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7 Motivation Contagion When Instructing Obese Individuals: A Test in Exercise Settings

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1 **Abstract**

2 We examined motivation contagion in a hypothetical exercise setting. Exercise science
3 students ($n=164$) were provided with quotes of hypothetical male and female obese exercisers
4 displaying different quality of motivation to start an exercise program. We used a 3 (exerciser
5 motivation) \times 2 (exerciser gender) \times 2 (student gender) between-subjects experimental design
6 to examine students' (a) motivation to instruct, (b) interpersonal style, (c) perception of
7 barrier efficacy of the exerciser, and (d) effort to identify factors that could maximize the
8 effectiveness of an exercise program for the exerciser. Results showed that students displayed
9 less controlled motivation and rated the exerciser as more capable of overcoming barriers to
10 exercise when they perceived the exerciser to be autonomously motivated. However,
11 students, particularly females, reported more autonomy support and invested more effort
12 toward female exercisers with controlled motivation. Our findings indicate that motivation
13 contagion effects are plausible in exercise settings and may affect interactions between fitness
14 instructors and obese clients.

15

16 *Keywords:* motivation contagion; self-determination; autonomy support; controlling
17 behaviors; barrier efficacy; confirmation bias

1 Motivation Contagion When Instructing Obese Individuals: A Test in Exercise Settings

2 Obesity is related to many chronic health conditions, such as type 2 diabetes and
3 related cardiovascular diseases (Sullivan, Morrato, Ghushchyan, Wyatt, & Hill, 2005). The
4 social context, especially instructors' interpersonal styles, can play a salient role in
5 influencing exercisers' motivation and adherence (e.g., Edmunds, Ntoumanis, & Duda, 2007).
6 Extensive research has shown that many obese individuals feel stigmatized and report that
7 they are treated disrespectfully by health professionals, including fitness instructors
8 (Anderson & Wadden, 2004; Phul & Heuer, 2009). Currently it is unknown whether beliefs
9 and behaviors of health professionals toward obese individuals are partly influenced by their
10 perceptions of the different motivations of the latter to engage (or not) in health-related
11 behaviors. The effect of perceptions of others' motivation on the perceiver's own motivation
12 and instructional style has been labeled motivation contagion (Wild & Enzle, 2002). Thus, in
13 this study we were interested to explore the extent to which motivation contagion effects
14 might be in operation when instructing obese clients with different motivations for exercise
15 engagement.

16 We used the self-determination theory (SDT; Ryan & Deci, 2000) framework in this
17 study. According to SDT, there are different interpersonal styles to instruct, but most SDT-
18 based studies have distinguished between an autonomy supportive and a controlling
19 interpersonal style. *Autonomy support* refers to behaviors that support individuals'
20 psychological needs by providing meaningful rationales for engaging in an activity,
21 acknowledging negative feelings, and offering choices (Deci, Eghrari, Patrick, & Leone,
22 1994). In contrast, *controlling behaviors* thwart psychological needs via the use of coercion,
23 intimidation and conditional acceptance (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani,
24 2010). Studies in the exercise domain have indicated that perceived autonomy support may
25 lead to higher adherence levels (e.g., Edmunds, Ntoumanis, & Duda, 2008) and better mental

1 health outcomes (e.g., Rouse, Ntoumanis, Duda, Jolly, & Williams, 2011). In contrast,
2 controlling instructional behaviors have been associated with decreases in physical activity
3 participation (e.g., Vansteenkiste, Simons, Soenens, & Lens, 2004).

4 Based on the tenets of SDT, motivation can be categorized into different types
5 according to their underlying degree of self-determination. Intrinsic motivation (doing an
6 activity for the enjoyment it provides), integrated regulation (performing an activity because
7 it is congruent with personal goals and values), and identified regulation (engaging in an
8 activity because it offers personally valued outcomes) are indices of *autonomous* motivation.
9 Introjected regulation (acting to avoid internal pressures) and external regulation (acting as a
10 result of external pressure or reward) are indices of non-autonomous or *controlled* motivation.
11 Finally, *amotivation* refers to a state in which a person lacks both autonomous and controlled
12 motivation. Previous research has shown that more autonomous forms of motivation are
13 associated with efficacy to overcome exercise barriers (Thøgersen-Ntoumani & Ntoumanis,
14 2006), involvement in physical activity (Edmunds et al., 2008) and adherence to weight
15 control behaviors (Silva et al., 2011).

16 **Motivation Contagion**

17 Stemming from the tenets of SDT, Wild and Enzle (2002) suggested that apart from
18 the direct application of interpersonal support or control, one's motivation may be enhanced
19 or undermined based on his/her perception of motivation of other people within the social
20 environment. Individuals subconsciously draw on their perceptions of other people's
21 motivation and self-generate expectations regarding their own quality of task involvement
22 and engagement in an activity. These expectations will in turn shape their actual motivation
23 toward the activity and, if they are in a position of authority, might influence their
24 interpersonal style towards their subordinates in ways that are congruent with their
25 expectations. For instance, previous research in the educational domain has documented that

1 teachers' interpersonal style may be influenced by their perceptions of students' motivation.
2 Pelletier and Vallerand (1996), Skinner and Belmont (1993), and Sarrazin, Tessier, Pelletier,
3 Trouilloud, and Chanal (2006) showed that when teachers perceived students to be more
4 autonomously motivated, they offered them more autonomy support. In contrast, controlling
5 behaviors were utilized when students were perceived to have controlled motivation. Pelletier,
6 Séguin-Lévesque, and Legault (2002) and Taylor, Ntoumanis, and Standage (2008) replicated
7 these findings and identified teacher self-determined motivation to instruct as a mediator in
8 the instructional style-student motivation relationship.

9 **Gender Differences**

10 Previous research has examined gender differences in perceived receipt of autonomy
11 support with mixed findings. For instance, Grolnick, Gurland, DeCoursey, and Jacob (2002)
12 compared levels of autonomy support provided by mothers using both objective ratings by
13 external raters and self-reports by their sons and daughters, and found no differences between
14 sons and daughters. In contrast, Soenens and Vansteenkiste (2005) found that girls, compared
15 to boys, reported higher levels of perceived autonomy support from their mothers. No studies
16 have explored gender differences in perceived *provision* of autonomy support. However,
17 research outside the SDT literature has suggested that males and females may have different
18 orientations towards both seeking and providing support to others. For instance, when
19 compared to men, women are more likely to seek and receive support from others. Women
20 are also more ready to provide support to others, as such a behavior is assumed to be accepted
21 and appreciated (Barbee et al., 1993). In our study we were interested to explore whether the
22 gender of the participant and the gender of the exerciser would moderate potential motivation
23 contagion effects in terms of not only provided autonomy supportive/controlling motivational
24 strategies but also with regard to instructors' motivation to instruct.

25 **The Current Study**

1 recently signed up to this hypothetical gym. The hypothetical exercisers shown were male or
2 female clients, middle-aged, white, and visibly obese with a purported Body Mass Index of
3 33. Instructors were provided with quotes given by these exercisers regarding their reasons to
4 begin exercising. These quotes were intended to imply different types of motivation to
5 exercise: autonomous (e.g., “it is important for me to lead a healthy lifestyle”), controlled
6 (e.g., “my partner has been nagging me to start exercising for a long time”), and neutral
7 reasons (e.g., “you can call that my New Year resolution”). Thus, instructors were randomly
8 allocated into one of 6 conditions (autonomous motivation, controlled motivation, neutral
9 motivation \times male exerciser, female exerciser). As a manipulation check, the instructors were
10 asked to rate their perceptions of motivation of all three exercisers. Our design was a 3
11 (exerciser motivation) \times 2 (exerciser gender) \times 2 (instructor gender) between-subjects
12 experimental design.

13 The scenarios referred to obese individuals at the beginning stages of an exercise
14 program in order to emulate a situation in which instructors are unfamiliar with the exercisers,
15 and therefore motivation contagion effects are likely to be stronger. Similar strategies of
16 introducing participants to strangers can be found in previous research on motivation
17 contagion (e.g., Radel, Sarrazin, Legrain, & Wild, 2010).

18 The instructors then completed the remaining parts of the questionnaire by focusing
19 on one of the exercisers, depending on the allocated condition. The target male and female
20 exerciser was depicted with the same photo within each motivation condition. Instructors
21 then performed an imagery exercise, using a pre-recorded script, in which they imaged
22 themselves instructing the target exerciser in a gym. The imagery scripts were used to
23 facilitate the vividness of the scenario. Following the imagery activity, we asked the
24 instructors to rate the ease of mentally creating the images described in the script (“How easy
25 was it for you to mentally create the images described in the scenario?”) using a 7-point scale

1 (1 = “Very hard”, 7 = “Very easy”). They reported a mean score of 5.65, indicating that they
2 generally found it easy to form images of the scenarios described in the scripts. Instructors
3 then reported their own motivation towards instructing the target exerciser, the motivational
4 strategies they believed would be effective to motivate the exerciser, and their perceptions of
5 the efficacy of the exerciser to overcome barriers to exercise. Finally, instructors were asked
6 to identify as many factors as possible that could maximize the effectiveness of an exercise
7 program designed for the exerciser. This was used as a proxy measure of instructors’
8 investment of effort to instruct.

9 Previous research has shown that physically more attractive individuals may be
10 perceived as more competent in various aspects of life (Eagly, Ashmore, Makhijani, & Longo,
11 1991). In order to eliminate the potential confounding effect of attractiveness, we asked in a
12 pilot study 19 postgraduate students to rate the perceived attractiveness of the individuals
13 portrayed in the photos. Results of a repeated measures ANOVA indicated that the perceived
14 attractiveness ratings of the hypothetical exercisers were not significantly different ($p = .46$,
15 **partial** $\eta^2 = .052$).

16 **Measures**

17 **Perceived motivation of exercisers.** The Behavioural Regulations in Exercise
18 Questionnaire (BREQ; Mullan, Markland, & Ingledew, 1997) was used to measure the
19 perceived motivation of the exercisers. The original scale is a self-report measure of intrinsic
20 motivation, identified regulation, introjected regulation and external regulation to exercise. In
21 our study, we modified the items to measure the motivation of the hypothetical exerciser as
22 perceived by the instructor (e.g., “because other people probably said he should”). Due to the
23 fact that the instructors had to complete the scale with regard to all three exercisers, as well as
24 due to the overall length of the whole questionnaire pack, only two items per subscale from
25 the questionnaire were used. Items with the best face validity were chosen from the original

1 scale. Autonomous motivation was represented by combined intrinsic motivation and
2 identified regulation scores, and controlled motivation by combined introjected and external
3 regulation scores. Amotivation was not measured in our study because we wanted to
4 specifically contrast autonomous and controlled forms of motivation and because the scenario
5 referred to clients who had already signed up to an exercise program. Cronbach alphas for
6 autonomous and controlled motivation in this study were .92 and .74, respectively.

7 **Motivation to instruct.** Instructors' intrinsic motivation, identified regulation, and
8 external regulation to instruct were measured using an adapted version (e.g., "I would instruct
9 him/her because that would be fun") of the Situational Motivation Scale (Guay, Vallerand, &
10 Blanchard, 2000) which taps intrinsic motivation, identified regulation, external regulation
11 and amotivation. Guay et al. (2000) developed the scale to measure situational motivation
12 towards an activity, such as that induced by an experimental manipulation. They also
13 provided evidence supporting the reliability and construct validity of scale scores. The
14 original questionnaire also included a subscale to measure amotivation. We did not include
15 this subscale as we felt the construct was not applicable when the instructor meets a new
16 exerciser.

17 **Motivational strategies.** Eight items from the Health Care Climate Questionnaire
18 (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1996) and eight items from the
19 Controlling Coach Behaviors Scale (CCBS; Bartholomew et al., 2010) were adapted to
20 measure autonomy supportive (e.g., "Provide him/her with choices and options") and
21 controlling ("Promise to reward him/her but only if he/she did well") motivational strategies
22 to instruct the exercisers, respectively. Previous research (e.g., Fortier, Sweet, O'Sullivan, &
23 Williams, 2007) has also adapted the HCCQ to measure perceived autonomy support in the
24 exercise domain, and found results that supported the reliability and validity of the scale
25 scores. The CCBS was originally developed to measure controlling behaviors in the sport

1 domain. Validation studies showed that scale scores were associated with those of other
2 constructs in ways that were in line with SDT predictions (e.g., Bartholomew, Ntoumanis,
3 Ryan, Bosch, & Thøgersen-Ntoumani, 2011). In our study, instructors were told that they
4 were not asked to rate which strategies were generally more appropriate, but should rate them
5 according to their perceived effectiveness for the target exerciser.

6 **Perceived efficacy.** Instructors rated their perceptions of the target exerciser's barrier
7 efficacy using eight items adapted from the Self-efficacy for Exercise Behaviors Scales
8 (Sallis, Pinski, Grossman, Patterson, & Nader, 1988). The scale has been used in previous
9 SDT-based studies (e.g., Teixeira et al., 2006) and its scores have been associated with those
10 of autonomous motivation to exercise. The original items were modified to measure the
11 barrier efficacy of the exerciser as perceived by the instructor (e.g., "Stick to his/her exercise
12 program after a long, tiring day at work").

13 **Effort to instruct.** Instructors were asked to list up to 30 factors (e.g., psychological,
14 physiological) which might help maximize the effectiveness of the exercise program for the
15 target exerciser. Instructors were allowed to use resources from the internet to complete the
16 task and were not given a time limit. The total number of factors (factors deemed irrelevant
17 were deleted, e.g., "train with a clear head") they identified was used as a non-self-report
18 measure of their investment of effort to instruct the exerciser.

19 **Data analyses**

20 Internal consistencies of scale scores were evaluated using Cronbach alphas. Pearson
21 correlations were calculated to examine associations between measured constructs. To
22 evaluate group differences between experimental manipulations, analysis of variance
23 (ANOVA) or multivariate analysis of variance (MANOVA) were used. Significant group
24 differences were followed up by simple effects tests (Tabachnick & Fidell, 2007).

Results

Preliminary Results

Descriptive statistics, Cronbach alphas, and Pearson correlation between constructs are presented in Tables 1 and 2.

Manipulation Check

Two repeated measures ANOVAs, with the three hypothetical individuals as the within-subject factor, were conducted as manipulation checks. We first compared the ratings for perceived autonomous motivation. The main effect was significant: $F(2, 326) = 389.44, p < .001$, **partial** $\eta^2 = .705$. Instructors rated the exerciser portrayed as autonomously (controlled) motivated to have the most (least) autonomous motivation. We then compared the ratings for perceived controlled motivation. The effect was again significant: $F(2, 326) = 413.12, p < .001$, **partial** $\eta^2 = .717$. Instructors rated the exerciser portrayed as autonomously (controlled) motivated to have the least (most) controlled motivation. These results suggest that the scenarios were successful in inducing different perceptions of the exercisers' motivation.

Instructor Motivation (H1)

A three-way (Condition \times Target exerciser's gender \times Instructor's gender) MANOVA¹ was conducted with instructors' intrinsic motivation, identified regulation, and external regulation as dependent variables. No interaction effects were found, but a multivariate main effect for condition was significant: $\lambda = .916, F(6, 300) = 2.24, p = .039$, **partial** $\eta^2 = .043$. The univariate statistics showed there was a main effect of condition on external regulation (Table 1). Simple effects contrasts indicated that instructors in the autonomous condition had lower values of external regulation compared to both the neutral and controlled conditions.

Instructional Strategies (H2)

1 A three-way MANOVA was conducted to examine differences on two dependent
2 variables, namely autonomy supportive and controlling instructional behaviors with regard to
3 the target exerciser. The interactions of condition by exerciser's gender ($\lambda = .889, F[4, 302]$
4 $= 4.58, p = .001, \text{partial } \eta^2 = .057$), as well as exerciser's gender by instructor's gender (λ
5 $= .947, F[2, 151] = 4.25, p = .016, \text{partial } \eta^2 = .053$) were significant. Univariate tests
6 indicated a significant condition by exerciser's gender interaction effect on autonomy
7 supportive behaviors: $F(2, 152) = 8.80, p < .001, \text{partial } \eta^2 = .104$. The interaction effect
8 between the exerciser's and instructor's genders was also significant for autonomy supportive
9 behaviors ($F[1, 152] = 7.42, p = .007, \text{partial } \eta^2 = .047$).

10 Tests of simple effects were conducted to explore the significant interactions.
11 Regarding the interaction between condition and exerciser's gender (Figure 1), the instructors
12 rated autonomy supportive behaviors as *less* effective when instructing a male exerciser who
13 was controlled as opposed to autonomous or neutral in his motivation. In contrast, the
14 instructors rated autonomy supportive behaviors as *more* effective when instructing a female
15 exerciser who was controlled as opposed to autonomous or neutral in her motivation. The
16 difference in autonomy support scores between male and female exercisers with controlled
17 motivation was significant.

18 As for the interaction between the genders of the exerciser and the instructor (Figure
19 2), it was found that female instructors rated autonomy support as more effective for female
20 than male exercisers. Ratings of autonomy support effectiveness for female exercisers were
21 higher when given by female as opposed to male instructors.

22 **Barrier efficacy (H3)**

23 A three-way (Condition \times Exerciser's gender \times Instructor's gender) ANOVA was
24 conducted on instructors' perception of the target exerciser's ability to overcome barriers to
25 exercise. The assumption of equal variances was violated, thus a more stringent test ($p < .01$)

1 was used to infer significance. There were no significant interaction effects, but a main effect
2 for condition was found (see Table 1). Simple effects contrasts showed that instructors felt
3 the autonomously motivated exerciser was more likely to overcome barriers compared to the
4 exerciser portrayed with controlled or neutral motivation.

5 **Effort (H4)**

6 A three-way ANOVA was conducted on the effort invested by the instructors to
7 identify factors that could maximize the effectiveness of the exercise program for the target
8 exerciser. The more stringent test ($p < .01$) was utilized as the equality of variance assumption
9 was violated. A significant condition by exerciser's gender interaction was found: $F(2, 152)$
10 $= 14.09$, $p < .001$, **partial** $\eta^2 = .156$ (Figure 3). When the target exerciser was perceived as
11 neutral or controlled in their motivation, levels of effort were higher when the exerciser was
12 female than male. In contrast, when the exerciser was perceived to be autonomously
13 motivated, levels of effort were higher when the exerciser was male than female.

14 **Discussion**

15 This study builds on and extends work on motivation contagion by showing how
16 gender and instructors' perceptions of obese individuals' motivation could affect the
17 instructors' motivation, efficacy beliefs and instructional style. Our first hypothesis (H1),
18 which stated that instructors' own motivation might be influenced by their perceptions of the
19 motivation of the exerciser, was partially supported: Instructors showed lower (higher) levels
20 of external regulation when instructing an exerciser with autonomous (controlled) motivation.
21 Further, we also hypothesized that instructors would rate the autonomous exerciser as being
22 more capable of overcoming barriers to exercise (H3). Our findings supported this hypothesis,
23 as instructors felt that the autonomously (as opposed to controlled) motivated exerciser was
24 more likely to overcome barriers to exerciser.

25 Hypotheses 2 and 4 were only partly supported. We predicted instructors in the

1 autonomous condition to rate autonomy supportive behaviors as more effective for
2 motivating the exerciser (H2), and to invest more effort in identifying factors to maximize the
3 effectiveness of a training program for that individual (H4). Our results indicated that
4 perceptions of exerciser autonomous motivation did result in high ratings of instructor
5 autonomy support and effort investment. However, this was the case only in reference to a
6 male exerciser. For a female exerciser an unexpected (opposite) effect was found with
7 perceptions of controlled motivation resulting in higher ratings of autonomy support and
8 effort investment. Further, higher ratings of autonomy support to the female exerciser were
9 more likely to be provided by female than male instructors.

10 Our findings make important conceptual and practical additions to the motivation
11 contagion literature by showing that obese individuals who are perceived to be motivated by
12 external pressures or contingencies are likely to create expectations that result in their
13 instructors (a) feeling not optimally motivated to instruct them, (b) being doubtful about the
14 exercisers' ability to maintain their exercise behavior, (c) rating, paradoxically, as less
15 effective for these individuals motivational strategies that are considered in the SDT literature
16 to be universally adaptive and effective, and (d) investing less effort to identify factors that
17 are important for the success of a tailored exercise program. Instructor training programs
18 need to emphasize the interplay between instructor and exerciser motivation and highlight the
19 importance of supporting overweight exercisers who appear less self-determined to exercise.
20 The observed motivation contagion effects demonstrate that observers are sensitive to
21 interpersonal cues that carry information regarding actors' motivation. Such cues have the
22 potential to affect the observers' own motivation and interpersonal style toward the actors,
23 possibly via the formation of expectations with regard to quality of task engagement and
24 automatic goal inferences (e.g., Hassin, Aarts, & Ferguson, 2005; Wild & Enzle, 2002). The
25 extent to which such expectations and inferences persist over time and how they can be

1 modified is currently unknown.

2 Importantly for the motivation contagion literature, some of our findings did not apply
3 to the hypothetical female exerciser for whom an opposite pattern was observed. Specifically,
4 instructors rated autonomy supportive behaviors to be more effective, and invested more
5 effort for female exercisers who were portrayed to be motivated for extrinsic reasons. Barbee
6 et al. (1993) suggested that gender role expectations make it easier for females than males to
7 activate social support when needed. This might partly explain why instructors in our study
8 were more willing to provide autonomy support and invest effort to the female exerciser who
9 was perceived to be struggling with motivation issues.

10 Our study has a number of strengths. First, previous research has shown that obese
11 individuals are sometimes treated unfairly or disrespectfully by health professionals
12 (Anderson & Wadden, 2004). Our findings showed that such biases might partly operate via
13 motivation-related mechanisms (motivation contagion). Whether motivation contagion
14 effects might be partly responsible for why instructors, or more generally health professionals,
15 are unsuccessful in helping obese individuals adhere to physical activities is an interesting
16 research question that could be pursued by future research. Also, to our knowledge, this was
17 the first study that looked at motivation contagion effects with reference to exercise
18 instruction. Further, we explored moderation effects of gender which have been overlooked
19 in the motivation contagion literature. In addition, we measured outcome variables that have
20 not been previously assessed in that literature, including a non-self-reported outcome to
21 reduce common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

22 In contrast, the use of hypothetical instructor-exerciser scenarios is a limitation of this
23 work. Future studies could be conducted in actual exercise settings utilizing attendance
24 records and observer ratings of instructor interpersonal styles. The use of a shortened form of
25 the BREQ to measure perceived motivation of exercisers and the fact that we did not measure

1 all types of regulations within the SDT-continuum with respect to both the perceived
2 motivation of the hypothetical exerciser and in terms of motivation to instruct (for reasons
3 given earlier) could be perceived by some as potential limitations of this study. Researchers
4 should consider incorporating measures for these omitted constructs (i.e., integrated
5 regulation for exercise and introjected regulation for instructing) in future research. In our
6 study, we looked at the potential moderating effect of gender. Other demographic variables
7 (e.g., age, ethnicity) should also be examined as moderators in future studies. Further, only a
8 small proportion of participants had actual experiences as fitness instructors. As many
9 exercise science students work as gym instructors when they graduate, it was important to
10 examine how they might respond to the hypothetical situations we created as it is very likely
11 that they will encounter similar situations in their future employment. From a conceptual
12 perspective, the strength of motivation contagion might differ as a function of the experience
13 of the observer in a given context (perhaps it will be stronger with novices, as the majority of
14 participants were in our study). This has to be empirically tested. Replicating our work with
15 experienced certified instructors would be a means of addressing this interesting research
16 question. In view of the significant public health implications of obesity, our results indicate
17 the need for more research on the bidirectional nature of the obese exerciser motivation-
18 instructor motivation relationship.

19

1 Footnote

2 ¹Given that past research (e.g., Chambliss, Finley, & Blair, 2004) has shown a strong
3 implicit antifat bias among fitness instructors and exercise science students, we assessed
4 participants' beliefs regarding weight loss (Scotland & Zuroff, 1990) and biases against
5 overweight individuals (Crandall, 1994). Results of two 2-way (Condition × Exerciser's
6 gender) ANOVAs showed no between group differences in these ratings. Thus, these
7 variables were not used as covariates in the analyses.

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18

- 1 *Figure 1.* Gender differences in instructors' perceived effectiveness of provision of autonomy
- 2 support across different conditions.
- 3

- 1 *Figure 2.* Gender differences in instructors' perceived effectiveness of autonomy support to
- 2 male and female exercisers.
- 3

- 1 *Figure 3.* Gender differences in instructors' effort investment across different conditions.

1 Table 1

2 *Descriptive Statistics and Cronbach alphas of Measured Variables*

	Possible Range	Neutral		Autonomous		Controlled		α	$F(2,152)$	Partial η^2
		Condition		Condition		Condition				
		M	SD	M	SD	M	SD			
1. Intrinsic motivation to instruct	1 – 7	5.19	1.04	5.52	0.73	5.29	1.04	.79	1.70	.022
2. Identified regulation to instruct	1 – 7	5.25	0.94	5.08	0.81	5.22	0.90	.60	0.64	.008
3. External regulation to instruct	1 – 7	4.68	0.91	4.18	0.94	4.61	1.14	.71	3.67*	.046
4. Autonomy supportive behaviors	1 – 7	5.94	0.57	5.93	0.48	5.97	0.57	.59	0.94	.001
5. Controlling behaviors	1 – 7	3.10	0.93	2.79	0.83	3.06	0.88	.73	1.67	.021
6. Perceived barrier efficacy of target exerciser	1 – 5	2.41	0.69	3.18	0.42	2.34	0.70	.85	23.98**	.240
7. Investment of effort to instruct	1 – 30	8.04	4.75	11.11	4.54	11.91	4.79	–	10.17**	.118

3 *Note.* * $p < .05$; ** $p < .001$.

1 Table 2

2 *Pearson Correlations Between Variables*

	1	2	3	4	5	6	7	8
1. Perceived autonomous motivation of target exerciser								
2. Perceived controlled motivation of target exerciser	-.55*							
3. Intrinsic motivation to instruct	.18*	-.10						
4. Identified regulation to instruct	-.02	.07	.58*					
5. External regulation to instruct	-.13	.16*	-.29*	.09				
6. Autonomy supportive behaviors	-.02	.04	.26*	.26*	-.07			
7. Controlling behaviors	-.02	.13	-.13	-.07	.02	-.28*		
8. Perceived barrier efficacy of target exerciser	.53*	-.25*	.21*	.01	-.19*	-.08	-.12	
9. Investment of effort to instruct	-.01	.12	.20*	.10	-.18*	.26*	-.05	.14

3 *Note.* * $p < .05$.