got everyone’s emails, asked participants to bring a friend and their emails were added to the list. The email list grew and now there are almost 80.’(U4)

Women in the focus groups associated with the successful PA programs we identified seemed to be connected to social networking sites, which gave them the opportunity to inform their friends know about the programs in which they participated. It seems likely that women who felt socially isolated (see “Interpersonal factors” section) would find these social networks to be a surrogate for real social contacts. Joining a PA program that women in their network attended gave them the chance to spend time and build friendships with those contacts. Furthermore, focus group participants noted local media such as radio and television were effective means of recruiting participants.

Physical environmental factors
The women in the focus groups mentioned few physical environmental factors, relating to their PA participation. These related to access and the weather. One theme related to the problems associated with accessing program venues due to heavy traffic in Kuala Lumpur. As noted by one participant

‘I think some women find it difficult to attend at times because of the traffic jams’ (G5).

It is possible that women find it necessary to travel long distances to do the activity that interests them. This might reflect the limited options that currently exist in terms of programs designed specifically for women. Choosing activities close to home or work that are offered at appropriate times of day, such as immediately after work or near home in the early morning before work, could be an option if suitable programs can be found in the locality. This observation seems to be supported by the identification of distance of the PA program from home or work as a separate, but linked, theme. Programs that were in close proximity to the women’s work or home were reported to be more attractive. Otherwise, the time required to travel made it too difficult for these participants to attend. Encouraging women to find PA programs close to home or work depends on their availability. Thus, while we noted that women perceived heavy traffic to be the problem, this is a major environmental problem that is not likely to be resolved soon. Instead, it would seem a strategy could be for the development of more sport and leisure centers and gymnasia offering programs for women in locations chosen to be close to concentration of residential and work activity.

Difficulties presented by the weather were mentioned. The hot, humid environment with heavy rains made exercising outdoor difficult, as noted by one focus-group member, who stated, ‘Only on rainy days we cannot play’ (F4). The weather is an environmental factor that is even less controllable than traffic.

DISCUSSION
Given the limited research on factors of participation in PA programs for women in developing countries, this
The study provides unique insights. Overall, the findings of this study indicate that various domains of the socio-ecological model influenced the PA participation for women in this sample. These findings were similar to women in a developed country (Hanlon et al., 2010). Previous research has highlighted that sustainable PA programs are more likely to be successful when they target various aspects across the various socio-ecological domains (Sallis et al., 2015). In addition, there are often numerous factors that contribute to PA participation. In an attempt to interactively link factors across domains, according to participant responses, the intrapersonal domain was the most dominating in this study (Figure 1).

Interaction between the intrapersonal domain and other domains was common and is of no surprise since this was a dominating determinant of participation in PA programs for women. Furthermore, there is often more than one factor influencing participation. For example, friends (interpersonal) encouraged the woman participant to join the program to gain enjoyment (intrapersonal), exercise programs (organizational) provide relief from other commitments such as work and family (interpersonal) and adding to psychological benefits (intrapersonal), and music in the exercise program (organizational) encouraged enjoyment and stress relief (intrapersonal). In addition, the perception of time constraints (intrapersonal) due to traffic jams (environmental) prevented women at times to attend PA programs.

This study highlights opportunities to further strengthen PA programs for women. For example findings show the opportunity for programs to educate women on the value of fitness. Participants commonly referred to their busy lives and how it impacted on their bodies. There is an opportunity for programs to address the physical needs of these women, including health and fitness. Social and local media about the program was

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**Figure 1:** Factors influencing women participants in PA programs.
identified as a recruitment influence. This indicates an opportunity for managers to take advantage of media and enhance their promotional and retention content to include intrapersonal and interpersonal benefits for women of becoming involved. For example promoting how PA programs provide a social focus (Newson and Kemps, 2007), flexible schedules (Milne et al., 2014) and increases fitness (Hanlon et al., 2010), confidence (Eime et al., 2015b) and health (Milne et al., 2014). Providers could also encourage women to share their program experiences on social media, allowing women to connect, socialize, share and communicate, external to the program and thereby expanding their circle of friends (Jones and Fox, 2009).

The strong links to the interpersonal domain indicate that participants were influenced by intrapersonal factors more than any other factors. The findings indicate that these benefits increased the intrinsic motivation of the participants. People who are intrinsically motivated persist longer, make more effort, and gain more satisfaction and enjoyment in their participation in an activity (Deci and Ryan, 1985). This research demonstrates that there is an opportunity for providers to design and promote their programs according to the positive psychological wellbeing, physical health, and education benefits the programs offer to women.

This study found the connection between the interpersonal and intrapersonal domains was vital to recruit and sustain women in the PA programs. Social interactions were very important to these women, which complement the social relatedness as a major need proposed in Self-determination Theory (Ryan and Deci, 2000). The support from friends and family (Eime et al., 2015b), and the personality of the instructor (Hanlon et al., 2010) contributed to the psychological and educational benefits, and opportunity to meet people assisted with the psychological benefits. The valued connection and support of friends and family involved in the program and the encouragement given by the instructor to the participants in this study are opportunities for additional marketing strategies for providers to incorporate. Even though research on recreation for different ethnic groups reported significant differences on the role of social support on their participation (Tinsley et al., 2002), the social factors identified in this study were similar to those identified by women residing in western countries (Jones et al., 2010; Hanlon et al., 2014).

At the organizational level, participants from this study were encouraged by providers and motivated by appropriate scheduling, subsidized or free-of-charge programs, and exercises and equipment tailored to their ability as it related to their psychological and physical health benefits. This finding complements autonomy and competence related to self-determination theory (Ryan and Deci, 2000). Programs and equipment designed for women makes them feel more autonomous and women may more readily display competence based on programs tailored to their needs. Testimonials from participants, emphasizing the positive benefits associated with being involved in programs that are organized with women in mind, would be valuable content for marketing purposes. The factors identified at the organizational level are similar to previous research in western countries (Milne et al., 2014; Sport England, 2014) and reinforce the need for providers to listen to the voice of their participants, rather than assuming that they know what women want (Hanlon et al., 2014). The similarities provide an opportunity for providers to collaborate with managers in their associated national sport or PA program in western countries. Such collaboration should involve sharing information and resources that would assist providers in Malaysia to stimulate women’s participation in PA.

This study found the link between media and friends as positive recruitment strategies. At times, friends via social media and local radio and television promoting the programs attracted women to PA programs. Interestingly, endorsements of being physically active from trusted sources (e.g. doctor or health nurse) were not mentioned as sources of recruitment by women in our study. The influence of trusted sources that encourage women to participate in sport and PA programs has been well acknowledged by women in western countries (Cohen-Mansfield et al., 2004). One possible reason for excluding the influence of trusted sources could be that medical practitioners in the location of our study were not familiar with the PA programs in the area nor were they aware of the value these programs bring to the psychological wellbeing and physical health of women (Molanorouzi et al., 2015). If this is the case, there is an opportunity for providers to promote the physical and psychological health benefits of their PA to related community organizations, such as medical practitioners, including information about where they are located. Collaborating with medical centers (Cohen-Mansfield et al., 2004) and government and related community organizations (Caperchoine et al., 2009) are examples of potential directions for combined action to increase women’s participation in PA and promote programs for the physical health and psychological wellbeing of women in Malaysia.

Relating to environmental influences, traffic jams created a deterrent at times, for women attending PA programs. The population density in Kuala Lumpur is
Factors influencing women in PA programs

greater than many developed cities in developed countries. This reinforces country variance and contributes to different deterrents for women being physically active (Liu et al., 2008), as distance to PA programs was not a reported barrier in a study of women in a developed country (Hanlon et al., 2010). An environment contributor to women participating in PA programs was familiarity of the environment. One reason for this may be the importance of environmental safety for women (Wilbur et al., 2008) when participating. Findings show that even though the five domains of the social-ecological model influenced the PA participation for women in developed and developing countries, the factors within these domains can vary or have a stronger emphasis. For example, traffic jams and distance to programs were noted environmental deterrents for women in our study, whereas poor environmental facilities was the notable deterrent for women in a developed country (Hanlon et al., 2010). The environmental deterrents identified in this study signify the importance of providers locating programs close to residential or workplace settings (Ball et al., 2006). One option is for providers to collaborate with organizations that have the capacity to conduct PA programs, in particular work, school or health settings. Such collaborations would reinforce the benefits of locating PA programs in an environment with which women are familiar (Wilbur et al., 2008). In addition, it is important for authorities in Kuala Lumpur to commit to providing a suitable environment to encourage an active lifestyle (Poh et al., 2010). Strategies could include alternative ways to build homes, factories, and offices with integrated leisure facilities, or collaborate with other organizations to situate PA opportunities close to residential and workplace settings.

The findings from this study have limitations and also create opportunities for further research in this field. There are very few women-only programs in Malaysia; therefore, large scale studies on this topic are not feasible. To reinforce findings from our study or identify new findings, research on other non-western countries could identify similar and different factors that influence women from these countries. The findings from this research may assist other rapidly developing countries, especially those in Asia in which there have been large population shifts to uptake of personal and public mechanized transport, sedentary work and cultural factors that affect the involved women in PA programs. Culture and ethnicity were not identified as influencing factors in our study. Future research in non-western countries could focus more on this topic to determine what extent culture and ethnicity influence women in PA programs.

A study limitation was the focus on participants in PA as opposed to the large majority of women who do not currently participate. It should be emphasized that this study focused on women who are regular participants in successful programs. To identify why the majority of women in Malaysia do not participate in PA programs, it is important for research to examine the views of inactive women, and compare those findings to those of active women. The findings from this study could help to inform strategies to increase PA participation. The findings could also be piloted as an education resource for providers in Malaysia and other non-western countries to increase their knowledge about the ‘voice’ of participants and what attracts and sustains women from these countries in PA programs.

Participatory action research could expand from this study. Participants and/or non-participants could collaborate with managers from a PA organization to design programs for women. The process of participatory action research should empower people and lead them to increased control over their lives (Baum et al., 2006).

CONCLUSION

This study contributes to the sparse research relating to the factors encouraging women to participate in PA programs in non-western countries. Women are particularly influenced by intrapersonal factors to participate in PA programs. It is recommended that providers of PA programs seek to have strategic focus on modifiable factors, and factors across the different domains of the socio-ecological model. At the intrapersonal level there is an opportunity for providers to design and promote PA programs for women that highlight the psychological wellbeing, physical health and educational outcomes, whilst taking into account other factors such as recruitment strategies, scheduling and access.

Similar factors were identified by women in our study to research on women in western countries. This provides an opportunity for providers in Malaysia to utilize resources available in western countries and implement strategies to recruit and retain women. Expanding these findings to the wider multicultural, multilingual community, such factors are likely to vary between locations and need to be identified and considered in specific contexts when planning ways to increase participation by women in PA.

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