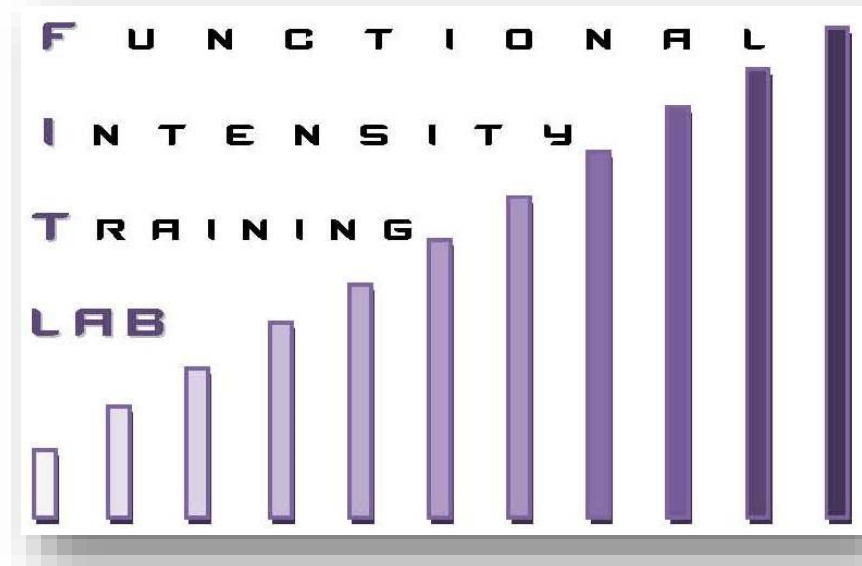# KANSAS STATE UNIVERSITY

Greater self-efficacy and group cohesion facilitate adherence to CrossFit exercise

Katie M. Heinrich, Ph.D., Brandon C. Irwin, Ph.D., Katelyn Gilmore, B.S., Tammi M.C. Paolilli, M.S., Taran Carlisle, B.S.

Kansas State University, Department of Kinesiology, Manhattan, Kansas, USA, kmhphd@ksu.edu

bit.ly/fitlab

INTRODUCTION

Group dynamics theory posits that fitness class participation involves both personal and collective factors (Carron et al., 1988).

- Individual attraction to the group (ATG) reflects whether the group satisfies personal needs.
- Group integration beliefs (GI) reflect individual perceptions about the group's functioning.
- Both ATG and GI are considered to have task (e.g., goals and objectives) and social (e.g., group relationships) components.

Fitness classes are considered *minimal groups* where participants interact to enhance and protect self-esteem.

- Greater cohesiveness in fitness classes leads to a social collective and greater adherence; specifically, greater ATG-task has predicted adherence (Carron et al., 1988).

CrossFit®, a type of group-based high-intensity functional training, has recently gained popularity, yet little research has examined psycho-social factors related to adherence.

The purpose of this study was to investigate differences in self-esteem and adherence to CrossFit®, as well as group cohesion for adherers.

METHODS

Design

12-month program evaluation study at a university CrossFit gym

Participants

57 enrolled at baseline and provided written consent (*additional participants were allowed to enroll over time, but are not included in this analysis, N = 89*)

More participants were female (52.6%, n = 30), white (91.2%, n = 52), and had some college education (97.2%, n = 55)

Ages ranged from 18-66y (m = 30.8 ± 12.3y)

Measures

Baseline questionnaire

Fitness Attitudes Scale (Kerner et al., 2001) – measured attitudes toward exercise.

- Participants rated the item "CrossFit activities contribute to my self-esteem" on a 7-point scale from -3 "strongly disagree" to 0 "neutral" to +3 "strongly agree"

Modified Exercise-Related Self-Confidence (MISEI; Adapted from Perez, n.d.; Bandura, 2006)

- 11 items on a 10-point scale from 1 "cannot do this at all" to 5-6 "moderately certain I can do this" to 10 "certain I can do this successfully"

12-month questionnaire

Modified Group Environment Questionnaire (mGEQ; Adapted from Carron & Spink, 1993)

- 18 items on a 9-point scale from 1 "strongly disagree" to 9 "strongly agree"
- Four scales: ATG-Task, ATG-Social, GI-Task, GI-Social

Procedure

In February 2013, participants completed informed consent, baseline questionnaires, and health and fitness assessments.

Measures were repeated at 2-, 6-, and 12-months.

Exercise program

Coach-led group-exercise classes were offered Monday-Saturday at multiple times each day.

Classes typically included 10-15 minutes for warm-up, 5 minutes to discuss the skills and workout of the day, 5-20 minutes of skill work, the workout of the day 5-30 minutes, and 5 minutes for cool-down.

A 2-hour open gym time was available on Sundays.

Statistical Analysis

SPSS 20 was used for to calculate descriptive characteristics.

Independent samples t-tests were calculated to compare between group differences, with significance set at p < .05.

RESULTS

Over 73% (n = 42) adhered to 12 months of CrossFit® exercise; 22 completed a 12-month questionnaire.

At baseline, adherers reported significantly higher agreement (m = 2.3 ± 0.8) than dropouts (m = 1.6 ± 0.9) that "CrossFit activities contribute to my self-esteem" t = 2.1, p = .043).

Significant differences were also found at baseline between adherers and dropouts for two exercise-related self-confidence items:

- "Establish and maintain relationships with people I don't know well" (adherers m = 7.2 ± 2.0, dropouts m = 6.0 ± 2.6; t = 2.1, p = .039) and
- "Do physical exercises or compete in a sport that requires strength" (adherers m = 7.9 ± 1.9, dropouts m = 5.7 ± 2.2; t = 3.1, p = .003).

As shown in Table 1, the highest rated mGEQ items were "I enjoy my time with the people in my community," "I like the type of exercise we do," "I enjoy the social interactions with my community," and "I would miss the members of my community if the program ended."

Sub-scales indicated that ATG-task was highest, followed by ATG-social, GI-task, and GI-social (see Table 1).

Table 1. Modified Group Environment Questionnaire (n = 22)

Item	Range	Mean	SD
I enjoy my time with the people in my community	7-9	8.5	0.6
I like the type of exercise we do with this community	7-9	8.5	0.7
I enjoy the social interactions I have with my community	6-9	8.4	1.0
I would miss the members of my community if the program ended	5-9	8.3	1.0
I'm happy with the amount of progress I make towards my health and fitness goals with my community	5-9	8.1	1.2
I'm happy with my community's level of desire to achieve our health and fitness goals	5-9	8.0	1.0
This community gives me enough opportunities to make progress toward my health and fitness goals	5-9	8.0	1.1
If members of our community have problems with the workouts, everyone wants to help them	4-9	8.0	1.3
For me, CrossFit is an important social community to which I belong	3-3	7.9	1.5
Our community is united in trying to reach its health and fitness goals	2-9	7.3	1.8
Our community members communicate freely about each other's progress toward their goals	1-9	7.1	2.1
Our community spends time socializing before or after workouts	2-9	7.0	1.9
Our community members have similar aspirations for the community's overall health and fitness	1-9	6.8	2.4
We all take responsibility for the improved health and fitness of our community	1-9	6.5	2.2
Our community would like to spend time together if the program was to end	1-9	6.3	2.0
Some of my best friends are in this community	1-9	6.1	2.4
Members of our community stick together outside of the gym	1-9	6.0	2.5
Members of our community would rather go out as a community than go out on their own	1-9	5.8	2.5
Subscales	Range	Mean	SD
ATG – Task	5.5-9	8.2	0.9
ATG – Social Cohesion	5.6-9	7.8	1.0
GI – Task	1.8-9	7.1	1.8
GI – Social Cohesion	2.0	6.3	2.0

CONCLUSIONS

Results were consistent with previous research on fitness classes showing that self-esteem at baseline and attraction to group tasks were highest for adherers.

Future research could try to increase satisfaction of personal needs by helping set appropriate goals and objectives for those with lower self-esteem when they start their exercise participation (ATG-Task).

REFERENCES

Bandura, A. (2006). *Self-efficacy beliefs of adolescents.* 307-337. Information Age Publishing. Accessed 12 December 2012 at http://www.uky.edu/~eushe2/Bandura/BanduraGuide2006.pdf

Carron, A. V. & Spink, K. S. (1993). Team building in an exercise setting. *The Sport Psychologist, 7*, 8-18.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1988). Group cohesion and individual adherence to physical activity. *Journal of Sport & Exercise Psychology, 10*, 127-138

Kerner, M. S & Grossman, A. H. (2001). Scale construction for measuring attitude, beliefs, perception of control, and intention to exercise. *Journal of Sports Medicine and Physical Fitness, 41*, 124-131.

Perez, E. (n.d.). *MISEI – Self-Efficacy for Multiple Intelligences.* Accessed on 12 December 2012 at http://www.uky.edu/~eushe2/Pajares/misei.pdf