

## Research Article

# Motivational Differences among Older Adults Participating in Individual and Group Exercise: Measurement Issues, Benefits?

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Involvement in physical activity is associated with improved mental health including better social skills, coping mechanisms,

evidence from clinical studies has shown that the psychological benefits associated with participating in exercise and physical activities are comparable to those found with standard forms of psychotherapy [12, 13]. Moreover, there is a considerable amount of literature demonstrating the important psychological benefits that consistent exercise participation can offer the aging population including improvements in cognitive function, positive affect, self-efficacy, social skills, cohesion, networking, and engagement, life and sexual satisfaction, as well as reduced incidences of psychological chronic conditions including mood disorders such as depression and schizophrenia [14–23].

The “active environment” describes whether one participates in exercise within a group or an individual setting, and it facilitates mental health benefits [13, 15, 24–28]. However, much of the previous research on exercise environments has focused on how individual *versus* group physical activities affect adoption of, and adherence to, exercise or physical activity among the older adult population. The evidence on whether older individuals prefer exercising in a group or individual activities has been inconsistent and somewhat contradictory. For instance, Beauchamp et al. (2007) found that 68% of adults aged 50 or more preferred participating alone in a one-year aerobic program [13]. In contrast, Fox et al. (2007) noted that European older adults preferred exercising in a group environment during a one-year aerobic program [26]. Although these two studies are contradictory in terms of older adult preferences for exercise, both studies highlight similar mental health benefits from physical activity participation in group and individual environments.

In addition to active environment preferences, previous research has shown inconsistent findings in relation to maintaining exercise participation within a specific mode of an active environment (i.e., group versus individual). Researchers, (e.g., [15, 24, 25, 28]) have highlighted that participating in group exercise produces superior attendance rates among older adults aged 50+ compared to exercising alone. This effect appears to be adjunct to perceptions of group cohesion and belonging as participants felt strongly that they were part of a team, producing an average attendance rate of 85% for group exercise programs. However, in contrast, King et al. (1993) found that adherence rates were slightly higher when participants aged 50+ were placed in an individual, home-based exercise program compared to a group-based program. The success was attributed to participants perceiving greater internal locus of control over their health [27].

Research regarding the accrual of mental health benefits among older adults has also been mixed in regards to the active environment. King et al. (1993) found no significant differences in positive mental health outcomes between group and individual exercise environments during a one-year randomized control trial of aerobic exercise, and it was claimed that group exercise was unnecessary as older adults could receive similar benefits from more convenient forms of individual exercise [27]. In contrast, Brawley et al.'s (2000) nine-month randomized control trial of group versus individual exercise environment interventions found

that self-efficacy, social skills, and general mental health were significantly greater among those in the group active environment than the individual one [24].

It is important to note that these previous data are based on structured exercise single-blind interventions rather than voluntary or natural participation in less regimented physical activity or sport. Recent discussions of the role physical activity and sport in promoting healthy aging, (e.g., [29, 30]) have advocated that sport and physical activity produce improvements in health and functioning above and beyond

### 2.3. Main Predictor Variable

**2.3.1. Active Environment.** This variable was divided into four categories based on self-reported leisure physical activity and sport participation: those participating in only group active environments, those participating in only individual active environments, those participating simultaneously in both environments, and those participating in neither. This variable, which is not available in the CCHS, was calculated using Microsoft Excel 2003 to identify the respondents in each category. Group active environments were defined as physical activities or sports that *require* interactions among individuals when participating. The activities meeting this criterion in the CCHS were ice hockey, baseball/softball, volleyball, basketball, and soccer. Individual active environments were defined as activities or sports that *do not require* interactions among individuals when participating. The activities meeting this criterion in the CCHS were walking, gardening, swimming, bicycling, jogging, golf, and tennis/racquetball. Classification of this variable was captured by summing the total number of participants who responded “yes” to participating in one or more group or individual activities. Furthermore, those participating in both environments simultaneously responded “yes” to one or more activities from group *and* individual categories while others responded “no” to both sets of activities were not participating in either of the specified active environments. Resulting from this classification were four possible categorical responses for the active environments variable: (1) those participating in only group active environments, (2) those participating in only individual active environments, (3) those participating simultaneously in both active environments, and (4) those participating in neither active environment. These specific activities were chosen as the present study aimed to assess purposeful physical activity respondents completed in their leisure time. As such, the present study does not assess incidental physical activity (i.e., transportation, occupational, or house work).

**2.4. Covariates.** Based on previous research [31–35], a number of covariates were included in the analyses to minimized their confounding effects on the key associations under investigation. First, sociodemographic variables, such as age, sex, and marital status were included. Age was classified in the CCHS in five-year groups, `beas1.6(ar)-oraoth`

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TABLE 1: Sample descriptive statistics for all variables in the analyses  
( $N = 44,057$ ).

Variable and category	<i>n</i>	(%)
Mood disorders		

TABLE 2: Results of logistic regression analysis for the relationship between active environments and likelihood of having a mood disorder ( $N = 44,057$ ).

Variable	Model A: OR (95% CI)	Model B: OR (95% CI)
Group only	0.78 (0.24, 2.5) <sup>‡</sup>	0.83 (0.25, 2.8) <sup>‡</sup>
Individual only	0.72 (0.65, 0.79)	0.85 (0.77, 0.95)
Group + individual	0.41 (0.31, 0.55)	0.55 (0.41, 0.74)
Neither	1.00 (referent)	1.00 (referent)

All  $P < 0.01$ , except <sup>‡</sup> $P = 0$ .

*4.2. Future Research.* There is a need for continued research in the field of active environments and mental health outcomes for older adults, not only to address the limitations of the current study, but to discern the relative, and perhaps additive, contributions that different modes of active environments have at promoting successful aging in the mental health domain. This field of research would benefit from objective measures and designs, such as randomized control trials, that include individual and group activities to establish a clear cause-and-effect relationship between active environments and mental health in later life. As many of the previous studies have represented active environments as separate entities in their research designs, future studies should include experimental groups that assess group and individual active environments both separately and in conjunction with one another. Furthermore, as much of the current research on active environments focuses on structured exercise regimes, physical activity and sport-related research is

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