Gender differences in perceptions of the convenience of outdoor activity among elderly people with a physical disability

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Research Article

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Abstract

Objective: To clarify the relationships among health-related quality of life, social factors, behavioral factors and the self-reported convenience of outdoor activity among older Chinese people with a physical disability. Gender differences were studied.

Method: A cross-sectional study of 1216 community-dwelling persons over or equal to 60 with a physical disability from Chinese Xiamen’s Xiang’an District between May and December 2019. The theory of planned behavior was applied to generate gender-specific structural equation models predicting convenience perceptions. The standardized coefficients explained the contribution of the variance.

Results: The final structural models demonstrated good fit. Convenience of outdoor activity for both women and men was directly impacted by their physical functioning ($\beta_{\text{woman}} = 0.641$, $\beta_{\text{man}} = 0.675$, $p_{\text{both}} \leq 0.01$) and intention of participation in community physical activities ($\beta_{\text{woman}} = 0.134$, $\beta_{\text{man}} = 0.302$, $p_{\text{both}} \leq 0.01$), and indirectly by social and economic factors, pain, and role emotions. Positive mental health was more influential for women, while men were more influenced by social norms in the pathway.

Conclusions: Both gender models demonstrated good fit in predicting self-reported convenience of outdoor activity. Interventions targeting health-related quality of life, behavior and social factors could predict perceptions of the convenience of outdoor activities. Gender differences need to be considered.

Introduction

Outdoor activity benefits people’s physical and mental health

Outdoor activity has enormous benefits in terms of improving people’s physical health. A survey in four American cities found that adults who had used nearby parks more frequently in the past 30 days had a higher physical activity level than those who had used parks less frequently [1]. Liu has described an outdoor physical activity education intervention for community-dwelling older adults in Hong Kong using public outdoor exercise facilities. He found that it significantly improved physical activity and that the elevated physical activity level tended to be maintained over the following six months [2]. Besides specifically physical activity, other outdoor activity such as going shopping is also useful for restoring and maintaining the independence of the elderly [3]. Outdoor activity also has a significant positive impact on people’s mental health. Coventry reviewed outdoor activity in nature such as gardening and found that it improved the mental health of community-dwelling adults, including those with pre-existing mental health problems [4].

All of this makes it important to understand what controllable factors best promote outdoor activity for the elderly, especially for older people with a physical disability (OPWPD). This study evaluated the
convenience of outdoor activity (COA) as self-reported by OPWPBD and their related likelihood of undertaking it.

**Maintaining outdoor activity for older people**

Most of the elderly find it not easy to maintain a level of outdoor activity. Swedish researchers observed walking, the most common outdoor recreational activity, among community-dwelling elderly. Among those they observed, disability and long-term illness were common. More than half of them had disengaged from walking which they had practiced in the previous year. They cited declining health as the most common reason, but some found it too demanding or mentioned possible social context change [5]. But in another study those continuing active, social outdoor activity reported happiness, and the positive feelings made outdoor activity appealing and increased their likelihood of persisting [6].

This study was designed to test for any relationship between COA and quality of life, including physical functioning (Hypothesis H1-1) and mental health (H1-2, H1-3). What social factors influence COA was also explored (H1-4, H1-5). A hypothesized path model for predicting COA (Fig. 1) was thus tested.

The theory of planned behavior is a widely-used model for predicting behavior and behavioral intentions [7]. The theory suggests that behavior arises from behavioral intentions, which are determined by perceived behavioral control, which is a belief in one’s ability to complete something [8]. Based on theory of planned behavior, the study used the intention of participate in community physical activities (IPCPA) to represent outdoor activity intentions. Score on the role emotion domain of the SF-36 instrument represented perceived behavior control with respect to outdoor activity. The role emotion domain reflects three emotional effects: reducing time spent, accomplishing less, and not being careful. This study tested the idea that self-perceived convenience could be directly affected by IPCPA (H1-6), which could be predicted by role emotion scores (H2-1).

To study specific outdoor activity behavior, the research extended the theory of planned behavior by adding positive and negative psychological states as aspects of perceived behavioral control which might predict outdoor activity. As might be expected, greater enjoyment, more positive emotions and greater stress relief were found to predict stronger intentions to pursue outdoor physical activity in the future [9]. The hypothesis was that either a positive (H2-2) or a negative (H2-3) state of mental health could lead to a stronger IPCPA. Certainly clinical experience suggests that one’s level of physical functioning should affect IPCPA (H2-4).

**Social factors and pain indirectly affect COA through relating physical functioning**

Research (and indeed common sense) suggests that physical function should affect the convenience of outdoor activities [5]. Some factors affecting physical function are well understood, but social economics could also be relating to health and physical function. Carlson and his colleagues found that the united
States adults physical inactivity was associated with 11.1% of total health expenditure [10]. Chronic diseases accounted for 75 percent of annual health care costs in the United States [11], and people with cardiovascular disease [12] or with diabetes [13] who were physical inactive significantly increased health care costs. It is worth noting that adults with disabilities were more likely to be physically inactive than adults without disabilities. (47.1% vs 26.1%); moreover, these inactive adults with disabilities were 50 percent more likely to have chronic diseases than those who were active [14]. Medical expenditures increased greater for people with disabilities than for people without disabilities [15]. United States increased health care expenditures from $13,395 per person with disabilities in 2003 to $17,431 per person with disabilities in 2015. In contrast, non-disabled people were relatively stable (about $6700) [16]. Therefore, it is important to consider the relationship between social economics and physical function, and use social economics to predict COA for OPWPD. This study evaluated the socioeconomic status of its subjects (monthly medical spending and maximum annual medical spending) to test the hypothesis that it could predict physical function (H3-1), and then directly or indirectly predict COA.

Another social factors, subjective norms refer to an individual’s perception of social pressure or friendly support to engage in or refrain from certain behavior [17]. Subjective norms are thus part of one’s social context [18] which influence one’s behavior [19], including one’s physical activity [20]. Subjective norms in societies worldwide often encourage negative attitudes towards persons with a disability [21]. Subjective norms therefore should also be considered in predicting COA for OPWPD. This study’s hypothesis was that Subjective norms impact the physical activity of OPWPD (H3-2). The questions “Do you think society respects people with disabilities today?” and “Do people have positive attitudes towards you?” were used to quantify Subjective norms.

Pain may be a trigger for inability to fulfill one’s functional (activity) expectations. It causes both physical and psychosocial dysfunction. This is termed the fluid concept of pain disability [22]. This study hypothesized that body pain could affect physical function (H3-3) and perhaps also COA (H1-7). The body pain indicators came from domains of the SF-36. There were two variants: body pain experienced in the previous one month, and the extent to which pain interfered with normal work.

The short form 36-item health questionnaire is a very popular instrument for evaluating health-related quality of life; it covers both physical and mental health. Its eight domains are role emotional, role physical, mental health, physical function, body pain, general health, vitality, and social functioning [23]. SF-36 scores adequately reflect health-related quality of life, but the instrument pays little attention to the motivations underlying behavior. Therefore, this study combined some SF-36 domain scores with IPCPA to predict subjective outdoor activity motivation, participation, and convenience perceptions. The social context might directly or indirectly affect convenience perceptions, IPCPA and perceptions of COA were investigated together.

**Gender differences**

Persons with a disability may exhibit gender difference in the basic and instrumental activities of daily living [24]. Research has shown that gender can influence the experience and expression of pain, and also
coping mechanism [25]. Gender might also influence perceptions of COA.

**Methods**

**Patients and methods**

This study was a cross-sectional survey describing a current situation. All of the people with disabilities participating were in Xiamen China. The investigation was conducted between May and December of 2019. A total of 211 people were involved in conducting it: 27 medical workers from Xiamen's Fifth Hospital, 118 disabled liaison officers and 66 volunteers from villages and towns in Xiamen's Xiang’an District. All of the investigators received preparatory training before administering the questionnaire survey in all of the villages and towns of Xiang’an District. The survey had two parts. The first part solicited general information. It was administered some offices of the People with Disabilities Federation or at the homes of people with disabilities. The second part of the survey collected information relevant for rehabilitation. It included the SF-36, which filled in by people with disabilities with guidance from medical staff. For people with disabilities who could not fill in the questionnaire by themselves, it was filled in by medical personnel with face-to-face explanation of the items. If people with disabilities had difficulty in understanding (due for example to poor hearing), a caregiver answered on their behalf. In order to ensure the quality of the procedures, the head of the research conducted regular spot checks and supervision.

Totally 2743 people with disability were under criteria screen. Interviewees were screened using the inclusion and exclusion criteria shown in Fig. 2. The inclusion criteria were as follows: The subject were physically disabled [26]; they were able to visit local clinic for interview, and were cooperative; their intellectual ability were within the normal range (Abbreviated Mental Test score ≥ 6); age over or equal to 60 years; gender identified; and more than 15% missing values were excluded. Finally a total of 1216 OPWPD were investigated, of which 51.2% were women. Their demographics are described in table I.

Insert Fig. 2 about here
Table 1
Demographic characteristics of the participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Female N = 623 (51.2%)</th>
<th>Male N = 593 (48.8%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>Missing Records(N)</td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 69</td>
<td>213 (34.2%)</td>
<td>327 (55.1%)</td>
</tr>
<tr>
<td>70–79</td>
<td>180 (28.9%)</td>
<td>177 (29.8%)</td>
</tr>
<tr>
<td>80–89</td>
<td>181 (29.1%)</td>
<td>77 (13.0%)</td>
</tr>
<tr>
<td>90–99</td>
<td>49 (7.9%)</td>
<td>12 (2.0%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>372 (60.2%)</td>
<td>76 (13.0%)</td>
</tr>
<tr>
<td>Elementary</td>
<td>199 (32.2%)</td>
<td>313 (53.4%)</td>
</tr>
<tr>
<td>Secondary or over</td>
<td>47 (7.6%)</td>
<td>197 (33.6%)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>245 (40.4%)</td>
<td>391 (67.0%)</td>
</tr>
<tr>
<td>Unmarried</td>
<td>362 (59.6%)</td>
<td>193 (33.0%)</td>
</tr>
</tbody>
</table>

* Note: cases with missing age were not excluded if they could be considered adults based on their education or marital status

Instrument scaling

The Chinese version of the SF-36 is based on American norms [27, 28]. For this study the instrument’s scaling was reset so that a higher score consistently indicated better functioning or condition.

COA was quantified by asking two questions. One was, “Can you easily get where you want to go?” with very inconvenient (1), not convenient (2), generally convenient (3), very convenient (4), and absolutely convenient (5) as the response choices. The other question was, “How often do you go out?”: less than five times within six months (1), one or two times a month (2), once a week (3), or three times a week (4).

Participation intentions were quantified by asking each subject whether they were willing to engage in CPA and whether they expected to have a chance to do so. The replies were scored as (1) for no or (2) for yes.

Social norms were quantified by asking, “Do people have positive attitudes towards you? scored (1) for not good, despise me, (2) for generally and (3) for very good, respect me. The subjects were also asked,
“Do you think society respects people with disabilities today: very little (1), little (2), generally (3), very much (4), absolutely (5).

Each respondent’s socioeconomic status was evaluated by asking them their monthly medical spending and their maximum annual medical spending. Both replies were scored as >¥2000 RMB (1), ¥1000–1999 (2), or <¥1000 (3).

Statistical analyses

Exploratory factor analysis was used to verify the number of potential variables and their relationships through applying varimax rotation [29, 30]. The structural equation modeling used version 1.1.0 of the Scientific Platform Serving for Statistics Professionals supplied by Suzhou Zhongyan Network Technology [30]. The structural equation modeling’s graphical description integrated the SF-36 and social behavior factors based on the theory of planned behavior and the results of previous studies. The model’s good fit was indicated by $\chi^2/df < 3$ and a goodness-of-fit index, comparative fit index, normed fit index and un-normed fit index all > 0.90. The root mean square approximation error was < 0.05. The parameter estimation used a maximum likelihood model [30, 31].

Results

Although the mental part of the SF-36 is often divided into mental health and vitality groups, their positive or negative aspects strongly loaded together as one factor based on exploratory factor analysis. The mental variants were therefore grouped into positive mental health and negative mental latent factors instead of mental health and vitality. The respecified hypothesized model demonstrated good fit. The directions of the relationships among the variables were unchanged, but non-contributing variables were deleted. The final model (shown in Figs. 3 and 4) had nine factors consisting of 25 items with COA as the dependent factor. The standardized factor loadings of the final model ranged from 0.41 to 0.98, indicating that all the items in the model were valuable predictors of COA (Table 2). Both genders showed good model fit. The fit indices are shown in Table 3.
Table 2
Standardized item loadings of the final model’s variables

<table>
<thead>
<tr>
<th>Latent Factors</th>
<th>Items/variants</th>
<th>Standardized factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>COA</td>
<td>Convenience of OA</td>
<td>0.806</td>
</tr>
<tr>
<td></td>
<td>Frequency of OA</td>
<td>0.51</td>
</tr>
<tr>
<td>body pain</td>
<td>Pain- Magnitude</td>
<td>0.721</td>
</tr>
<tr>
<td></td>
<td>Pain- Interfere</td>
<td>0.732</td>
</tr>
<tr>
<td>subjective norms</td>
<td>Social respect</td>
<td>0.701</td>
</tr>
<tr>
<td></td>
<td>Social attitude</td>
<td>0.867</td>
</tr>
<tr>
<td>positive mental health</td>
<td>Pep/ Life</td>
<td>0.556</td>
</tr>
<tr>
<td></td>
<td>Peaceful</td>
<td>0.739</td>
</tr>
<tr>
<td></td>
<td>Energy</td>
<td>0.566</td>
</tr>
<tr>
<td></td>
<td>Happy</td>
<td>0.703</td>
</tr>
<tr>
<td>IPCPA</td>
<td>Intention to PA</td>
<td>0.555</td>
</tr>
<tr>
<td></td>
<td>Opportunity to PA</td>
<td>0.69</td>
</tr>
<tr>
<td>physical function</td>
<td>Lift, Carry the shopping</td>
<td>0.648</td>
</tr>
<tr>
<td></td>
<td>Moderate activities</td>
<td>0.794</td>
</tr>
<tr>
<td></td>
<td>Climb one flight of stairs</td>
<td>0.763</td>
</tr>
<tr>
<td></td>
<td>Walk one hundred metres</td>
<td>0.838</td>
</tr>
<tr>
<td></td>
<td>Bathe, dress</td>
<td>0.755</td>
</tr>
<tr>
<td>role emotional</td>
<td>Cut down time</td>
<td>0.912</td>
</tr>
<tr>
<td></td>
<td>Accomplished less</td>
<td>0.941</td>
</tr>
<tr>
<td></td>
<td>Not careful</td>
<td>0.955</td>
</tr>
<tr>
<td>Negative mental health</td>
<td>Down in the dumps</td>
<td>0.727</td>
</tr>
<tr>
<td></td>
<td>Blue/ Sad</td>
<td>0.913</td>
</tr>
<tr>
<td></td>
<td>Worn out</td>
<td>0.655</td>
</tr>
<tr>
<td>social economics</td>
<td>maximum medical cost yearly</td>
<td>0.468</td>
</tr>
</tbody>
</table>

*Note: COA = convenience of outdoor activity, IPCPA = intention to participate in community physical activities*
<table>
<thead>
<tr>
<th>Latent Factors</th>
<th>Items/variants</th>
<th>Standardized factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>medical cost monthly</td>
<td>0.658</td>
</tr>
</tbody>
</table>

*Note: COA = convenience of outdoor activity, IPCPA = intention to participate in community physical activities

Insert Table 2 about here

Table 3
Fit indices of the final gender fit modes

<table>
<thead>
<tr>
<th></th>
<th>χ²/df</th>
<th>GFI</th>
<th>RMSEA</th>
<th>CFI</th>
<th>NFI</th>
<th>NNFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>2.304</td>
<td>0.905</td>
<td>0.048</td>
<td>0.944</td>
<td>0.905</td>
<td>0.932</td>
</tr>
<tr>
<td>Male</td>
<td>2.028</td>
<td>0.93</td>
<td>0.043</td>
<td>0.963</td>
<td>0.930</td>
<td>0.955</td>
</tr>
<tr>
<td>Fit criteria</td>
<td>&lt; 3</td>
<td>&gt; 0.90</td>
<td>&lt; 0.05</td>
<td>&gt; 0.90</td>
<td>&gt; 0.90</td>
<td>&gt; 0.90</td>
</tr>
</tbody>
</table>

*Note: GFI = goodness-of-fit index, RMSEA = the root mean square approximation error, CFI = comparative fit index, NFI = normed fit index, NNFI = un-normed fit index

Figure 3, 4 shows that the following significant relationships support the hypotheses. For both women and men around 65% of the variance in COA was directly explained by their physical functioning ($\beta_{\text{woman}} = 0.641$, $\beta_{\text{man}} = 0.675$, $p_{\text{both}} \leq 0.01$), and then by IPCPA ($\beta_{\text{woman}} = 0.134$, $\beta_{\text{man}} = 0.302$, $p_{\text{both}} \leq 0.01$) secondarily. Physical function was in turn directly predicted by social economics ($\beta_{\text{woman}} = 0.285$, $\beta_{\text{man}} = 0.475$, $p_{\text{both}} \leq 0.01$) and pain ($\beta_{\text{woman}} = 0.326$, $\beta_{\text{man}} = 0.446$, $p_{\text{both}} \leq 0.01$) while IPCPA was predicted by the role emotion scores ($\beta_{\text{woman}} = 0.388$, $\beta_{\text{man}} = 0.306$, $p_{\text{both}} \leq 0.01$) and by physical function ($\beta_{\text{woman}} = 0.124$, $\beta_{\text{man}} = 0.185$, $p_{\text{both}} \leq 0.05$). Models revealed gender differences. In women, positive mental health affect convenience perceptions ($\beta = 0.206$, $p \leq 0.01$) and intentions ($\beta = 0.171$, $p \leq 0.01$) to participate; among men, social norms affected physical function ($\beta = 0.121$, $p \leq 0.05$).

Insert Fig. 3 about here

Insert Fig. 4 about here

**Discussion**

**SF-36 scores and social-behavior contextual factors can predict COA**

In this study gender-specific structural equation models showed that SF-36 scores and social-behavior factors can predict COA for elderly persons with a disability, at least in southern China. The two genders showed some common and some different influences.
The SF-36 is a valuable instrument, but it does not aim to predict behavior. In attempting to do so it is important to include other factors such as IPCPA, which influences towards COA. Social factors such as economics can also indirectly predict COA via physical function. Note that lower monthly or/and annual medical costs cannot be the cause of better physical performance, but there is an undeniable relationship that can be used to predict. The data suggest that a subset of SF-36 scores integrated with social and behavioral factors can usefully predict perceptions of COA and thus behavior. Neither should be neglected in promoting perceptions of convenience among the elderly.

As generally knowing, environment factors such as the width of the bike path and the bus service may affect COA. However, they are often invariant factors beyond the clinician's control. This study explored the variant factors: SF-36 and social behavior context in order to inspire our rehabilitation controllable strategies.

In recent years, researchers have shifted from studying the barriers and facilitators of leisure time physical activities to developing and delivering strategies [32, 33], which include behavioral interventions, such as promoting physical activity for multiple sclerosis based on SCT theory [34], and for cerebral palsy based on TPB theory [35]. However, there are still inadequate studies on together QOL with social-behavior factors for people with disabilities’ PA, and insufficient study of multiple types of physical disabilities. The study bridged this gap by investing integrated QOL and social behavior model for various physical disabilities disability.

**Poor mental health and pain may not directly affect perceptions of COA**

It is easy to imagine that negative mental health conditions such as depression or pain could play a significant direct role in influencing perceptions of COA. But the data show that they do not always affect those perceptions of COA directly as physical function and IPCPA do. Although poor mental health indirectly affected them among women through positive mental health ($\beta = 0.488$, $p \leq 0.01$). That suggests that focusing active physical functioning and positive intentions could be more helpful than negative mental health in promoting community outdoor rehabilitation activities. If focused entirely on negative mental health risks, organizers of such activities could be missing other important contributing factors such as physical function and behavioral intentions, possibly compromising their effectiveness. Pain understandably indirectly affects perceptions of convenience by impeding physical function, but focusing entirely on limiting pain without otherwise improving physical function would probably be sub-optimal.

**Gender differences**

The data show that among women, positive mental health affects perceptions of convenience and intentions to participate directly. It seems to fit with the usual presumption that “women are more emotional than men” [25]. So increasing women’s positive mental health, life satisfaction and happiness should be emphasized in improving female participation in outdoor rehabilitation activities. Among men,
social norms affect their physical functioning, and then indirectly their perceptions of convenience and intention to participate. It could be explained by the stereotype of men as needing to appear brave and manly. When social norms support a positive attitude towards them, that encourages them to improve their physical functioning to look more masculine, an image in which strength, endurance, and stoicism are valued [25]. That suggests us that it is important to improve physical functioning norms to improve convenience perceptions among elderly persons with a disability.

It is important to note that subjects were all from Xiamen City in China. The sample certainly does not properly reflect the entire disabled population even in southern China, not to mention the rest of the world. It is also important to bear in mind that the associations observed among SF-36 ratings, IPCPA, and social contexts were cross-sectional. Additional valid longitudinal data are needed. And although the interviewers and data collectors were all especially trained, some self-reporting bias could still have intruded. This study did not include all domains and all variants of the SF-36 in its analyses based on the hypotheses and developing the best model fit. Some relationships may therefore have been under-developed. And finally, this study did not evaluate the natural or built environment, which certainly contributes to the objective convenience of outdoor activities. Future studies should consider including this important factor.

**Conclusions**

The convenience perceptions of elderly people with a disability should be given closer attention in their rehabilitation. An integrated SF-36 and social behavior model has been shown to usefully predict such perceptions with respect to outdoor activity. The data suggest that physical functioning and IPCPA impact perceptions of COA directly, so they should be the target of interventions. Role emotion, body pain and social economics indirectly influence the perceptions, so they also should be considered in designing outdoor activity interventions. The data show that positive mental health factors can directly affect IPCPA and perceptions of COA among women; while social norms are influential among men. This should inspire clinicians to emphasize gender differences in predicting responses to outdoor rehabilitative activities.

**Abbreviations**

older people with a physical disability (OPWPD)

the convenience of outdoor activity (COA)

Short form 36-item health survey (SF-36)

intention to participate in community physical activities (IPCPA)

hypothesis (H)
Declarations

Ethics approval and consent to participate

This study was part of the Xiamen city government's program of improving precision rehabilitation for persons with a disability (access number: 201720). The study's protocols were reviewed and approved by the ethics committee of the Xiamen People with Disabilities' Federation (Approval Number 12/2017). Written informed consent form was obtained from subjects and/or their legal guardian(s). All methods were carried out by relevant guidelines and regulations.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and analyzed during the current study are available from the corresponding author TBY on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors’ contributions

QX did the statistical analysis and drafted the manuscript. YYL collected the data and revised the manuscript. TBY designed the study and critically revised the manuscript. TBL designed the questionnaire and contributed to the funding acquisition. YQH, XHZ, JHL, DWS, FW, XL, and YZ contributed to the data analysis and data collection. All of the authors have seen and approved the final manuscript.

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YYL, YQH, XHZ, JHL, DWS, FW, XL, & YZ: Physician & faculty of the 5th Hospital of Xiamen, Xiang’an Branch of the First Affiliated Hospital, Xiamen University, Xiamen, China.

References


Figures
Figure 1

Hypothesized integrated SF-36 and social-behavior model of predicting COA

Notes. COA = convenience of outdoor activity, IPCPA = intention of participation in community physical activities, H = hypothesis. The latent factors in blue come from the SF-36.
Figure 2

Inclusion and exclusion flowchart

Note: AMT = Abbreviated Mental Test
Figure 3

Standardized coefficients relating factors in the final integrated model predicting female COA.

Notes. COA = convenience of outdoor activity, IPCPA = intention to participate in community physical activities, H = hypothesis,

*** indicates a relationship significant at the \( p \leq 0.01 \) (** \( p \leq 0.05 \)) level of confidence. Solid lines indicate significant correlation. Dash lines indicate not-significant correlation, and unsupported hypotheses.
Figure 4

Standardized coefficients relating factors in the final integrated model predicting male COA.

Note. COA = convenience of outdoor activity, IPCPA = intention to participate in community physical activities, H = hypothesis,

*** indicates a relationship significant at the p≤0.01 (**) p≤0.05) level of confidence. Solid lines indicate significant correlation. Dash lines indicate no significant correlation and an unsupported hypothesis.