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National Franchise Members' Perceptions of the Exercise Psychosocial Environment, Ownership, & Satisfaction

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Abstract

The purpose of this study was to examine the relationship between: a) the motivational climate developed by a national exercise franchise and b) members' sense of ownership in and enjoyment of exercise. Members of a national exercise franchise (N=5,329) were surveyed to learn their views on the motivational climate (autonomy supportive, caring, task- and ego-involving), exercise class ownership, and class enjoyment. Mean scale scores revealed this national exercise franchise succeeded in developing a high caring ($M = 4.60 \pm .68$), task-involving ($M = 4.04 \pm .62$), and autonomy supportive ($M = 5.98 \pm 1.00$) climate, and low ego-involving ($M = 1.79 \pm .69$) climate. The members also reported high perceptions of ownership ($M = 4.21 \pm .78$) within and enjoyment ($M = 6.50 \pm .91$) of the exercise program. Structural equation modeling (SEM), theory-driven regression analyses supported the hypothesis that the psychosocial environment experienced by members predicted their reported ownership and enjoyment. Specifically, members' ownership was significantly positively predicted by their perceptions of the environment as task-involving and autonomy supportive, and negatively predicted by their perceptions of the environment as ego-involving. Members' enjoyment was significantly positively predicted by their perceptions of the environment as caring, task-involving, and autonomy supportive, while negatively predicted by their ego-involving climate perceptions. A large, national fitness organization is capable of promoting their franchisees' consistent fostering of a highly caring, autonomy supportive, task-involving, and low ego-involving environment. Developing this climate was associated with members reporting a greater sense of ownership and enjoyment of their exercise experience.

Keywords: caring; motivational climate; autonomy supportive climate; achievement motivation; self-determination

National Franchise Members' Perceptions of the Exercise Psychosocial Environment, Ownership, & Satisfaction

Today, the greatest public health problem is physical inactivity (Blair, 2009), and researchers (e.g., Thogersen-Ntoumani, Ntoumanis, & Nikitara, 2008) note that many of the "unconvinced" set of inactive adults have "negative beliefs towards exercise" (p. 1347). In addition, 67% of adults who have gym memberships do not actually use their membership (McCarthy, 2004). Interestingly, Dishman, Sallis, and Orenstien (1985) have identified individuals' enjoyment as more important than their health concerns for maintaining physical activity participation. In addition, the American College of Sports Medicine's *Guidelines for Exercise Testing and Prescription* (2010) now suggests measuring pleasure as a method of self-monitoring exercise intensity. Thus, finding ways to make exercise enjoyable is an important ingredient to building and maintaining individuals' exercise habits. For many adults who exercise at fitness facilities, the quality of their experiences is closely related to the members' perceptions of the facility's environment (Brown & Fry, 2013; Huddleston, Fry, & Brown, 2012). The purpose of this study was to survey members of a large, national exercise franchise about their perceptions of the exercise psychosocial environment, their ownership in the fitness classes offered by this franchise, and their enjoyment of those classes.

Motivational Environment

Nicholls (1989) has identified two primary motivational climates, task- and ego-involving, within Achievement Goal Perspective Theory (AGPT). Members in a task-involving climate perceive the exercise leader to emphasize individuals' effort and improvement, and to encourage members to work together to improve (Huddleston et al., 2012). On the other hand, members in an ego-involving climate perceive the exercise leader to provide praise and technical

feedback to a limited few (i.e., favorites, most talented), embarrass those who make mistakes or ask for assistance, and promote rivalry between members (Huddleston et al., 2012). A recent addition to the psychosocial motivational climate literature is the caring climate (Newton et al., 2007). Members experiencing a caring climate feel valued, welcomed, and respected (Newton et al., 2007). The perception of a caring climate has been positively correlated with participants' reports of experiencing a task-involving climate, and negatively correlated with reports of experiencing an ego-involving climate in exercise and physical activity settings (Brown & Fry, 2013; Hogue, Fry, Fry, & Pressman, 2013; Moore & Fry, 2014; Newton et al., 2007).

When members report experiencing a high task-involving and caring climate, they have also reported greater ownership, enjoyment, commitment to exercise, intrinsic motivation, and lower stress levels (Brown & Fry, 2013; Hogue et al., 2013; Moore & Fry, 2014). Conversely, when members report experiencing a high ego-involving motivational climate, they have reported having greater stress, and lower enjoyment, ownership, commitment, and life satisfaction (Brown & Fry, 2013, 2014; Hogue et al., 2013; Moore & Fry, 2014). The research clearly illustrates the positive adaptations possible in a high caring, task-involving, and low ego-involving climate. Thus, perceptions of a caring and task-involving climate are expected to be positively related to participants' ownership and enjoyment in exercise class, whereas participants' perceptions of an ego-involving climate are expected to negatively correlate with their ownership and enjoyment in exercise class.

Another important component of the environment influencing individuals' motivation is the presence of an autonomy supportive climate (Duda, 2013; Smith et al., 2015). An autonomy supportive climate, from Self-Determination Theory (SDT), is one that promotes learning at one's own pace, being able to adapt exercises to meet one's needs and abilities on a daily basis,

and exercising of one's own volition (Edmunds, Ntoumanis, & Duda, 2006). Duda (2013) and

Smith et al. (2015) have suggested that the autonomy supportive climate of SDT is

complementary with a task-involving and caring climate. Conceptually, these constructs are

theorized to be complementary, because in an autonomy supportive environment instructors are

intentional about providing the opportunity for participants to select the most appropriately

challenging version of a skill or exercise, while task-involving climate behaviors reward

participants giving high effort and demonstrating improvement, with improvement being the

result of giving high effort on the appropriate exercise challenge level. Additionally, when

instructors use caring climate behaviors to show that all individuals are valued for who they are

and their unique contributions to the group, then they are also supporting individuals' decision to

express themselves during an exercise class by their attendance and exercise challenge selection

(i.e., autonomy supportive). By noticing individuals' effort and improvement, the participants

feel recognized and respected for training at their skill appropriate level. It is for these reasons

that the Multidimensional Motivational Climate Observation System includes observations

conceptually representing task-involving and caring behaviors (Duda, 2013; Smith et al., 2015).

Theoretically, the complementary nature of these positive environmental components will

also exist in the exercise setting. However, the correlational relationships of an autonomy

supportive climate with task-involving and caring climates have not yet been examined in the

exercise setting. Edmunds et al. (2006) showed that individuals who experienced an autonomy

supportive climate in the exercise setting reported greater satisfaction of their needs for

autonomy and competence, as well as their intrinsic motivation to exercise, and they participated

more consistently. Thus, to more fully understand the psychosocial environment of an exercise

facility and how it influences members' exercise experience, it is important to consider the environment as autonomy supportive, in addition to task-involving and caring.

Motivational Outcomes

A relatively new and important physical activity outcome is participants' sense of ownership in their exercise classes. When members' perceive the exercise class as one in which they are able to influence their and their peers' experience, and view it as being "their" class (i.e., not solely under the control of the instructor), they have ownership in their exercise class (Moore & Fry, 2014; Powell, 2005). In previous research ownership has correlated with members' reporting a high caring, task-involving, and low ego-involving exercise class climate (Moore & Fry, 2014). In addition, ownership has been associated with positively promoting important exercise outcomes, such as empowerment in exercise and satisfaction in class (Garcia, Moore, & Fry, 2014; Moore & Fry, 2014). Given an autonomy supportive climate promotes individuals making their own decisions regarding how they participate in class activities, it is theorized that ownership in exercise will also be strongly, positively related to experiencing an autonomy supportive climate. This relationship is supported by qualitative educational psychology research (Powell, 2005) examining the relationship of different teaching pedagogies with students' ownership in physics courses. However, examination of this relationship has not been extended to the exercise class context.

An inherent component of individuals' intrinsic motivation is that they enjoy the exercise experience during their participation, and not solely the benefits upon completing the exercise experience (Deci & Ryan, 2000). Although we often speak of reaching the ultimate goal of exercise participants being intrinsically motivated to exercise, Deci and Ryan (2000) state that this is not a truly realistic, nor necessary goal. Making the exercise experience enjoyable,

however, is more likely to increase individuals' interest in participating in the future, as they inherently avoid that which is unenjoyable, and repeat the enjoyable experiences (Ekkekaksis, Parfitt, & Petruzzello, 2011). Based upon prior exercise research, individuals' enjoyment is promoted by experiencing a high caring, task-involving, and low ego-involving climate (Brown & Fry, 2013; Hogue et al., 2013).

In addition, individuals who experience a more autonomy supportive climate at their exercise facilities report greater intrinsic motivation and commitment to exercise (Fortier, Duda, Guerin, & Teixeira, 2012). These findings suggest that when individuals' experience a caring, task-involving, autonomy supportive, and low ego-involving exercise environment, they will also report enjoying their exercise experience more. Given that a lack of enjoyment is a common reason given by individuals who do not regularly exercise, examining how one national exercise franchise's psychosocial environment relates to the members' exercise enjoyment is valuable.

With only a third of fitness facility members regularly using their membership (McCarthy, 2004), making the experience enjoyable is one suggested way to increase individuals' exercise participation (Dishman et al., 1985; Ekkekakis, et al., 2011). Both theory and prior research suggest that the psychosocial environment influences individuals' enjoyment and ownership in exercise. The purpose of this study was to examine the relationship between members' perceptions of their fitness facility's psychosocial environment components with each other and with their sense of exercise class ownership and enjoyment. The autonomy supportive, task-involving, and caring climates were hypothesized to positively correlate with ownership and enjoyment; whereas the ego-involving climate would negatively correlate with ownership and enjoyment. Lastly, ownership and enjoyment were hypothesized to have a moderate to strong, positive correlation. Given the cross-sectional data of this study, the directionality of the

following hypothesis is theory-driven. Specifically, based upon theory, it was hypothesized that the members would report this franchise as fostering a high caring, task-involving, autonomy supportive, and low ego-involving environment that promoted both their enjoyment and ownership in exercise.

Method

Participants

Franchise members (N = 5,328) completed a survey. Respondents were primarily female (92%), which is consistent with the composition of this franchise's membership. The respondents were also primarily white (90%) and their average age was 49.30 years. They attended franchise facilities across the United States. The franchise only offers group fitness classes to members; there are no individual exercise sessions, equipment, or opportunities. The franchise sent an email to their national membership inviting them to complete the anonymous survey, and each region of the U.S. was represented with respondents from 48 of 50 states (no one stated they were participating in Wyoming or North Dakota). The minority (2.2%) of participants reported being an attending member for less than one year, whereas 5.7% reported being an attending for 15 or more years. Thus, the members had attended enough exercise classes to report perceptions of all the measured constructs included in this study. As members may use any of the nation's facilities, and some travel to different locations due to where they live and work, or to attend additional sessions by a particular instructor, identifying specific locations was not part of the survey.

Measures

Perceived Motivational Climate in Exercise Questionnaire (PMCEQ; Huddleston, Fry, and Brown, 2012). The PMCEQ is a 27-item measure of the participants' perceptions of the exercise climate as task-involving (14-items) and ego-involving (13-items). Participants responded to each item on a 5-point Likert scale from 1 (Strongly Disagree) to 3 (Neither Agree nor Disagree) to 5 (Strongly Agree). Two sample items are "In this exercise class, the instructor emphasizes always trying your best" (task-involving) and "In this exercise class, the staff has their favorite members" (ego-involving). Good reliability values for the task- and ego-involving subscales have been shown in previous studies with adult (Cronbach's alpha = .89 and .86, respectively; Huddelston et al., 2012) samples.

Caring Climate Scale (CCS; Newton et al., 2007). The CCS is a 13-item measure of participants' perceptions of the environment as caring. Participants responded to each item on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). A sample caring climate item is "In this exercise class, instructors accept members for who they are." The CCS has demonstrated good reliability in previous research with adult (α = .94; Brown & Fry, 2013) samples.

Learning Climate Questionnaire (LCQ; Black & Deci, 2000). The LCQ is a 15-item measure of participants' perceptions of the climate as autonomy supportive. The measure was chosen for its focus on the autonomy supportive climate experienced by participants in learning and class settings. The participants rated how much they felt each item was 1 (Not True) to 7 (Very True) of their exercise class experience. A sample item is "I feel that my instructor provides me choices and options." When used in previous research with young adults, the LCQ has demonstrated good reliability (α = .93 and .94; Black & Deci, 2000).

Ownership in Exercise Scale (OES; Moore & Fry, 2014). The OES is a 5-item measure of participants' perceptions of their ownership in the group exercise class. Participants rated how

much they agreed [1 (Strongly Disagreed) to 5 (Strongly Agreed)] with each statement. Two

sample items are "In this exercise class, I feel I have the freedom to adjust class activities to meet

my personal goals and/or ability level" and "In this exercise class, I feel my input, interests,

and/or needs are considered by the instructor." The OES revealed good reliability (McDonald's

Coefficient omega = .85; Moore & Fry, 2014) in previous research with young adults.

Intrinsic Sport Satisfaction Scale (Duda & Nicholls, 1992). The 5-item Satisfaction/Enjoyment

subscale of the Intrinsic Sport Satisfaction Scale was used to measure how much participants are

satisfied with and enjoyed their training activity experience. The items referred to the group

exercise class context. Participants responded to a 5-point Likert scale from 1 (Strongly

Disagree) to 5 (Strongly Agree). A sample item is "I usually have fun doing group exercise

classes." The directions instructed individuals to think about the site where they exercise. In

previous research this measure has shown good reliability (Cronbach's alpha = .82—.94) across

both school and sport contexts (Duda & Nicholls, 1992; Pulido et al., in press).

Procedures

Once support from this fitness franchise was established, two online surveys were created

and associated with a single online survey link. Upon approval from both the fitness franchise

and the researchers' institutional review board for research on human subjects, the fitness

franchise sent the study's description and survey link out to its membership. Participants

completed the online consent form, and then completed one of the two surveys, which were

rotated (i.e., the survey software randomization code would determine which survey an

individual saw and completed). Results from the other survey are published separately (See

Brown & Fry, 2014).

Plan of Analysis

The data passed a screening for normality. The data had less than 1% missingness;

therefore, the full information maximum likelihood (FIML) estimator was used in the R package

lavaan for the structural equation model (SEM) analyses to provide the least biased parameter

and standard error estimates (Graham, 2009; Little, Jorgensen, Lang, & Moore, 2014). Each

construct's items were grouped into three parcels. Parceling was done to have a just-identified

model (i.e., the number of estimated parameters equaled the number of correlations between the

indictors), which is the most stable model configuration possible (Little, 2013; Little, Rhemtulla,

Gibson, & Schoemann, 2013). Research has shown that even randomly parceling items within a

measure maintains the information about the construct, while improving model fit due to

attaining just-identification (Little et al., 2013). Random parceling was not done in this analysis.

As suggested, prior to parceling items, an item-based model was run, and then parceling

following approaches used in previously published research with these measures was used to

inform the parceling process (Marsh, Ludtke, Nagengast, Morin, & Von Davier, 2013). The

PMCEQ items were parceled by facets into three parcels per motivational climate construct. The

CCS and LCQ items were paired by their factor loadings, such that the strongest and weakest

were paired together. This was repeated until these item pairings resulted in three parcels for

each construct. The ownership and enjoyment items were paired by their strongest residual

correlations to make two parcels, and one item was left unparceled. A configural model was run

to assess model fit. Modification indices were examined to determine if there were post-hoc,

sample specific modifications that would significantly improve model fit.

Configural model fit was assessed by the CFI and NNFI values being at least .90 for

acceptable fit and .95 for good fit; the RMSEA and SRMR being no greater than .08 for

acceptable fit and .05 for good fit (Little, 2013). The change in CFI being greater than .01

(Cheung & Rensvold, 2002) and the RMSEA moving outside of its previous 90% CI were used

to assess the inclusion of any sample-specific modifications (Little, 2013; Little, Card, Slegers,

& Ledford, 2007). Using the good fitting configural model as a base, the theory-driven

regression pathways between the psychosocial environment components and the two outcomes

(ownership and enjoyment) were specified in place of the previous correlations. Nested model

testing, using the change in the model's chi-square value ($\Delta\chi^2 = 10.828$, $p = .001$), was used to

test for the significance of the latent correlation and regression coefficients in the model. This

significance level was selected given the large sample size, and the minimization of

measurement error at the latent level.

Results

The factor loadings supported that each of the items' or parcels' variance was primarily

caused by its respective latent construct. The composite reliability (CR) statistic value was

calculated for each measure based off of the configural model's factor loadings. When the factor

loadings and residual error values are available, calculating a CR or similar reliability statistic is

preferable to using Cronbach's alpha coefficient, which assumes the indicators' factor loadings

are the same (Hair, Anderson, Tatham, & Black, 1998; Sijtsma, 2009; Zinbarg, Revelle, Yovel,

& Li, 2005). Using the recommendation of .60 (Hair et al., 1998) as the guide for acceptable

reliability with CR, the measurement of the caring climate, ego-involving climate, autonomy

supportive climate, and ownership were measured reliably (See Table 1 for all CR values). Given

the CR for enjoyment (.59) and the task-involving climate (.56) were both within rounding of the

guideline value for good reliability and the latent constructs are representations without error and

correlated as expected with the other constructs, they were kept within the model. The

modification associated with the largest modification index was added to the configural model (two of the task-involving climate parcels' residuals were correlated). This resulted in a significant improvement in model fit, and an overall, good fitting model (χ^2 = 1808.359, CFI = .981, NNFI = .975, SRMR = .027, RMSEA = .052 [90%CI: .051-.054]). Mean scale scores revealed this national exercise franchise succeeded in developing a high caring (M = 4.60 ± .68), high task-involving (M = 4.04 ± .62), high autonomy supportive (M = 5.98 ± 1.00), and low ego-involving (M = 1.79 ± .69) climate. The members also reported high perceptions of ownership (M = 4.22 ± .67) in the class and enjoyment (M = 4.21 ± .78) of the exercise sessions.

Based upon the chi-square difference test for nested models, all the correlations were found to be significant between the constructs. The correlations were also in the directions hypothesized (see Table 1). All the theory-driven regression coefficients were in the hypothesized directions and significant, based upon the nested model chi-square difference test (see Figure 1). The final regression model maintained good fit (χ^2 = 1817.93, CFI = .981, NNFI = .976, SRMR = .028, RMSEA = .052 [90%CI: .049-.054]). Members' perceptions of the exercise class climate significantly predicted their ownership and enjoyment. Specifically, their perceptions of the climate as autonomy supportive (b* = .57, $p < .001$), task-involving (b* = .20, $p < .001$), caring (b* = .04, $p < .001$), and not ego-involving (b* = -.15, $p < .001$) significantly predicted their reports of ownership in the class. Together, the climates accounted for 79% variance of ownership. In addition, members' perceptions of the climate as autonomy supportive (b* = .40, $p < .001$), task-involving (b* = .16, $p < .001$), caring (b* = .05, $p < .001$), and not ego-involving (b* = -.11, $p < .001$) predicted their reports of enjoying the exercise classes. Together, the climates accounted for 39% of enjoyment variance. These results support the hypotheses that

the psychosocial exercise environment components significantly predict members' enjoyment and ownership in exercise.

Discussion

The purpose of this study was to examine the relationship between these four components of the psychosocial environment in an exercise setting, and how those components relate to participants' reported ownership and enjoyment in the group exercise class. The participants' perception of the climate as task-involving and autonomy supportive were expected to be significantly positively correlated, yet distinct, which was supported. Participants' perceptions of the positive components of the psychosocial environment (i.e., caring, task-involving, and autonomy supportive) were hypothesized to positively predict participants' ownership and enjoyment of the exercise session, whereas their ego-involving climate perceptions were hypothesized to negatively predict their ownership and enjoyment of the exercise sessions. These hypotheses were also supported by the final predictive regression model.

Since lack of motivation is cited by nonexercisers as one of the top three reasons why they do not exercise, and 67% of individuals with gym memberships do not use their memberships, finding ways to increase individuals' motivation to exercise is critical to improving individuals' exercise participation (McCarthy, 2004). One of the foundational components that influences individuals' motivation across settings is the environment (Nicholls, 1989). This study was able to highlight an organization that is successfully fostering a high caring, task-involving, autonomy supportive, and low ego-involving climate across its national franchise. This is promising, given the exercise psychology research supporting the positive and adaptive responses exercise participants express when they experience a positive motivational climate (Brown & Fry, 2013; 2014; Fortier et al., 2012; Huddleston et al, 2012; Moore & Fry,

2014). In addition, the focus of this franchise on group exercise classes only, meets the interest

of the majority of people, who have reported a greater enjoyment and effort when training with

one or more people (Dishman & Buckworth, 1996; Monedero, Lyons, & O'Gorman, 2015).

The psychosocial environment created across these franchise locations also highlights the

relationships between the components of the psychosocial environment. As hypothesized,

members' perceptions of an autonomy supportive climate were significantly positively correlated

with the caring and task-involving climate perceptions, and negatively correlated with the ego-

involving climate perceptions. More specifically, the task-involving and autonomy supportive

climates were more strongly correlated with each other than with caring. These results support

that they are still distinct components of the psychosocial environment that affect individuals'

outcomes uniquely. This supports future research including all aspects of the psychosocial

environment (i.e., caring, task-involving, ego-involving, and autonomy supportive) to more fully

understand participants' experience and how these components, separately and together,

influence individuals' motivational and more general psychological responses.

This study extended the literature on ownership with adult exercisers, and the inclusion of

the autonomy supportive climate as an antecedent to participants' reported ownership in

exercise. Ownership was found to be strongly experienced by the members of this group exercise

class franchise. As expected, participants' autonomy supportive and task-involving climate

perceptions were most strongly predictive of their experiencing ownership in their exercise class.

The moderately, positive correlation between the autonomy supportive climate and ownership

supported the hypothesis that autonomy support is distinct from ownership, yet an important

antecedent of ownership. Specifically, an autonomy supportive climate and ownership have more

unique variance due to the different perspectives (i.e., instructor autonomy supportive behaviors

vs participants' ownership feelings) that are considered in their measurement than common variance (i.e., under 50%) from similar item content. This relationship represents the link between instructor behaviors that set the stage for participants to "own" the class experience by modifying exercises, supporting peers, and feeling that it is their class, rather than solely the instructor's class. In addition, their perception of the climate as ego-involving also negatively predicted their experiencing ownership in their exercise class. Thus, it is not solely the presence of the autonomy supportive and task-involving climates, but also the lack of the ego-involving climate that increases the likelihood of exercise participants' perception of ownership in their exercise classes.

Lastly, the participants' enjoyment of exercise was identified as an important outcome of their exercise experience. When examining all the components of the psychosocial environment, the participants' perception of the autonomy supportive and task-involving climates were most strongly related to their enjoyment of the class. Similar to their sense of ownership, participants' enjoyment was also negatively related to their perceptions of an ego-involving climate. This supports the importance of promoting a high task-involving, autonomy supportive, and low ego-involving climate to foster participants' enjoyment of exercise, and increase the likelihood of their continued exercise participation (Dishman et al., 1985; Ekkekakis et al., 2011).

Overall, the results support that this franchise is successful at having instructors in locations across the United States consistently develop a high autonomy supportive, caring, task-involving, and low ego-involving climate that is associated with participants also reporting high ownership and enjoyment in their exercises classes. The franchise regularly develops and trains the instructors with new routines that incorporate current music and exercise movements to provide variety for the membership. These routines regularly include exercise movement

variations, so that participants can select the movement that is comfortable and appropriate for them, which is one way of increasing individuals' ownership over their experience. The franchise locations also publically recognize individuals on their birthdays, which is a caring behavior illustrating their interest in the members outside of the exercise setting. In addition, individuals are recognized for benchmarks from being a first time attendee to completing 100 sessions. These different types of recognitions build members' enjoyment and sense that they are a valued member of the organization, and not just a number. This increases their likelihood to also take ownership of the exercise class experience, and believe that they are able to affect their own and their peers' exercise experience. As individuals know each other in the classes that they regularly attend, they develop comfort to express more ownership over their exercise experience by supporting, helping, and even challenging their peers to attain their exercise goals.

Surprisingly, the caring climate, though significantly related to the participants' enjoyment was not a strong predictor. This may, at least in part, be due to a ceiling effect with the caring climate, which had a mean of 4.56 on a 5.0 scale. Although reliably measured, its high mean, and relatively narrow response variation, are a limitation of this study. The high consistency of individuals' responses on the caring climate scale allowed for less discrimination between individuals' reports of the climate as caring and their enjoyment of the exercise class.

The cross-sectional nature of this study limits the causal interpretations possible. The predictive regression coefficients of this model are theory-driven, and neither multiple time points nor an experimental intervention were included to provide evidence of causation. Rather, the goal of this study was to assess the ability of a large, international exercise class franchise to consistently promote caring, task-involving, and autonomy supportive climates in classes offered across the United States. Thus, further research incorporating multiple time periods of

measurement are warranted, as are interventions in the exercise setting incorporating all the components of the psychosocial environment.

Another limitation of the study was the marginal reliability for two measures that have previously been found to have good reliability across physical activity contexts, gender, and age. However, the use of latent modeling (SEM) allowed for the measurement error to be removed from the latent representations of these constructs; thus, the reliably measured information for each construct was analyzed for significant relationships with the other modeled constructs. This reinforces the benefit of utilizing latent model analysis approaches, particularly when some variables reveal marginal reliability. Replication is needed in the exercise class context to provide support for this study's initial results. While the results support the success of this national franchise to consistently develop just such a climate, the members who responded were predominantly white, middle-aged, women. Therefore, further research targeting other demographics within this franchise's membership, or other franchises that attract a different demographic will expand the generalizability of this study's results.

In conclusion, this study provides support for how professionals in the adult exercise class setting can increase the likelihood of their participants experiencing ownership in classes and enjoyment of exercise sessions by creating a high caring, task-involving, autonomy supportive, and low ego-involving climate. This can be done by group exercise instructors emphasizing a cooperative learning atmosphere, highlighting individuals' effort and improvement, and providing the flexibility for individuals to select the exercise level and intensity that is appropriately challenging. The more adults experience such an exercise environment, the more likely they are to enjoy exercising, and continue exercising (Dishman et al., 1985; Ekkekakis et al., 2011). Providing group fitness instructors with evidence-based

strategies and tools to enhance their ability to foster a caring and intrinsic, not extrinsic, focused

environment may increase the number of adults who move from being nonexercisers to

exercisers.

References

American College of Sports Medicine. (2010). ACSM's guidelines for exercise testing and

   prescription. 8th ed. Philadelphia, PA: Lippincott, Williams, & Wilkins.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students'

   autonomous motivation on learning organic chemistry: A self-determination theory

   perspective. *Science Education*, *84*, 740-756.

Blair, S. N. (2009). Physical inactivity: The biggest public health problem of the 21st century.

   British Journal of Sports Medicine, 43, 1—2.

Brown, T. C. & Fry, M. D. (2013). Association between females' perceptions of college aerobic

   class motivation climates and their responses. *Women & Health, 53*(8), 843—857.

Brown, T. C. & Fry, M. D. (2014). Motivational climate, staff and members' behaviors, and

   members' psychological well-being at a National Fitness Franchise. *Research Quarterly

   for Exercise and Sport, 85*, 208-217.

Cheung, G. W. & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing

   measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal,

   9*(2), 233—255.

Deci, E. L. & Ryan, R. M. (2000). Intrinsic and extrinsic motivation: Classic definitions and new

   directions. *Contemporary Educational Psychology, 25*, 54-67.

Dishman, R. K., & Buckworth, J. (1996). Increasing physical activity: A quantitative synthesis.

   Medicine and Science in Sports and Exercise, 28, 706-719.

Dishman, R. K., Sallis, J. F., & Orenstein, D. R. (1985). The determinants of physical activity

    and exercise. *Public Health Report*, *100,* 158—171.

Duda, J. L. (2013). The conceptual and empirical foundations of Empowering Coaching: Setting

    the stage for the PAPA project. *International Journal of Sport and Exercise Psychology,*

    11(4), 311-318. doi: 10.1080/1612197X.2013.839414.

Duda, J. L. & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and

    sport. *Journal of Educational Psychology, 84*(3), 290—299.

Edmunds, J. K., Ntoumanis, N., & Duda, J. L. (2006). A test of self-determination in theory in

    the exercise domain. *Journal of Applied Social Psychology, 36*(9), 2240—2265.

Ekkekakis, P., Parfitt, G., & Petruzzello, S. J. (2011). The pleasure and displeasure people feel

    when they exercise at different intensities. *Sports Medicine, 41*(8), 641—671.

Fortier, M. S., Duda, J. L., Guerin, E. & Teixeira, P. J. (2012). Promoting physical activity:

    Development and testing of self-determination theory-based interventions. *International*

    Journal of Behavioral Nutrition and Physical Activity, 9(20), 1-14. doi:10.1186/1479-

    5868-9-20

Garcia, A. J., Moore, E. W. G., & Fry, M. D. (2014). Motivational responses in PE predict

    motivation to be physically active. Paper presented at the annual Association for Applied

    Sport Psychology conference.

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of*

    Psychology, 60, 549—576.

Hair, J. F. Anderson, R.E., Tatham, R. L., & Black, W. C. (1998). Multivariate data analysis with readings (5th ed.). Prentice Hall: New Jersey.

Hogue, C. M., Fry, M. D., Fry, A. C., & Pressman, S. D. (2013). The influence of a motivational climate intervention on participants' salivary cortisol and psychological responses. *Journal of Sport & Exercise Psychology, 35,* 85—97.

Huddleston, H. Fry, M. D., & Brown, T. C. (2012). The relationship between perceived motivational climate and intrinsic motivation in corporate wellness environments. *Revista de Psicologial del Deporte, 21* (1), 18-23.

Little, T. D. (2013) *Longitudinal Structural Equation Modeling.* New York: Gilford Press.

Little, T. D., Card, N. A., Slegers, D. W., & Ledford, E. C. (2007). Representing contextual effects in multiple-group MACS models. In T. D. Little, J. A. Bovaird & N. A. Card (Eds.), *Modeling Contextual Effects in Longitudinal Studies* (pp. 121-202). Mahwah, NJ: Lawrence Erlbaum.

Little, T. D., Jorgensen, T. D., Lang, K. M., & Moore, E. W. G. (2014). On the joys of missing data. *Journal of Pediatric Psychology, 39,* 159-162. doi: 10.1093/jpepsy/jst048

Little, T. D., Rhemtulla, M., Gibson, K., & Schoemann, A. M. (2013). Why the items versus parcels controversy needn't be one. *Psychological Methods, 18*(3), 285-300.

Marsh, H. W., Ludtke, O., Nagengast, B., Morin, A. J. S., & Von Davier, M. (2013). Why item parcels are (almost) never appropriate: Two wrongs do not make a right—Camouflaging misspecification with item parcels in CFA models. *Psychological Methods, 18*(3), 257-284.

McCarthy, J. (2004). *IHRSA's (International Health, Racquet & Sportclub Association) Guide to the Health Club Industry for Lenders & Investors (2nd ed). Boston, MA.*

Monedero, J., Lyons, E. J., & O'Gorman, D. J. (2015). Interaction video game cycling leads to higher energy expenditure and is more enjoyable than conventional exercise in adults. *PLoS ONE, 10*(3), e0118470. doi:10.1371/journal.pone.0118470.

Moore, E. W. G. & Fry, M. D. (2014). Psychometric support for the Ownership in Exercise and Empowerment in Exercise Scales. *Measurement in Physical Education and Exercise Science, 18,* 135-151.

Newton, M., Fry, M., Watson, D., Gano-Overway, L., Kim, M-S., Magyar, M., & Guivernau, M. (2007). Psychometric properties of the caring climate scale in a physical activity setting. *Revista de Psiologia del Deporte, 16*(1), 67—84.

Nicholls, J. G. (1989). Competitive ethos and democratic education. Cambridge, MA: Harvard University Press.

Powell, M. G. (2005). Passionate teachers create passionate students. *Delta Kappa Gamma, 71*(2), 52—54.

Pulido, J.J., Sánchez-Oliva, D., Sánchez-Miguel, P.A., Leo, F.M., & García-Calvo, T. (in press). Influence of coaches training on athletes' motivation. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte,* vol. x (x) pp.xx.

Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika, 74*(1), 107-120.

Smith, N., Tessier, D., Tzioumakis, Y., Quested, E., Appleton, P., Sarrazin, P., Papaioannou, A.,

    & Duda, J. L. (2015). Development and validation of the multidimensional motivational

    climate observation system. *Journal of Sport & Exercise Psychology, 27,* 4-22. doi:

    10.1123/jsep.2014-0059.

Thogersen-Ntoumanis, C., Ntoumanis, N., & Nikitaras, N. (2008) Typologies of Greek inactive

    older adults based on reasons for abstaining from exercise and conditions for change.

    Journal of Sports Sciences, 26(12), 1341-1350.

Zinbarg, R. E., Revelle, W., Yovel, I., & Li, W. (2005). Cronbach's α, Revelle'sß, and

    McDonald's ω: Their relations with each other and two alternative conceptualizations of

    reliability. *Psychometrika, 70,* 123–133. doi:10.1007/s11336003-0974-7

Table 1

Strong Model Correlations, Standard Deviations, and Reliabilities

	Caring	Task-involving	Ego-involving	Autonomy Supportive	Ownership	Enjoyment
Caring	0.94					
Task-involving	0.49	0.56				
Ego-involving	-0.48	-0.58	0.69			
Autonomy Supportive	0.52	0.82	-0.65	0.87		
Ownership	0.50	0.77	-0.65	0.85	0.69	
Enjoyment	0.39	0.57	-0.48	0.63	0.58	0.59
Means (SD)	4.60 (.68)	4.04 (.62)	1.79 (.69)	5.98 (1.00)	4.21 (.78)	6.50 (.91)

*Note. The composite reliability (CR) for each scale is presented along the diagonal.*

Table 2

Model Fit Statistics

Model	Chi-square	*df*	CFI	NNFI	SRMR	RMSEA [90% CI]
Config with Asupp items not parcelled	11316.95	512	0.928	0.921	0.042	0.063 [.062-.064]
Configural model with all construct parcels	2546.632	120	0.973	0.965	0.039	0.062 [.060-.064]
Configural model with one correlated residual pair (effort w/ improvement)	1808.359	119	0.981	0.975	0.027	0.052 [.050-.054]
Regression Hypothesis Model	1808.359	119	0.981	0.975	0.027	0.052 [.050-.054]

Figure 1.
Theory-driven Regression Model Values
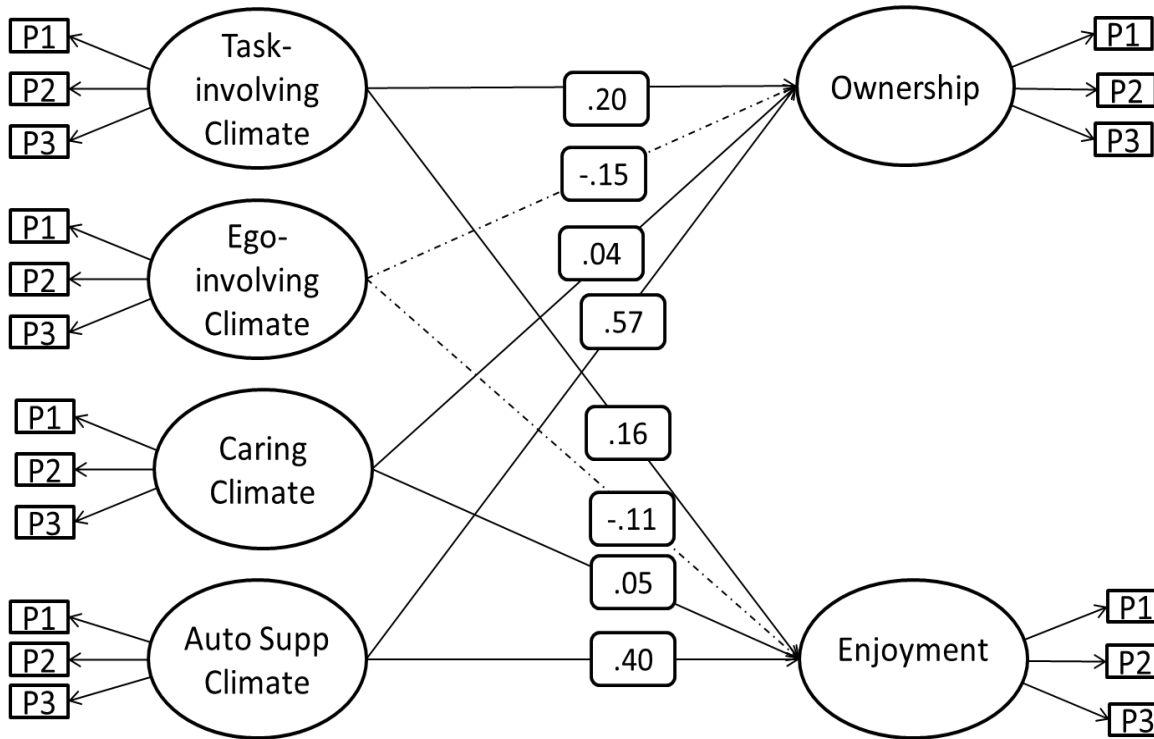
Note. The correlations, though all significant (p < .001; see Table 1) are not included in the figure above to simplify the figure. All regressions were significant (p < .001).