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## Let's Get Physical: Exploring the Socioemotional Motivators of Group Exercise for Older Adults

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## Let's Get Physical!: Exploring the Socioemotional Motivators of Group Exercise for Older Adults

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**ABSTRACT** Approximately 75% of active adults in the U.S. do not meet the recommended levels of overall physical activity (CDC, 2021a). Given the beneficial impact of physical activity on health, an 8-week long, evidence-based group exercise program—Fit & Strong! (F&S!)—was created to improve the health of older adults (Hughes et al., 2004, 2006, 2010). Despite the clear physical benefits of F&S!, it remains unknown what motivates F&S! participants to initially participate in the program and also throughout the program. Drawing from core notions of socioemotional selectivity theory (SST) (Carstensen, 2006), research has found that older adults are highly motivated to exercise by social goals (Steltenpohl et al., 2019). In other work, Fredrickson (2016) has proposed that positivity resonance—a caring interpersonal connection involving shared positivity and synchrony—is impactful in enhancing psychological and physiological wellbeing, and may play a central role in the quality of the older adults' exercise experiences. As such, we investigated the extent to which health, social, and emotional factors motivated older adults to participate in F&S!, as well as the presence of positivity resonance during the program itself. Results indicated that (1) F&S! is most important to older adults for health and social reasons relative to emotional reasons, and (2) older adults, within the context of group exercise, experienced high levels of positivity resonance. These findings highlight the importance of how emphasizing both the social and health benefits of group exercise may be leveraged to motivate and maintain intentions to exercise for older adults.

### INTRODUCTION

Modern medicine has improved to the point where the average lifespan of individuals in high income countries typically grows with every passing year (Ho & Hendi, 2018). Despite

increases in average lifespan, however, chronic health conditions such as cancer, cardiovascular disease, diabetes, and obesity pose a significant threat. Collectively, these conditions are the

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leading causes of death in the United States (CDC, 2021b). Moreover, approximately six in ten U.S. adults are living with a significant chronic health condition (CDC, 2021c); this number grows to 85% in adults aged 65 and older (NIH, 2017). The United States is only growing older—it is projected that by 2060, a quarter of Americans will be over the age of 65 (U.S. Census Bureau, 2018). Thus, we must consider how to tackle these persistent health issues, or in the very least, mitigate the effects of chronic health conditions in older adult populations.

By far, engaging in physical activity is noted as one of the most important tools for enhancing health and wellness for individuals of any age (CDC, 2021a). Exercise has been shown to improve the basic indicators of good physical health, such as balance, blood pressure, and cardiovascular condition. The risk of developing type 2 diabetes and commonly occurring cancers are lowered with regular physical activity (CDC, 2021c). Considering the levels of chronic illness in older adults, it is necessary to encourage exercise within this specific group; with this, it is possible we may see a decrease in the number of individuals living with one or more chronic illnesses. Recent research is beginning to discover the benefits of physical activity on mental health, which has a noteworthy connection to the development of chronic illness. In both older and younger adults, engaging in physical activity has a significant impact on affect and cognition (Hogan et al., 2013). Independent of age, exercise is associated with increases in positive affect and cognitive performance (Reed & Ones, 2006; Hillman et al., 2003). For older adults, exercise specifically has been seen to improve memory (Erickson et al., 2011), attention (Okumiya, 1996), and executive function (Weinstein et al., 2012). Healthy aging also relies on other behavioral and socioemotional factors, which are both affected by regular physical activity. Social support and access to a large network of peers has a considerable association with cognitive function in older adults (Bennett et al., 2006). Regardless of age, individuals who engage in physical activity are more likely to have a larger social network, promoting their social contact with others (Vance et al., 2005). Despite the benefits

of engaging in exercise, 75% of active adults in the United States do not meet the recommended levels of physical activity, with an even greater percentage of older adults living completely inactive lives (CDC, 2020).

A health intervention, Fit & Strong! (F&S!), is an evidence-based group exercise program that was designed to improve the health and wellbeing of older adults. This robust program was specifically designed to decrease symptoms of osteoarthritis and joint pain in older adults (Hughes et al., 2004, 2006). During the course of F&S!, participants complete three exercise classes a week over the course of eight weeks. Throughout the duration of F&S!, participants complete activities aimed at improving flexibility and balance as well as aerobics and strengthening. There is also a health education component, which serves to reinforce self-efficacy by teaching participants how to accommodate their pain and alleviate symptoms of osteoarthritis. There are clear benefits of this group-based exercise intervention program: F&S! participants demonstrated long-term maintenance of engagement in physical activity, reduction in pain, improvement in lower-extremity function, and reduction in depression and anxiety well after program conclusion (Hughes et al., 2010). There is clear evidence for the effectiveness of F&S! for older adults' physical health, but how can we encourage more older adults to participate in group-based exercise? What are some of the values that older adults hold that researchers can leverage to encourage adherence and maintenance of physical activity? A prominent life span theory of motivation, socioemotional selectivity theory (SST) (Carstensen, 1993, 2006), may shed some light on these questions and was a driving force in the work presented here.

### Theoretical Foundations

Later life is often defined through terms of loss and decline; it is well known that compounding physical and mental declines occur as individuals age (Craik & Salthouse, 2008). However, we rarely see the older adult experience defined by the significant amount of growth that occurs as well. Older adults demonstrate a noticeable

improvement in general wellbeing and emotion regulation as they age (Carstensen, 2006; Verstaen et al., 2020). When compared to younger adults, older adults generally experience greater emotional wellbeing (Carstensen et al., 2010; Carstensen et al., 2011). The Selection, Optimization, and Compensation (SOC; Baltes, 1997) model explains how the balance of age-related gains and losses in various areas of functioning influence psychological well-being. As mentioned above, advancing age is associated with physical and cognitive losses, leading older adults to be more selective regarding the goals they choose to pursue, while also striving to optimize their personally relevant goals. When goals cannot be met, older adults find ways to compensate, potentially leading to changes in motivations and values.

Of note, SST (Carstensen, 1993, 2006) proposes that as individuals age, their perception of time changes, which is associated with different goals, values, and priorities. In younger adulthood, individuals view their futures as wide and expansive, allowing them to prioritize future-oriented goals such as acquiring information and developing large extended social networks. In older adulthood, individuals view their futures as limited and narrow, leading them to prioritize goals in the present. This shift has been thought to lead older adults to prioritize socioemotional goals, such as having positively valenced and emotionally meaningful experiences during social interactions and beyond. These motivational shifts are reflected in younger and older adults' social network structures. Research indicates that older adults curate social circles that are conducive to positive interactions and are emotionally meaningful, even if those social networks reduce in size in older age and not because of death (Lang & Carstensen, 1994). Put simply, younger adults prioritize the *quantity* of their relationships, whereas older adults prioritize the *quality* of their relationships. This difference in social network curation has downstream effects on the quality of relationships, with older adults often reporting increased levels of perceived social support and lower levels of interpersonal conflict (Fingerman & Charles, 2010).

If older and younger adults have and prioritize different goals, then could it be the case that younger and older adults are differentially motivated to exercise? Steltenpohl and colleagues (2019) investigated this question using focus groups in which individuals discussed their motivations to exercise, barriers to exercising, and preferences for with whom, when, and where they exercise. The authors found that for older adults, the desire to socialize with others and maintain their current relationships played a major role in their motivation to exercise. In other words, older adults viewed exercising as “we time”. Younger adults, conversely, felt differently. Younger adults noted that they were more motivated to exercise for self-improvement and self-regulation. Younger adults would much rather be alone in an exercise context than older adults, viewing exercising as “me time”. Put simply, this pattern of results suggests that older adults are more motivated to exercise by social goals, whereas younger adults are more motivated to exercise by instrumental goals. When we look at how the exercise intervention F&S! is designed (i.e., group-based classes), there is a high level of social interaction and shared (likely positive) experiences. In line with the appraisal approach to aging and emotion (AAAE) (Young et al., 2021), older adults may appraise group-based exercise experiences more positively than would younger adults, given age-related motivational shifts toward socioemotional goals. Based on the tenets of SST, it is plausible to assume that this exercise environment would be conducive for promoting the emotional and physical wellbeing of older adults by increasing exercise engagement, maintenance, and adherence.

### Positivity Resonance

Considering the interest of older adults in sharing emotionally meaningful and positive emotions with close others, it is important to understand and promote positive experiences within the context of improving health and wellbeing. It is proposed that positivity resonance—a caring interpersonal connection involving shared positivity and synchrony—is particularly influential in enhancing psychological and physical wellbeing (Fredrickson, 2016).

Specifically, higher perceived positivity resonance has been shown to be associated with flourishing mental health, lower levels of depressive and illness symptoms, and less loneliness (Major et al., 2018). An important aspect of this theory is the incorporation of biobehavioral synchrony (e.g., synchronous body movements). Shared movement has been shown to improve relationships (Vacharkulksemsuk & Fredrickson, 2012) and evoke compassion (Valdesolo & DeSteno, 2011). It has also been found that higher levels of physiological synchrony during moments of shared positive affect were associated with higher quality social interactions (Chen et al., 2020). Given the intrinsic and synergistic association of behavioral and physiological synchrony with positive affect, positivity resonance may play a central role in the quality of shared exercise experiences, such as Fit & Strong!.

### CURRENT STUDY: FIT & STRONG! FOLLOW UP

In an initial study, 145 older adults participated in the 8-week long, evidence-based group exercise program—Fit & Strong!. However, the factors that motivated older adults' engagement with and adherence to the F&S! program remain unknown. In addition to increased positive affect (i.e., emotion-related factors), F&S! participants may also have been motivated by health-related reasons, such as improving their physical health, or social reasons, such as socializing with others in their group. As such, we conducted a follow-up phone study that occurred after F&S! ended. Members of the research team contacted F&S! participants to inquire more about which factors – social, health, and emotional – were most motivating to them during their time in F&S!. In addition, we also measured the extent to which F&S! participants experienced positivity resonance, a caring interpersonal connection involving shared positivity and synchrony, with their group mates during their classes. By talking with past F&S! participants and obtaining these data, we can further understand how the socioemotional aspects of group-based exercise intervention programs can be used to improve older adults' adherence to and maintenance of exercise programs.

## METHODS

### Participants

Of the 145 older adults who participated in Fit & Strong!, we recontacted 114 of them to participate in a follow-up phone interview conducted by members of the research team. Forty-nine participants completed the phone interview ( $M_{age} = 68.76$  years,  $SD_{age} = 5.46$ , age range: 60-80 years; 75% female). Participants were compensated with a \$15 gift card to a local grocery store. The phone interview lasted no longer than 15 minutes. The protocols were approved by the Institutional Review Board (IRB).

### Materials

*Positivity Resonance.* Participants completed a modified measure of positivity resonance (Major et al., 2018). This measure assessed the extent to which they experienced positivity resonance during F&S! using a 7-item positivity resonance measure (Major et al., 2018) and asked the participants, what percentage of the time (0% - 100%) that they felt positively socially connected to others in their class (e.g., “Considering the eight weeks you spent in Fit & Strong! when you were interacting with others in your class, for what proportion of time, from 0% to 100% did you experience a mutual sense of warmth and concern toward another?”). Responses were averaged ( $\alpha = .96$ ), with higher scores indicating a greater percentage of time that participants felt positively socially connected to others in their class.

*Motivating factors.* Participants also answered questions about what motivated them during the Fit & Strong! program, specifically focusing on social, health, and emotional factors. Each factor had three items. For the social factor, participants indicated to what extent they were motivated during F&S! by (1) socializing with other people, (2) exercising as a group, and (3) getting to know new people ( $\alpha = .79$ ). For the health factor, participants indicated to what extent they were motivated during F&S! by (1) increasing their physical activity, (2) focusing on their own health, and (3) learning about new exercises ( $\alpha =$

.77). For the emotional factor, participants indicated to what extent they were motivated during F&S! by (1) focusing on their emotions, (2) learning about their emotions, and (3) increasing their positive emotions ( $\alpha = .87$ ). Responses were made on a 7-point scale (1 = *Not at all*, 7 = *Extremely*). Responses were averaged across their respective subscales, with higher scores indicating how much participants were motivated by each factor during Fit & Strong!.

**Procedure**

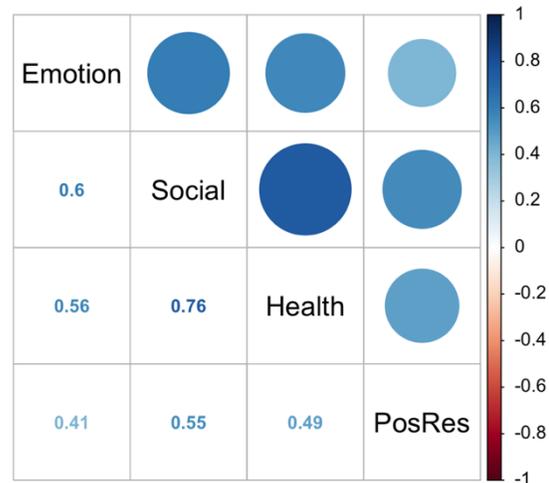
Participants were recruited for a follow-up telephone interview from a list of past Fit & Strong! participants. Members of the research team contacted prospective participants. After providing verbal consent, participants completed all measures over the phone. They were first asked to openly elaborate on their experiences with the exercise program. Next, participants were asked questions regarding their motivating factors, as well as some qualitative questions regarding their experience. For example, participants were asked to elaborate on what was most meaningful to them about their experience in F&S!, what motivated them to participate in F&S!, and what kept them motivated during the eight weeks of F&S!. After that, participants completed the measure of positivity resonance during F&S!. Lastly, researchers asked participants to openly elaborate on to what extent Fit & Strong! has impacted their health and social connectivity. Participants were then debriefed and informed of their compensation.

**RESULTS**

Data were analyzed using R version 4.0.2 (R Core Team, 2019). We conducted a one-way, repeated measures analysis of variance (ANOVA) with factor type as the repeated measure with three levels: health, social, and emotional. The ANOVA was significant,  $F(2, 88) = 20.61, p < .001$ , indicating that there were differences between the three factors. The assumption of sphericity was not met ( $p = .005$ ), thus Greenhouse-Geisser corrections were applied to the degrees of freedom for  $p$ -values. Post hoc tests demonstrated health factors ( $M = 5.53, SD = 1.13$ ) were more motivating than emotional factors ( $M = 4.40, SD = 1.58$ ),  $t(44) = -5.72, p <$

.01, Cohen's  $d = -0.84$ . Health factors were also more motivating than social factors ( $M = 5.05, SD = 1.31$ ),  $t(44) = 3.66, p < .01$ , Cohen's  $d = 0.35$ , but social factors were more motivating than emotional factors,  $t(44) = -3.37, p < .01$ , Cohen's  $d = -0.49$ .

Older adults reported experiencing positivity resonance within the F&S! program 77.15% of the time, which is higher than previously reported levels of positivity resonance (65.93%; Major et al., 2018). All three motivating factors were positively correlated with positivity resonance. Social factors, above all, were the most strongly correlated with positivity resonance. It was also found that positivity resonance was significantly and positively correlated with continuous age ( $r = .31, p = .035$ ). Please refer to Figure 1 for the correlation matrix.



**Figure 1.** Emotion = emotion-related factor. Social = social-related factor. Health = health-related factor. PosRes = positivity resonance. Pearson correlations for the total sample are presented above. Correlations with  $p$ -values greater than .01 are considered insignificant and are indicated by empty cells. The legend on the right side of each correlation matrix shows the correlation coefficients and corresponding colors. Positive correlations are displayed in blue, and negative correlations are in red. The color intensity and size of the circles are proportional to the correlation coefficients.

In the qualitative portion of this study, participants were allowed to elaborate on what they enjoyed the most about the program, which sheds light on which factors motivated them the

most and mirrors the quantitative data. After examining participants' responses, there appeared to be two general themes in terms on what motivated them during F&S: (1) the health benefits of F&S!, and (2) the social camaraderie experienced during F&S!. For example, one participant explained: *"You get a group psyche going that if everyone seems to be on the same page, you're more apt to stick with it."* Another participant highlighted a similar sentiment: *"Everybody had love for everybody. I mean, it was just a group of people coming in to do things that would help their health and their minds, too, the way that they think. [...] The group that I was with, once you get started with them, we were like a pack."* This observation notes how important socializing was to older adults in this program, and the positive effect it had. Moreover, these quotes typify how shared positive affect and mutual care are a vital and natural part of the experiences shared during F&S!, which is consistent with the tenets proposed in positivity resonance theory (Fredrickson, 2016). Furthermore, others noted that the friendships they made during the intervention have lasted, even throughout the COVID-19 pandemic. Participants were noted to have shared letters, emails, and telephone calls with their new friends. The social factors of Fit & Strong! were a large motivating factor for older adults to exercise in addition to the health reasons.

## DISCUSSION

The goal of this follow-up phone interview was to examine which factors – social, health, and emotional – were motivating to individuals who recently participated in a group-based exercise intervention program, Fit & Strong!. The results clearly demonstrate that health factors, above all else, acted as the largest motivator for older adults during F&S!. There are clear and positive benefits of F&S! on one's health (Hughes et al., 2010), so the fact that health factors were most motivating is not surprising. What is interesting and of importance, however, is that social factors were not far behind health factors in terms of their motivational influence during F&S!. In fact, participants rated health factors as only half a point more motivating than social factors compared to emotional factors, which were a full

point and half a point behind health and social factors, respectively. However, the means for all three factors were above the midpoint, meaning that health, social, and emotional factors were at the very least moderately motivating to the individuals who participated in F&S!.

These findings suggest that researchers designing exercise interventions for older adults should consider all the motivational influences that could lead one to participate in a group-based exercise intervention. Most notably, researchers should also consider the powerful influence of positivity resonance in a group-based exercise intervention program, as positivity resonance was positively correlated with all three factors, but especially social factors. This novel exploration of positivity resonance indicates that group exercise programs may be conducive to increasing levels of positivity resonance amongst older adults, the effects of which include flourishing mental health and fewer symptoms of chronic illness.

## Implications and Conclusion

Although this work is limited by the reliance on participant self-report methodology, the current work offers important implications for how older adults could be more effectively encouraged to exercise regularly. Findings from the follow-up study highlight the important role of socioemotional aspects of group-based exercise, specifically positivity resonance. The finding that participants reported high levels of positivity resonance during F&S! suggests that F&S! may be a conducive environment to promote experiences of shared positive affect and mutual care (i.e., positivity resonance). By leveraging these motivating factors, researchers may be better able to encourage change in physical health and exercise behaviors in this vulnerable population, potentially leading to increases in positive affect, flourishing mental health, and a decrease in symptoms related to chronic illness (Major et al., 2018). The current work adds to an expanding collection of research that encourages the implementation of socioemotional factors in exercise geared towards older adults. Future research should be devoted to further understanding how biobehavioral synchrony in group-based exercise interventions contribute to

older adults' positive exercise experiences and exercise maintenance and adherence.

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Throughout the writing of this thesis, I have received a great amount of support and encouragement. I would like to thank my advisor, Dr. Joseph Mikels, for his excellence in psychological research. His assistance in formulating my research questions and providing the basis of this work was invaluable. I would also like to thank and acknowledge the work of my colleagues, Alyssa Minton and Jason Snyder, for their limitless bank of knowledge, statistical prowess, and everlasting motivation. To my fellow research assistant, David Taullahu, we did it! I would like to offer my eternal thanks and admiration to my family and friends for acting as voices of reason and sympathetic ears. To my father: you dedicated your life to the education and success of your daughters—my work now is dedicated to carrying on your legacy through hard work, kindness, and love. Until we meet again, Baba. As Dr. Mikels would put it, “onward and upward!”.

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