Self-Efficacy and Participation in Physical and Social Activity Among Older Adults in Spain and the United States

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Purpose: We explored Bandura’s self-efficacy theory as applied to older adult (aged 63–92) participation in physical and social activity in a cross-cultural study. Design and Methods: Older adults in Spain (n = 53) and the United States (n = 55) completed questions regarding self-efficacy, outcome expectancy, and participation in physical and social activities. Results: Self-efficacy significantly predicted both physical and social activity in both Spain and the United States. Outcome expectancy did not significantly predict either activity, nor did education, gender, or overall health. Modified and new self-efficacy measures proved reliable in both samples. Implications: This study enhances understanding of how self-efficacy motivates participation in physical activity, as noted in previous studies, as well as provides a new understanding of what motivates participation in social activities. The high reliability of the new measures used in this study provides evidence for further use of these measures in other contexts. It is important to note that this study further supports the use of Bandura’s theory of self-efficacy for cross-cultural applications.

Key Words: Efficacy, Outcome expectancy, Exercise, Motivation, Cross-cultural

Global demographics will look very different in 50 years because much of the world’s population is aging quickly. In the United States, “by 2050, 1 in 5 . . .—more than 80 million in all, and more than
twice the present number—will be age 65 and above” (Older Americans, 2002 as quoted in Papalia, Sterns, Feldman, & Camp, 2007, p. 19). The number of older adults (65 or older) in Spain will almost double during the next half century; it is predicted that by 2050, approximately 13 million Spaniards will be within this age group (Sancho Castiello, Abellán, Ortiz, & Polo, 2002). Because many Western countries are experiencing rapid growth in their elderly populations, international understanding of the contributions to older adults’ well-being should grow alongside these population changes.

Continued physical activity throughout the adult years positively affects multiple physical capabilities and offsets physical losses due to aging (Bassey, 2000; Hogan, 2005). Barriopedro, Eran˜a, and Mallol (2001) found that in Spain, older adults who participated in physical activity reported greater levels of life satisfaction and lower levels of depression than their sedentary counterparts. Data from Sweden (Hilleras, Jorm, Herlitz, & Winblad, 1999), Finland (Ruuskanen & Ruoppila, 1995), and the United States (McAuley et al., 2000) show that physical activity exhibits a strong positive association with well-being for older adults.

In addition to physical activity, social relationship variables such as social engagement and social networks (Berkman, Glass, Brissette, & Seeman, 2000; Seeman, 2000) protect older adults’ health in many cultures. Su and Ferraro (1997) found that social integration was positively correlated with older adults’ self-rated health in Fiji, Korea, Malaysia, and the Philippines. In Brazil, greater social integration and a healthy balance of social exchange have been associated with better mental health in later life and fewer depressive symptoms (Ramos & Wilmoth, 2003). A study of older adults in Spain found that greater social networks, social integration, and social engagement were associated with slower cognitive decline (Zunzunegui, Alvarado, Del Ser, & Otero, 2003).

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Thus, evidence linking participation levels in physical and social activities with health exists in several cultural contexts. How and why older adults decide to participate in physical and social activities, however, are not as well understood. Although the benefits of exercise for health and well-being are well established, estimated adherence to medical advice for exercise ranges from only 50% to 65% (Friedman, 2002). Older adults’ beliefs about physical and social activity should be related to their willingness to engage in these health-promoting behaviors. Hence, we examined older adults’ beliefs about physical and social activity because these beliefs may have important implications for helping to maintain health across cultural contexts.

There have been several investigations regarding the motivations, intentions, attitudes, and adherence of older adults toward physical activity. Examples of physical activity determinants include (a) attitudes (Gravelle, Paré, & Laurencelle, 1997), (b) cultural norms (Dergance et al., 2003; Gambetta & DePauw, 1995; Shepard, 1994), (c) positive and clear motives (Cousins, 2003), (d) perceived benefits (Dergance et al., 2003; Gravelle et al., 1997; Resnick & Spellbring, 2000), (e) perceived barriers (Dergance et al., 2003; Shepard, 1994), and (f) lack of knowledge regarding benefits (Dishman, 1994).

Many studies have found Albert Bandura’s (1977, 1997) social–cognitive theory of self-efficacy to be particularly useful in explaining physical exercise behavior among older adults in the United States (McAuley, 1993; McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003; McAuley et al., 1999; Resnick, Orwig, Magaziner, & Wynne, 2002; Resnick, Palmer, Jenkins, & Spellbring, 2000). This theory takes into account two levels of expectations that are related to self-confidence and knowledge regarding the behavior. Bandura asserted that forethought regulates human motivation and action and that this control is based on two main types of beliefs: self-efficacy, which is a person’s perceived capabilities to perform a certain behavior in order to obtain a desired outcome; and outcome expectations, which are an individual’s beliefs that participating in a certain behavior will produce a specific consequence.

Bandura (1977, 1997) argued that people will choose a course of action based on their expectation about their own ability to perform a given behavior (e.g., “I am confident that I will participate in 20 min of exercise even if I am tired”). This self-perception of capability is referred to as self-efficacy. Self-efficacy is based in part on a person’s performance history with the behavior in question (e.g., “I used to walk a lot”) as well as general self-statements a person makes about himself or herself (e.g., “I can rise to a challenge”). A person also has an expectation about what the outcome of his or her behavior will be (e.g., whether a person believes the evidence that exercise has benefit). Bandura’s theory proposes that higher expectations of both self-efficacy and outcome expectancy will lead to greater adherence to a given activity.

To our knowledge, no research has been conducted regarding social activity determinants for older adults using self-efficacy theory (Bandura, 1977, 1997). Given the evidence that physical activity and social activity provide similar benefits for older adults’ health (higher levels of activity associated with increased health; Barriopedro et al., 2001; Hogan, 2005; Ramos & Wilmoth, 2003) and that Bandura’s (1977, 1997) theory has proven useful in predicting physical activity, this study explored how Bandura’s theory might help to explain participation in social, as well as physical, activity. We decided to look at self-efficacy as an explanatory variable of participation rather than participation as an explanatory variable of self-efficacy due to the abundant research showing self-efficacy to account for a significant amount of variance in physical activity participation. Furthermore, research has not shown physical activity to predict much variance (4%) in self-efficacy (Langon & Marotta, 2000).

We chose to examine variables associated with social and physical activity among older adults in two countries, Spain and the United States, where variation in social systems and dominant values can provide a broader test of self-efficacy theory than could be found in only one cultural context. Bandura (1995) cautioned against equating self-efficacy with individualism, claiming that “a high sense of personal efficacy contributes just as importantly to group directedness as to self-directedness” (p. 34). Thus, in addition to assessing self-efficacy in relation to social as well as physical activity, it is important to consider self-efficacy and its correlates in cultural contexts where individualism may be of lesser importance than is the case in the United States. Researchers have consistently characterized the traditions and values of most European countries, including Spain, as collectively oriented (Gouveia & Clemente, 2000; Gouveia, Clemente, & Espinosa, 2003; Gouveia, de Albuquerque, Clemente, & Espinosa, 2002), which contrasts with the strong emphasis on individualism as a core value in the United States (Hofstede, 1980; Triandis, 1989).

We predicted that Bandura’s (1977, 1997) theory of self-efficacy and outcome expectancy would explain a significant amount of variance in both physical and social activity behavior for older adults. Specifically, we predicted that self-efficacy and outcome expectancy would positively influence participation for both physical and social activity, and this pattern would persist across the two cultural settings under investigation. Oettingen (1995) and Bandura (1995) suggested the similar positive effect of self-efficacy on performance in many different cultures. Moreover, Luszczynska, Gutiérrez-Doña, and Schwarzer (2005) found that across multiple cultures, general self-efficacy constructs were similarly related
to a variety of psychological constructs, such as stress appraisals, social relationships, quality of life, and self-esteem. Thus, we assumed that if general self-efficacy has universal application, specific self-efficacies (in our case, physical and social activity self-efficacies) would likely show the same universal pattern.

**Methods**

**Participants**

**Spanish Sample.**—Participants were 53 White, older adults (32 women, 20 men, 1 did not report gender) aged 63 to 92 ($M = 78.04$ years, $SD = 7.36$). All participants were residents of the greater Madrid community. Twenty participants were solicited from an older adult residence located in the Madrid suburbs. Ten participants were solicited from a senior citizens’ center, and 23 participants who volunteered were drawn from the general community near the center of Madrid.

**U.S. Sample.**—We selected this sample to match the Spanish sample in terms of gender, solicitation place, and age range. Participants were 55 White, older adults (31 women, 24 men) aged 64 to 89 ($M = 75.46$ years, $SD = 6.15$) from the Charlotte region of North Carolina. Twenty older adults were solicited from a suburban continuing care retirement center. Eleven participants were solicited through a senior citizens’ center, and 25 participants were drawn from a local college’s list of potential older adult research participants.

We encountered a significant difference between samples regarding formal education. Among Spanish participants, $62\%$ had six or fewer years of education and $34\%$ had seven or more years, with the highest recorded as 15 years. Among the U.S. participants, all had at least 12 years of education, with the highest recorded as 24 years. Spanish participants had completed an average of 6.32 years ($SD = 3.31$) of education, whereas the American participants had completed an average of 16.31 years ($SD = 2.52$). In general, there is a difference in education between Spain and the United States, especially for older generations. Also, the overall health of the two samples appeared to differ slightly. We investigated this variable by asking the participants how they would rate their health at that point in time. There were four response categories: excellent ($4$), good ($3$), fair ($2$), and poor ($1$). The Spanish sample had a mean rating of $2.6$ ($SD = 0.77$), and the U.S. sample had a mean of $3.2$ ($SD = 0.73$). Any differences in results cross-nationally could have reflected, at least in part, differences in health and educational levels in the two samples. Thus, we cannot claim the samples to be a precise demographic match. The benefit of collecting these two convenience samples from different locations, however, was that it allowed us to determine whether data patterns replicated across this cultural and demographic divide.

**Measures**

**Physical Activity.**—We measured level of participation in physical activity by asking people how many times per week they participate in at least 20 min of continuous physical activity, such as exercise classes, swimming, or walking as an exercise. We used the revised Self-Efficacy for Exercise scale (Resnick et al., 2000) to measure self-efficacy for physical activity. It includes nine items that focus on self-efficacy expectations related to perceived capability to partake in physical activity if given challenges are present (see Appendix A). Resnick and colleagues (2000) demonstrated high internal consistency and concurrent validity for this measure. We used the Expected Outcomes for Physical Activity scale (Steinhardt & Dishman, 1989), a 12-item measure that asks participants to indicate their level of agreement with expected outcomes, to measure outcome expectations for physical activity (see the first 12 items of Appendix B). Steinhardt and Dishman found good internal reliability and evidence of validity for this measure.

Because the Steinhardt and Dishman (1989) items all appeared to be individualistic in character, we added 12 collectivistic items to the physical activity outcome expectancy measure (Items 13–24 in Appendix B) in order to compensate for the possible bias of the original measure in cross-cultural research. By adding the 12 new items we attempted to improve the applicability of the measure across cultures that might differ in individualist or collectivist characteristics and, thus, might show significant response differences if items only address one type of cultural norm.

**Social Activity.**—We measured level of participation in social activity by asking people how many times per week they participate in social activities such as gathering for coffee, meeting in a park to chat, or going shopping with friends or family. We adapted self-efficacy and outcome expectancy measures of physical activity participation to social activity participation because we were not able to identify published measures of efficacy for social activity. We adapted the Self-Efficacy for Exercise scale (Resnick et al., 2000) to create a self-efficacy for social activity measure by asking participants how confident they were that they could participate in social activities at least three times per week given the presence of certain barriers. We changed only one item from the physical activity self-efficacy measure (see Appendix C). The original item asked about physical activity participation if the person was alone. When we applied the original measure to
social activity, we changed that item to “you felt lonely within this group” because, by definition, a person could not be alone if he or she was participating in a social activity.

We adapted the Expected Outcomes for Physical Activity scale (Steinhardt & Dishman, 1989) for social activity outcome expectancy by changing 4 of the original 12 items (see Appendix D). Our objective was to maintain similar underlying constructs as in the physical activity outcome expectancy scale. Because the social activity outcome expectancy measure appeared to inherently provide a collectivistic dimension to the scale due to its focus on social activity, we judged that no extra items were needed (unlike the physical activity outcome expectancy scale).

Procedure

Older adults were asked to take part in a study regarding their views on participation in physical and social activities. Participants were told that the study would be conducted in an interview or survey format in a semitrafficked place such as a coffee shop, activity room in an older adults’ residence, or outdoor park area. The format depended on the participant’s physical ability and desire to read and answer the questions. Almost all participants in the United States opted to read the questions while the interviewer was present, whereas most of the Spanish participants opted to have the questions read to them and give verbal responses. Perhaps this format difference reflected the educational differences between the two settings.

All participants in Spain were given the Spanish-language measures, and all of the U.S. participants used the English version. (All measures were translated into Spanish by one person and translated back into English by another person to ensure linguistic fidelity.) We counterbalanced the order of the physical and social measures to control for any possible order effects. Roughly half of the participants received the physical self-efficacy and outcome expectancy measures first, followed by the social self-efficacy and outcome expectancy measures. The other half of the participants received the social activity measures first. There was no significant order effect in the analyses, so we do not discuss order further. After receiving the measures for both activities, participants were asked about their weekly participation in physical and social activities and then answered demographic questions, such as level of education and overall health.

Results

Reliability of Measures

We calculated internal reliability values for the total index score of each self-efficacy measure and outcome expectancy measure. All scales showed high internal reliability (see Table 1). The self-efficacy measure for social activity yielded slightly higher reliability (Cronbach’s alpha) when the one changed item was included, so all reported analyses that employed the self-efficacy for social activity measure included all nine items. Similarly, the physical activity outcome expectancy scale that included all 24 items (individualistic and collectivistic) yielded higher internal reliability results than the original measure (Steinhardt & Dishman, 1989) in both samples. Because of this improvement in reliability, reported analyses with the physical activity outcome expectancy measure included all 24 items.

Analyses

We used ordinary least squares multiple regressions to test whether in each sample (a) self-efficacy of physical activity and outcome expectancy of physical activity could simultaneously explain variance in physical activity participation, and (b) self-efficacy of social activity and outcome expectancy of social activity could simultaneously explain variance in social activity participation. We also entered gender, years of education, and overall health as independent variables in these analyses to control for their influence when assessing the association of self-efficacy and outcome expectancy with physical and

Table 1. Cronbach’s Alpha for the Self-Efficacy and Outcome Expectancy Measures in Spain and the United States

<table>
<thead>
<tr>
<th>Measure</th>
<th>Spain (n = 53)</th>
<th>United States (n = 55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical self-efficacy</td>
<td>0.914</td>
<td>0.933</td>
</tr>
<tr>
<td>Social self-efficacy (8 items)*</td>
<td>0.890</td>
<td>0.878</td>
</tr>
<tr>
<td>Social self-efficacy (9 items)†</td>
<td>0.891</td>
<td>0.895</td>
</tr>
<tr>
<td>Physical outcome expectancy (12 items)‡</td>
<td>0.797</td>
<td>0.805</td>
</tr>
<tr>
<td>Physical outcome expectancy (24 items)‡</td>
<td>0.914</td>
<td>0.920</td>
</tr>
<tr>
<td>Social outcome expectancy</td>
<td>0.864</td>
<td>0.886</td>
</tr>
</tbody>
</table>

Notes: *Changed item included.
† Changed item included.
‡ Only original items (all individualistic) were included.
§ All items (individualistic and collectivistic) included.

Table 2. Means and Standard Deviations for Physical and Social Activity Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Spain</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Physical self-efficacy</td>
<td>63.1</td>
<td>24.1</td>
</tr>
<tr>
<td>Social self-efficacy</td>
<td>57.7</td>
<td>23.4</td>
</tr>
<tr>
<td>Physical outcome expectancy</td>
<td>77.5</td>
<td>14.3</td>
</tr>
<tr>
<td>Social outcome expectancy</td>
<td>37.4</td>
<td>9.0</td>
</tr>
<tr>
<td>Physical activity participation</td>
<td>5.6</td>
<td>4.1</td>
</tr>
<tr>
<td>Social activity participation</td>
<td>3.7</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Note: SD = standard deviation.
social activity participation. Table 2 presents means and standard deviations for these independent and dependent measures.

Regression analyses revealed that physical activity self-efficacy accounted for a significant amount of participation in physical activity variance in both cultural contexts (see Table 3). Likewise, social activity self-efficacy accounted for a significant amount of participation in social activity variance in both cultural contexts (see Table 4). Neither outcome expectancy of physical activity nor outcome expectancy of social activity was significantly related to participation in its respective activity in either cultural context (see Tables 3 and 4, respectively). Gender and education were not significantly associated with any of our dependent measures. Overall health of participants was only significantly associated with social activity participation for the Spanish participants.

We conducted multiple regression analyses testing all possible versions of the self-efficacy and outcome expectancy scales that we had obtained. For example, in one multiple regression test, we employed the original 12-item physical outcome expectancy index plus the other independent variables. Then we compared those results with results when we used the expanded 24-item version of the physical outcome expectancy index (plus the other independent variables) in the regression. The results from all possible combinations were very similar. No matter which measures (original or modified) we used as independent variables, the analyses yielded the same results. There was a significant positive relationship between self-efficacy and participation in activity, whereas there was no significant relationship between outcome expectancy and participation. Given the consistency of the multiple regression results, as well as the higher reliability for the expanded and modified versions of the self-efficacy and outcome expectancy scales, we report results pertaining to the new versions of these scales.

**Discussion**

The primary intention of this study was to examine the role of self-efficacy and outcome expectancy as variables explaining participation in physical and social activity among older adults residing in two diverse cultural contexts. This investigation also expanded the measures of self-efficacy and outcome expectancy to apply them to social activity and modified, by expansion, the physical outcome expectancy measure (Steinhardt & Dishman, 1989) to include a collectivist aspect in the outcome expectancy for social activity.

**Major Findings and Implications**

**Self-Efficacy Explains Participation.**—The results partially support our predictions: Self-efficacy was a significant explanatory variable of participation in physical activity.
both physical and social activities, but outcome expectancy was not. The finding that self-efficacy is significantly associated with participation in physical activity replicates previous studies that found greater self-efficacy of physical activity led to a higher likelihood of participating in physical activity (McAuley, 1993; McAuley et al., 2000, 2003; Resnick et al., 2000). These studies also found, however, that outcome expectancy was a significant, although weaker, explanatory variable of participation in physical activity. Similar to a study by Anderson, Wojcik, Winett, and Williams (2005), our study does not support the outcome expectancy findings from earlier studies. The major conclusion of these results, however, is clearly the importance of self-efficacy in explaining participation in physical and social activity in both cultures, which in turn positively influences both physical (Zunzunegui et al., 2003) and mental (Ramos & Wilmoth, 2003) health. Furthermore, self-efficacy’s positive association with physical activity is consistent with McAuley and colleagues (2005), and as they showed in their study on physical activity, self-efficacy, and global self-esteem of older adults, increasing self-efficacy could lead to increased self-esteem.

To our knowledge, the present study provides the first application of how researchers can use Bandura’s (1977, 1997) self-efficacy ideas as a foundation to explore the motivators behind participation in the kind of social activity typically associated with health benefits. As with physical activity, self-efficacy significantly accounted for variation in older adults’ participation in social activities, whereas their outcome expectancy did not. These results suggest that those who work with older adults should emphasize the development of programs designed to enhance older adults’ confidence in their ability to participate in social activities because, as seen in past studies, social activity is highly related to mental health (Ramos & Wilmoth, 2003) and physical health (Zunzunegui et al., 2003). Furthermore, low interpersonal self-efficacy predicts loneliness and psychological distress (Fry & DeBats, 2002).

Clearly, our results suggest that it is particularly important for health care planners to improve older adults’ self-efficacy beliefs about both physical and social activity. The present results show that (a) self-efficacy theory presents a new model for understanding participation in social activity; (b) self-efficacy has predictive value for clinical use beyond the widely held outcome expectancy perceptions that exercise and socializing are good for a person; and (c) self-efficacy is a significant explanatory variable for both the Spanish and the U.S. samples representing diversity in location, language, and educational background, as well as cultural context. The ability to apply Bandura’s (1977, 1997) self-efficacy theory to differing cultures as an explanation for participation will help encourage global implementation of networks that support physical and social activity venues for older adults.

**New Scale Additions.**—The present study’s finding that the reliability of the Expected Outcomes for Physical Activity scale (Steinhardt & Dishman, 1989) increases when the 12 collectivistic-oriented items are added to the measure suggests that when future researchers use this measure, they may consider including the 12 extra items for two reasons. First, this set of items allowed us to include items potentially sensitive to cultural differences and at the same time improve the reliability of the item set. The high reliability values produced by the self-efficacy and outcome expectancy measures for social activity, which were constructed in parallel to the physical activity measures, provide evidence that the original measures retain reliability when applied to social activity. The fact that we found such high reliability in a cross-cultural context reinforces the reliability and generalizability of these measures. Second, the multiple regression analyses showed that whether we used the original or modified versions, results exhibit the same pattern. The similar results give support to using the changed items (providing higher scale reliabilities) without disturbing the resulting pattern. The ubiquity of social activity and exercise as health indicators, wide applications of Bandura’s (1977, 1997) self-efficacy theory, and trends in aging populations suggest that these measures have good utility for future studies across cultures.

**Future Research**

Although the participants in this study were met in places convenient to them, future research should test the generalizability of the present results to older adults without much mobility, older adults in additional cultural contexts, and minority groups. Broadening self-efficacy studies to include additional contexts (e.g., rural or Far Eastern cultures) would further test the universality of Bandura’s (1977, 1997) theory for participation in physical and social activity, especially because this is a first application of self-efficacy theory to participation in social activities by older adults. Furthermore, future studies might consider using more comprehensive measures of physical and social activity participation.

**Conclusion**

Given that we found the predicted relationship between self-efficacy and participation, regardless of country, our research suggests that health care providers should increase and enhance the development of self-efficacy-based interventions for both physical and social activity. Professionals should develop programs that help older adults build confidence and provide mechanisms that help older
adults overcome perceived barriers to participation in physical and social activity. Although efforts to increase awareness of the positive benefits of physical and social activity may be worthwhile, the association between outcome expectancy and participation was not significant in our samples of limited size. Notably, the present research suggests that health educators and programs could benefit older adults most by focusing on the improvement of older adults’ self-efficacy for such activities.

References

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Appendix A

Physical Activity Self-Efficacy Measure
(Resnick, Palmer, Jenkins, & Spellbring, 2000)

How confident are you that you could participate in a physical activity (e.g., exercise classes, swimming, or walking as an exercise) for 20 min three times per week if

1. The weather was bothering you
2. You were bored by the activity

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3. You felt pain when participating
4. You had to participate alone
5. You did not enjoy it
6. You were too busy with other activities
7. You felt tired
8. You felt stressed
9. You felt depressed

Respondents were instructed to choose a number between 1 (I am NOT very confident) and 10 (I am very confident).

**Appendix B**

Physical Activity Outcome Expectancy Measure
(Items 1–12 from Steinhardt & Dishman, 1989; added new Items 13–24)

The major benefits of physical activity are
1. Stay in shape
2. Make me feel better in general
3. Good health
4. Maintain proper body weight
5. Improve appearance
6. Enhancing self-image and confidence
7. Positive psychological effect
8. Reduce stress and relax
9. Fun and enjoyment
10. Help cope with life's pressures
11. Lose weight
12. Companionship
13. Contribute to keeping health care costs down for society
14. Motivate others
15. Stay available to friends
16. Stay available to family
17. Support others
18. Set example for peers
19. Maintain independence so I am less of a burden
20. Meet others' expectations of me
21. Fulfillment of society's expectations that I should try to stay healthy
22. Set example for children and grandchildren
23. Contribute to keeping health care costs down for family
24. Remain contributing member of society

Respondents were instructed to choose a number between 1 (strongly disagree) and 5 (strongly agree).

**Appendix C**

Social Activity Self-Efficacy Measure
(Adapted from Resnick, Palmer, Jenkins, & Spellbring, 2000, physical activity self-efficacy measure)

How confident are you that you could participate in a social activity (e.g., gathering for coffee, meeting in a park to chat, going shopping with friends or family) three times per week if
1. The weather was bothering you
2. You were bored by the activity
3. You felt pain when participating
4. You felt lonely within this group
5. You did not enjoy it
6. You were too busy with other activities
7. You felt tired
8. You felt stressed
9. You felt depressed

Respondents were instructed to choose a number between 1 (I am NOT very confident) and 10 (I am very confident).

aItem changed from Resnick et al. (2000).

**Appendix D**

Social Activity Outcome Expectancy Measure
(Adapted from Steinhardt & Dishman, 1989, physical activity outcome expectancy measure)

The major benefits of social activity are
1. Stay connected with other people
2. Make me feel better in general
3. Good health
4. Maintain relationships
5. Improve attractiveness
6. Enhancing self-image and confidence
7. Positive psychological effect
8. Reduce stress and relax
9. Fun and enjoyment
10. Help cope with life's pressures
11. Reduce negative moods/reduce loneliness
12. Companionship

Respondents were instructed to choose a number between 1 (strongly disagree) and 5 (strongly agree).

aItem changed from Steinhardt and Dishman (1989).