



## Short communication

## Social cognitive correlates of physical activity among single mothers with young children

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## ABSTRACT

**Objectives:** Single mothers experience negative health consequences that might be reduced through participation in physical activity, yet little is known about physical activity correlates among this population. This study examined social cognitive theory (SCT) correlates of physical activity among single mothers with young children.

**Design:** Cross-sectional.

**Method:** Single mothers ( $N = 94$ ) with at least one child less than 5 years old completed SCT questionnaires, wore an accelerometer for one week, and then completed the Godin Leisure Time Exercise questionnaire. Physical activity scores were standardized and averaged to yield a composite physical activity score.

**Results:** Regression analysis indicated that self-efficacy was a direct predictor of composite physical activity; in the final model planning was the only statistically significant predictor of composite physical activity scores.

**Conclusions:** Planning and self-efficacy might be important factors to include when designing physical activity interventions for single mothers.

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The number of single mother households in the United States has nearly tripled since 1970 and more than 25% of all households with children in the United States are currently headed by single mothers (U.S. Census Bureau, 2011). Single motherhood has been associated with an increased risk of cardiovascular disease and diabetes (Young, Cunningham, & Buist, 2005) and depression (Cairney, Boyle, Offord, & Racine, 2003). The impact of these conditions may be lessened through physical activity participation (Physical Activity Guidelines Advisory Committee, 2008), but we know little about how to promote this behavior among single mothers.

One longitudinal study reported that becoming a single mother was associated with an increased risk of being classified as inactive (~51% of single mothers were classified as inactive compared to 44% of partnered mothers) (Brown & Trost, 2003). In another study, approximately 55% of single mothers were inactive and this rate did not differ significantly from physical activity of partnered mothers (Young, James, & Cunningham, 2004). Among another large sample

of mothers, only 35.8% of single and 29.9% of partnered mothers were meeting national physical activity guidelines (Young et al., 2005). One recent pilot study demonstrated that single mothers were not meeting physical activity guidelines and were less physically active than married mothers using objective and self-report measures of physical activity (Dlugonski & Motl, 2013). Collectively, these studies emphasize the need to understand and promote physical activity among single mothers to improve health.

Results from previous studies among mothers with young children offer targets for understanding physical activity among single mothers. Previous samples of parents of young children have reported stress relief (McIntyre & Rhodes, 2009), being an active role model for children (Hamilton & White, 2010), and improved parenting skills (Hamilton & White, 2010, 2011) as motives for physical activity and these motives might be similar for single mothers with young children. Among the general population, 'lack of time' has been reported as a barrier to physical activity in several studies by parents with young children (Hamilton & White, 2011; McIntyre & Rhodes, 2009). These time pressures might be particularly salient among single mothers who are solely responsible for all parenting and household duties (Hodgson, Dienhart, & Daly, 2001). Parents with young children have also reported a lack of

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energy, motivation, and childcare as physical activity barriers (Hamilton & White, 2011; McIntyre & Rhodes, 2009).

Single mothers may face unique challenges to engaging in physical activity in addition to those experienced by partnered parents of young children. Single mothers are often the primary or sole income provider for the family and spend nearly as much time with their children as married mothers (Kendig & Bianchi, 2008), potentially leaving less time for engaging in physical activity. Low-income single mothers reported feeling fatigued and stressed because of work-family conflicts in a qualitative study (Son & Bauer, 2010) and these feelings might further impact motivation to participate in physical activity. In another qualitative study of behaviors related to cardiovascular health, single mothers reported many barriers to engaging in health behaviors (e.g., lack of resources and stress), felt they had little ability to make changes in their lives, and described a lack of social support for physical activity (Higgins, Young, Cunningham, & Naylor, 2006). The correlates of physical activity among single mothers are likely complex, but to our knowledge, have not been identified in this population.

The primary aim of this study is to provide an initial examination of social cognitive theory (SCT) correlates of physical activity among single mothers with young children to inform future behavioral interventions. In a recent study among postnatal mothers, the central construct within SCT, self-efficacy, was positively associated with future leisure time physical activity (Cramp & Bray, 2011). Two different cognitive-behavioral interventions have demonstrated the utility of SCT constructs for changing physical activity among mothers (Cramp & Brawley, 2006; Mailey & McAuley, 2013). Despite the frequent use of SCT within physical activity literature, few studies have examined all SCT constructs simultaneously (Rhodes & Nigg, 2011). We are unaware of any studies that have identified relationships between physical activity and SCT constructs specifically among single mothers. These relationships are important to consider because single mothers may have barriers, facilitators, and strategies for being physically active that may be distinct from other groups of mothers.

## Method

### Participants

Participants were recruited through local, regional, and online sources that included flyers in daycares, direct mail postcards targeted to single mothers, and Facebook advertisements. All participants met the following inclusion criteria: a) 18–50 years old; b) not pregnant; c) being a single (never married, separated, divorced, or widow) mother; d) not currently living with a partner; e) at least one child under the age of 5 living in the household; and f) willingness to complete all study procedures.

Initially, 195 women expressed interest in this study, but 45 women were unable to be reached by the study team or were uninterested after learning more about the study. Thus, 150 women underwent screening for enrollment. Subsequently, 30 women were disqualified ( $n = 24$ , no child < 5 years) and 17 never returned the consent document, resulting in 103 participants enrolled in the study. Three participants dropped out prior to completing study materials and 6 did not return study materials, yielding a final convenience sample for data analysis of 94 single mothers with young children.

### Measures

#### Physical activity

The ActiGraph model 7164 accelerometer was used as an objective measure of usual physical activity over a 7-day period.

Data from the accelerometer were processed to yield average minutes per day spent in MVPA ( $\geq 1952$  counts per minute) (Freedson, Melanson, & Sirard, 1998). The Godin Leisure-Time Exercise Questionnaire (GLTEQ; Godin & Shephard, 1985) was used as self-reported measure of current leisure-time exercise during a usual 7-day period. Total scores for the GLTEQ were calculated by multiplying the weekly frequency scores for strenuous, moderate, and mild exercise by metabolic equivalents of 9, 5, and 3, respectively and then summing all categories. These measures were combined to yield a composite physical activity score that captures MVPA that occurs throughout one's day and structured exercise.

#### Self-efficacy

The Exercise Self-Efficacy Questionnaire (EXSE; McAuley, Lox, & Duncan, 1993) was used to measure self-efficacy for meeting physical activity guidelines. Participants were asked to rate their confidence in their ability to accumulate 30 min of moderate intensity activity (similar to a brisk walk) on most days of the week over the next 1–6 months. Responses for each item, ranging from 0 (Not confident at all) to 10 (Completely confident), were averaged and then multiplied by 10 to achieve the final score. Acceptable internal consistency ( $\alpha > .85$ ) has been demonstrated in previous research (McAuley et al., 1993) and the internal consistency in this study was  $\alpha = .99$ .

#### Exercise barriers

The Exercise Barriers Scale (EBS; Sechrist, Walker, & Pender, 1987) was used to measure perceived barriers for exercise. The original scale consists of 14 items rated on a 4-point scale that ranges from “strongly agree (4)” to “strongly disagree (1)”. Two parent-specific items, identified from a review of the literature, were added to the original scale. These were: “I don't have anyone to watch my child(ren) while I exercise” (e.g., McIntyre & Rhodes, 2009) and “I feel guilty leaving my child(ren) with someone else while I exercise” (e.g., Lewis & Ridge, 2005). Individual items were summed to yield a total score that can range from 16 to 64 with higher values indicating more perceived barriers to exercise. The item referencing a spouse/significant other was excluded from the summary score because most participants indicated that this item was not applicable. This resulted in a score that could range from 15 to 60. This scale has previously demonstrated internal consistency (Sechrist et al., 1987) and the internal consistency in the present study was  $\alpha = .86$ .

#### Social support

Perceived social support for exercise from family and friends was measured with the Social Support for Exercise Survey (SSES; Sallis, Grossman, Pinski, Patterson, & Nader, 1987). For each of the 13 items, participants were asked to report how often family/friends have provided the type of support listed during the previous 3 months, using a scale of 1 (none) to 5 (very often). Ten of the 13 items from each scale were summed to yield separate scores for Family Participation and Friend Participation that can range from 10 to 50, with higher scores indicating more support from family and/or friends. Items on this survey were initially developed from interviews with a sample of parents who were mostly women (Sallis et al., 1987). Internal consistency values in the present study for social support from family ( $\alpha = .87$ ) and friends ( $\alpha = .92$ ) were acceptable.

#### Outcome expectations

The 15-item Multidimensional Outcome Expectations for Exercise Scale (MOEES; Wojcicki, White, & McAuley, 2009) measured the physical, social, and self-evaluative domains of outcome expectations for exercise on a scale ranging from 1 (Strongly Disagree)

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