



Physical activity buffers the effects of family conflict on depressed mood: A study on adolescent girls and boys

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A B S T R A C T

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This paper investigates the relationship between physical activity and depressed mood, under conditions of family conflict. We analyze data from a representative sample of 7232 Icelandic adolescents. Analysis of variance was carried out to test for main and interaction effects. The study shows that while family conflict increases the likelihood of depressed mood, among adolescents, physical activity decreases the likelihood of depressed mood. Furthermore, physical activity plays a more important role among those adolescents living in aversive circumstances, than other adolescents, as family conflict and physical activity interact in the effect on depressed mood for adolescents living in such circumstances. The findings highlight the role of physical activity in decreasing mental distress among adolescents, especially those living in aversive circumstances at home.

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Introduction

Numerous studies have found that aversive experiences have negative psychological consequences for children and adolescents (Bao, Whitbeck, & Hoyt, 2000; Lin, Ye, & Ensel, 1999; Thoits, 1995; Turner & Lloyd, 1999). For example, significant risks are associated with bereavement (Turner & Lloyd, 1995), divorce of parents (Amato & Sobolewski, 2001; Emery & Forehand, 1994) and family conflict, i.e. arguments and physical violence in the home (Amato & Sobolewski, 2001; Henning, Leitenberg, Coffey, Bennett, & Jankowski, 1997; Horwitz & Widom, 2001; Jekielek, 1998). According to Agnew's (1992) general strain theory, unpleasant events or circumstances, including aversive circumstances at home, particularly arguments and violence, create negative emotional reactions. These negative emotions frustrate the adolescent and may lead to desperate avoidance and/or delinquency (Agnew, 1985; 1992). Many studies have supported this association between aversive circumstances and negative emotions. Thus, conflict between adults has been shown to invoke fear in children, along with anger, aggression, and depressed mood (Amato, Spencer, & Booth, 1995; Sigfusdottir, Silver, & Farkas, 2004).

Whether it is possible to guard those adolescents and hence decrease the likelihood of strain resulting in negative emotions, has not yet been fully examined. To date, most prior studies have focused on the conditioning effects of support on mental distress among adults and adolescents (Gore & Aseltine, 1995; Grant et al., 2006; Wills & Cleary, 1996). Specifically,

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parental support has gained attention in this respect (Forehand et al., 1991). However, less is known about whether other kinds of environmental factors, such as physical activity may ameliorate the effects of stress on mental distress among adolescents.

Physical activity, family conflict and negative emotions

Studies and reviews of the literature have linked physical activity to beneficial changes in emotional well-being, depression, anxiety and stress reactivity (Babiss & Gangwisch, 2009; Landers & Arent, 2001; O'Neal, Dunn, & Martinsen, 2000; Paluska & Schwenk, 2000; Phillips, Kiernan, & King, 2003; Weyerer & Kupfer, 1994). Various mechanisms have been suggested to account for this relationship. Strenuous exercise has been associated with increased cortical blood flow, release of endorphins and increased epinephrine and nor-epinephrine synthesis (Plante & Rodin, 1990; Rooks, Thom, McCully, & Dishman, 2010). Some scholars have suggested that participation in sports may provide a sense of meaning, coherence, and enhanced self-worth (Gore, Farrell, & Gordon, 2001). Others have suggested that physical activity may reduce emotional strain and serve as an important element in achieving emotional balance (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991).

To untangle the complex web of relationships involved it is important to specify the social context in which the effects of physical activity are being studied. Social context may affect the relationship between physical activity and emotional well-being in several ways, and this relationship may be present in only some social conditions while not in others. Social conditions that decrease emotional well-being are of particular interest here. Consequently, it is an important theoretical question to what extent physical activity may counteract those conditions. The main contribution of this study is to examine the function of physical activity in helping adolescents cope with strain in their lives. In that context we draw upon Agnew's general strain theory. According to his theory, strain among adolescents increases the likelihood of a range of negative emotions, including depression (Agnew, 1992; 2006).

Agnew (1992) further acknowledges that not all adolescents respond to strain with negative emotions and deviance and predicts that several factors may condition the impact of strain on delinquency. A number of these factors include personal characteristics, such as coping skills, self-esteem, self-efficacy and level of social control one experiences through interaction with others (Agnew, Brezina, Wright, & Cullen, 2002). Other conditioning factors include those outside of the individual, such as association with delinquent peers and absence of social support (Agnew & White, 1992; Aseltine, Gore, & Gordon, 2000). One form of emotional coping strategy, that may alleviate negative emotions, according to Agnew, is physical activity. Adolescents participating in physical activity should thus be better able to respond to strain without experiencing negative emotions.

Only a handful of studies have considered the buffering effect of physical activity on the relationship between strain and depressed mood (Carmack, Boudreaux, Amaral-Melendez, Brantley, & De Moor, 1999; Harris, Cronkite, & Moss, 2006; Laperriere, Antoni, Schneiderman, & Ironson, 1990; Norris, Carroll, & Cochrane, 1992). Carmack and colleagues showed a buffering effect for physical activity on anxiety among college students, under conditions of minor stressful events and daily hassles. However, buffering effect was not found with depression. Among secondary school students, Norris et al. (1992) found that high intensity aerobic exercise program over 10 week period weakened the relationship between self appraised stressful situations and both depression and anxiety symptoms. Furthermore, Harris, Cronkite, and Moos (2006) found that physical activity buffered against the impact of major stressful life events on depression among depressed adult patients. These studies suggest that participation in physical activity may be an important factor in buffering the effects of strain on mental distress. However, the studies carried out hitherto, have not studied the effects of physical activity on the relationship between chronic strain, in the form of family conflict, and mental distress among adolescents.

Potential gender differences are of special interest in this regard. Prior studies have shown that adolescent girls report and exhibit more symptoms of depression than do adolescent boys (Nolen-Hoeksema, 2001; Sigfusdottir, Farkas, & Silver, 2004). These gender differences persist into adulthood, with the prevalence of depression in community studies of adults being about twice as high for women as men (Nolen-Hoeksema, 2001). Furthermore, girls have been found to be more emotionally affected by family conflict (Sigfusdottir et al., 2004). Finally, recent studies have found that in the last decade levels of depression have increased among girls while no significant differences are found in levels of depression among boys (Collishaw, Maughan, Natarajan, & Pickle, 2010). It is therefore of urgent importance to study what environmental aspects may prevent aversive circumstances to translate into depressed mood; this is especially important to find out for adolescent girls.

In this study we test whether high level of participation in physical activity, reduces depressed mood among adolescents. In line with studies on gender differences discussed above, we test whether these effects differ for girls and boys. We expect that family conflict will be positively associated with depressed mood. Furthermore, according to Agnew's general strain theory, we expect that physical activity will reduce the effects of strain, in the form of family conflict, on negative emotional reactions. The following hypotheses are put forth:

Hypothesis 1

Family conflict increases the likelihood of depressed mood.

Hypothesis 2

Physical activity decreases the likelihood of depressed mood.

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