Motivation for exercise participation: The self-determination theory perspective

MSc in Exercise Psychology

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Table 10.1

Associations of Determinants With Physical Activity in Adults

Determinant	Associations with activity in supervised program	Associations with overall physical activity
Demographic and biological factors		
Age	0 0	– –
Blue-collar occupation	– –	–
Education	+	+ +
Sex (male)		+ +
Genetic influences		+ +
High risk for heart disease	0	–
Income/socioeconomic status		+ +
Overweight/obesity	0	0 0
Race/ethnicity (nonwhite)		– –
Psychological factors		
Attitudes	0	0
Perceived barriers to exercise	–	– –
Enjoyment of exercise	+	+ +
Outcome expectancy values (expect benefits)	+	+ +
Health locus of control	0	0
Intention to exercise	+	+ +
Knowledge of health and exercise	0	0 0
Perceived lack of time	– –	–
Mood disturbance	–	– –
Normative beliefs	0	0 0
Self-efficacy	+ +	+ +
Self-motivation	+ +	+ +
Self-schemata for exercise (self-image as an exerciser)		+ +
Behavioral attributes and skills		
Activity history during childhood/youth		+
Activity history during adulthood	+ +	+ +
Dietary habits (quality)	0 0	+ +
Past exercise program	+ +	+
Processes of change		+
School sports	0	0 0

Determinants of physical activity participation

(Buckworth & Dishman, 2002)

Table 10.1

(continued)

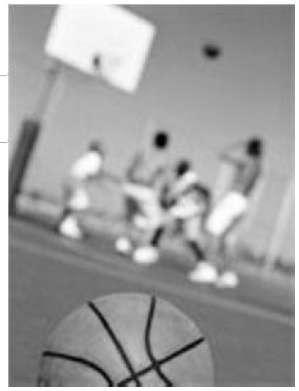
Determinant	Associations with activity in supervised program	Associations with overall physical activity
Behavioral attributes and skills (continued)		
Skills for coping with barriers		+
Smoking	– –	0 0
Decision balance sheet	+	+
Social and cultural factors		
Class size	–	
Exercise models		0
Group cohesion	+	
Past family influences		0
Physician influence		+ +
Social support from friends/peers	+	+ +
Social support from spouse/family	+ +	+ +
Social support from staff/instructor	+	
Physical environment factors		
Access to facilities: actual	+	+
Climate/season	–	– –
Access to facilities: perceived	+	0 0
Cost of program	0	0
Disruptions in routine	–	
Home equipment	+	0
Physical activity characteristics		
Intensity	– –	–
Perceived exertion	– –	– –

Determinants of physical activity participation

(Buckworth & Dishman, 2002)

Multiple motives for exercise participation

- **Health**
- **Weight control**
- **Appearance improvement**
- **Physical health status**
- **Sense of challenge**
- **Well-being/vitality**

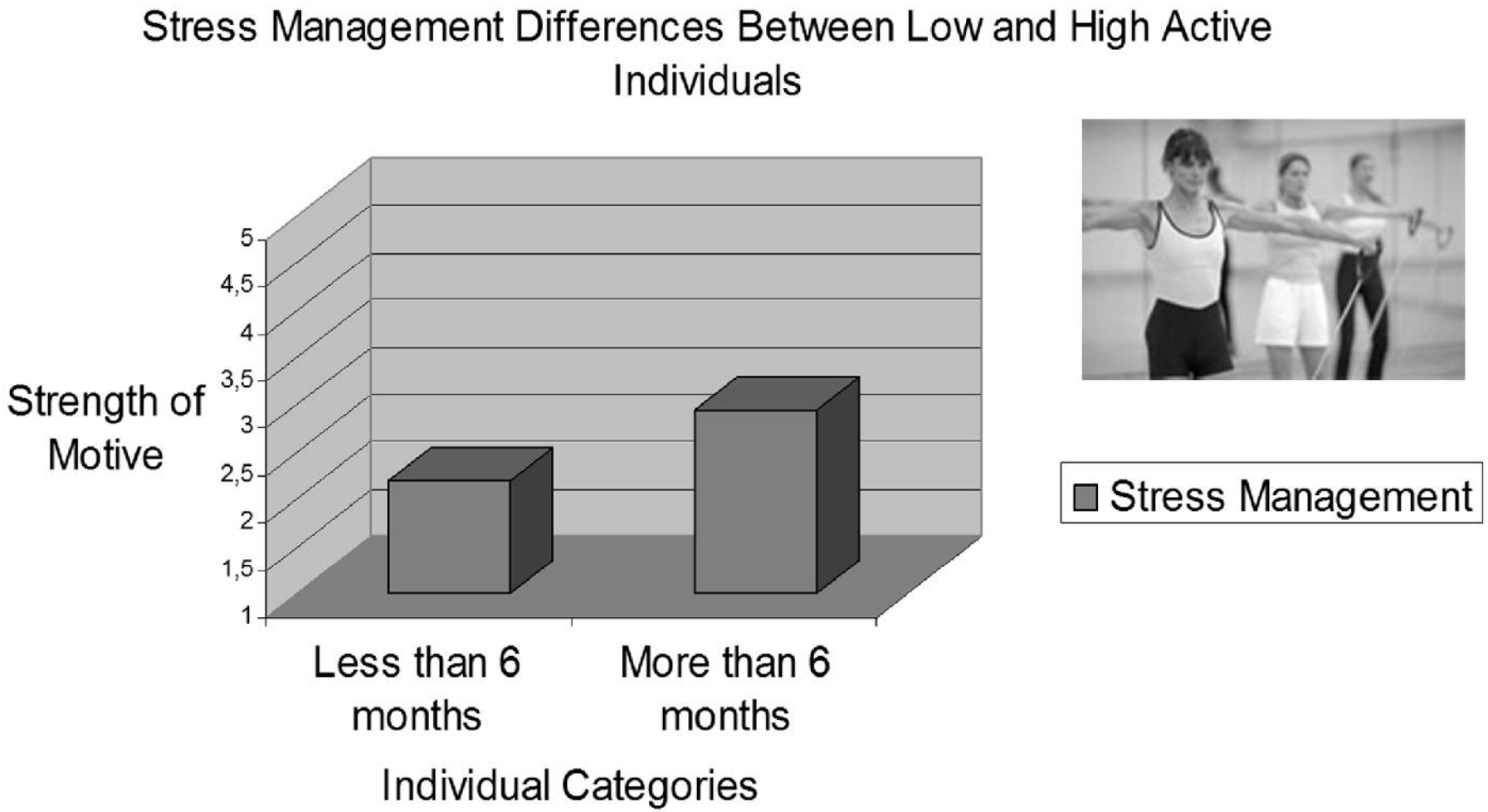


(Wankel, 1980)

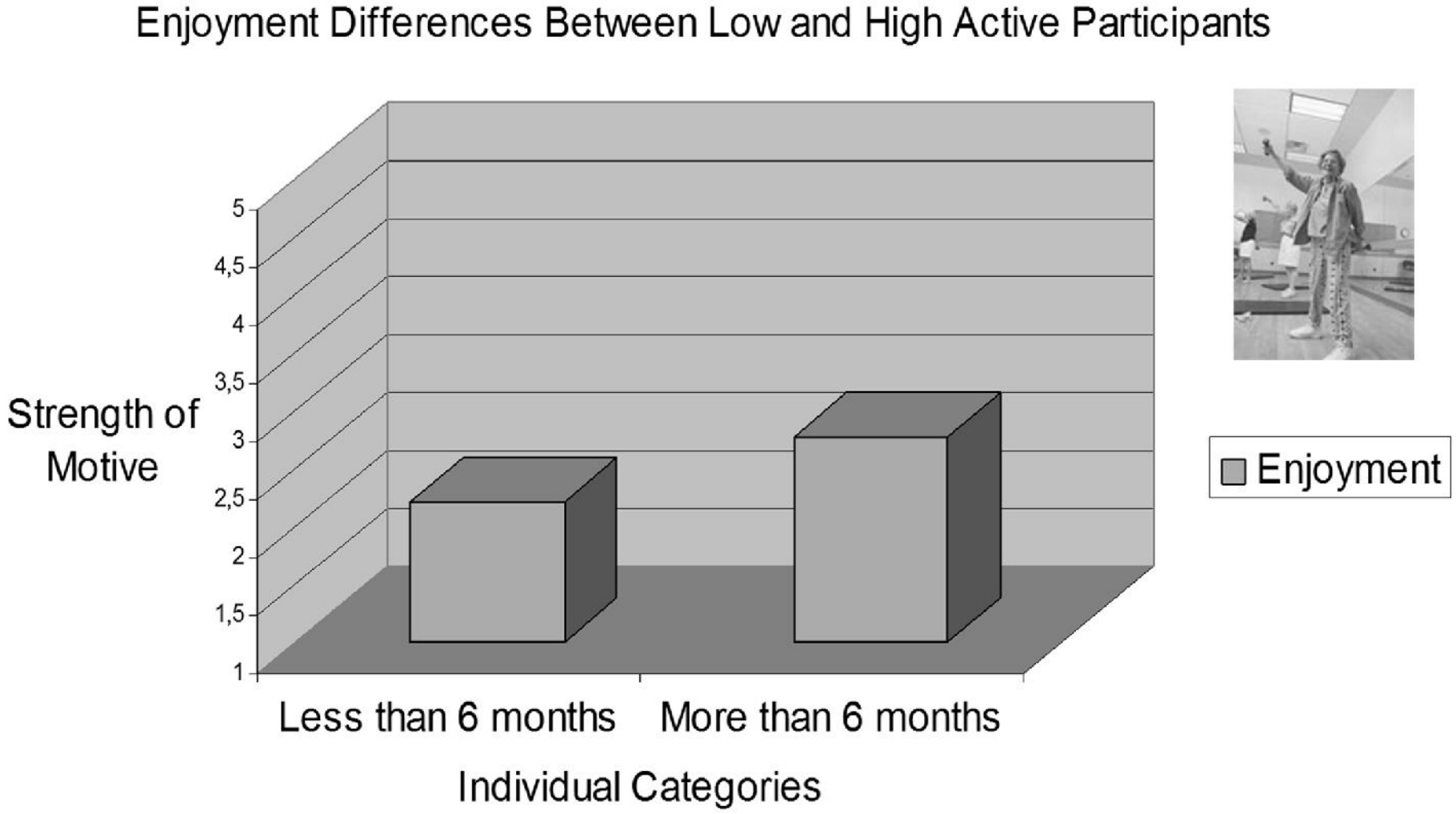
Measurement of exercise motives: The Revised Exercise Motivations Inventory (EMI-2) *(Markland & Ingledew, 1997)*

- Stress management
- Revitalization
- Enjoyment
- Challenge
- Social recognition
- Affiliation
- Competition
- Health pressures
- Ill-health avoidance
- Positive health
- Weight management
- Appearance
- Strength

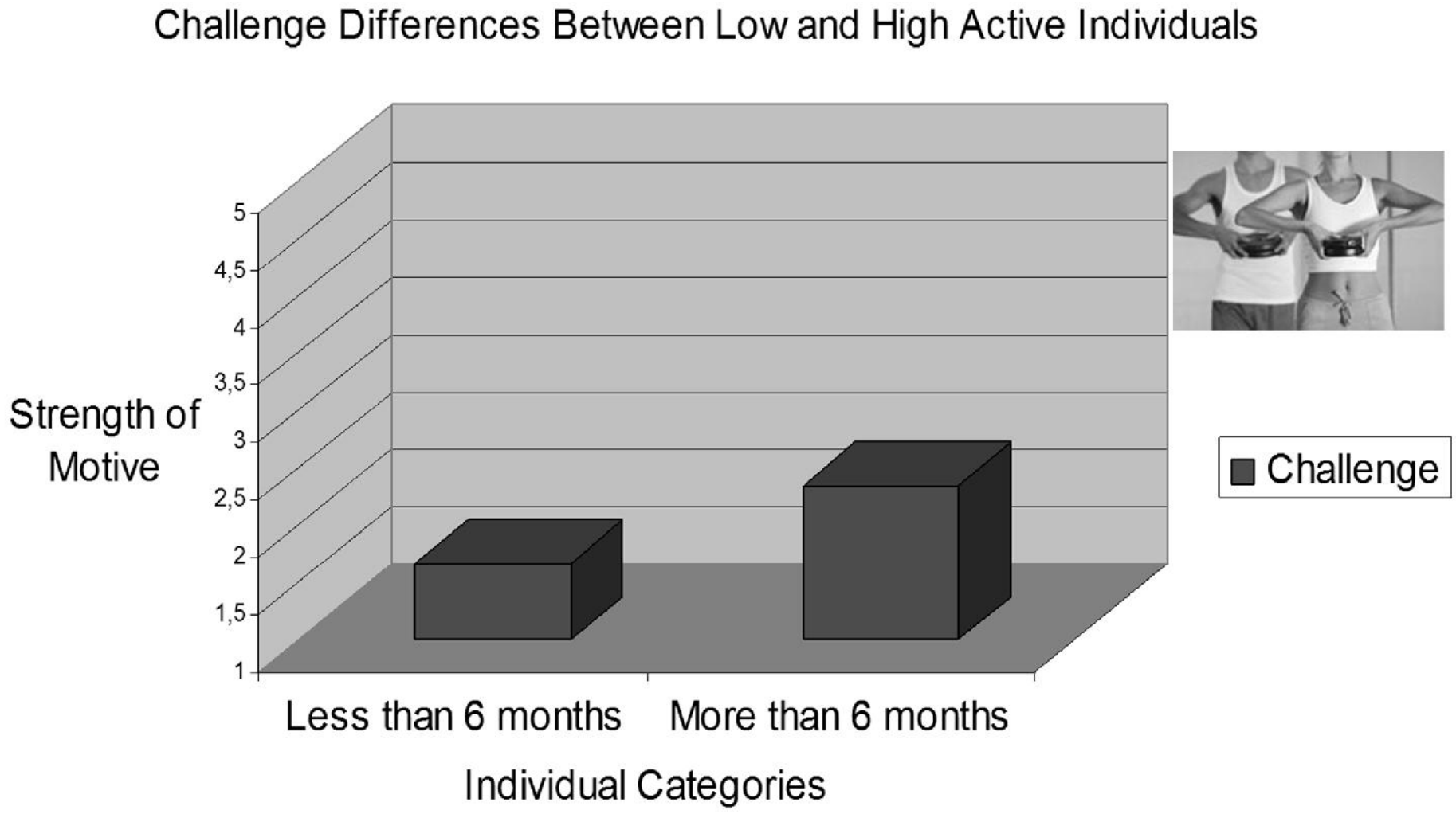
Exercise motive differences among low and high active individuals: Stress management *(Maltby & Day, 2001)*



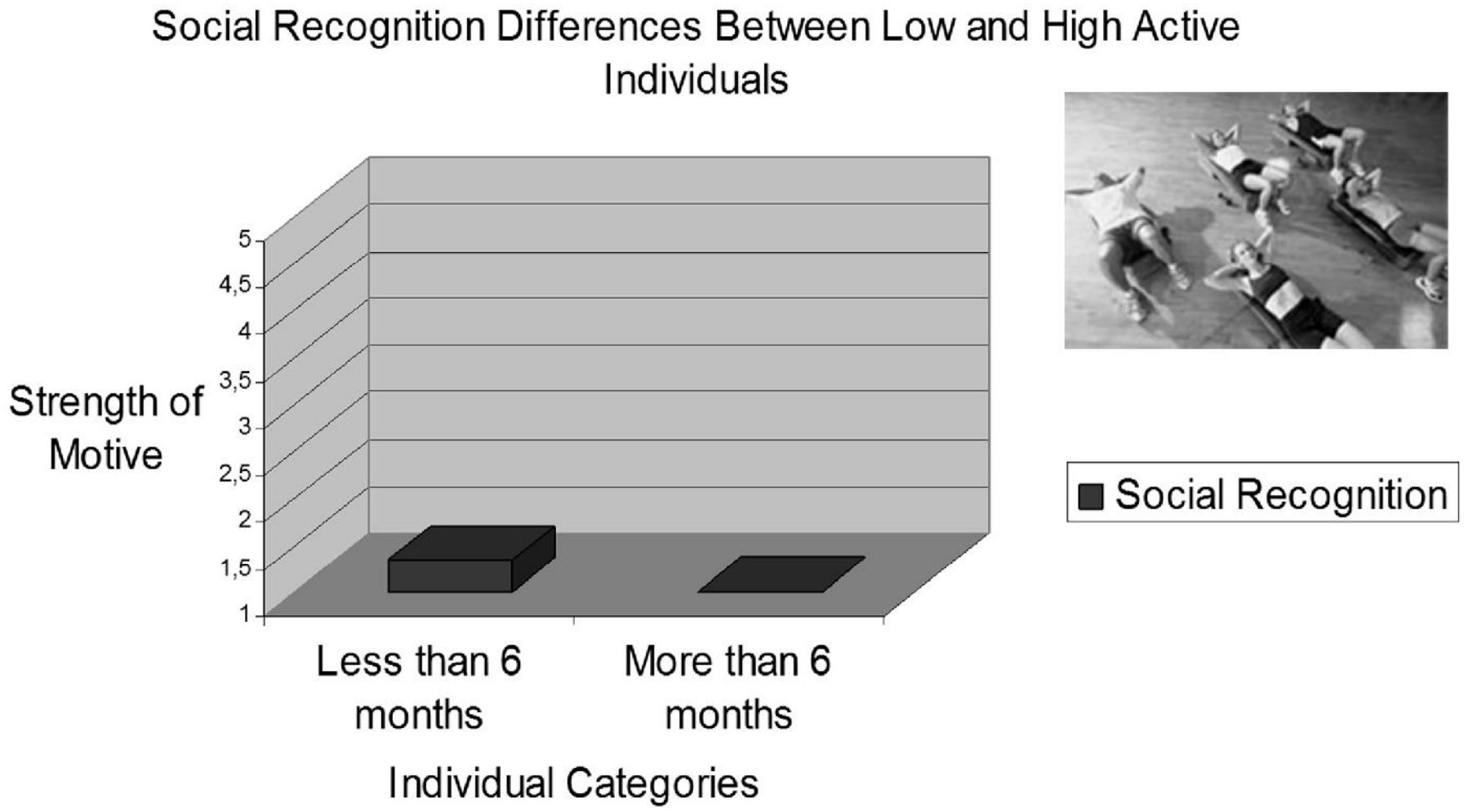
Exercise motive differences among low and high active individuals: Enjoyment *(Maltby & Day, 2001)*



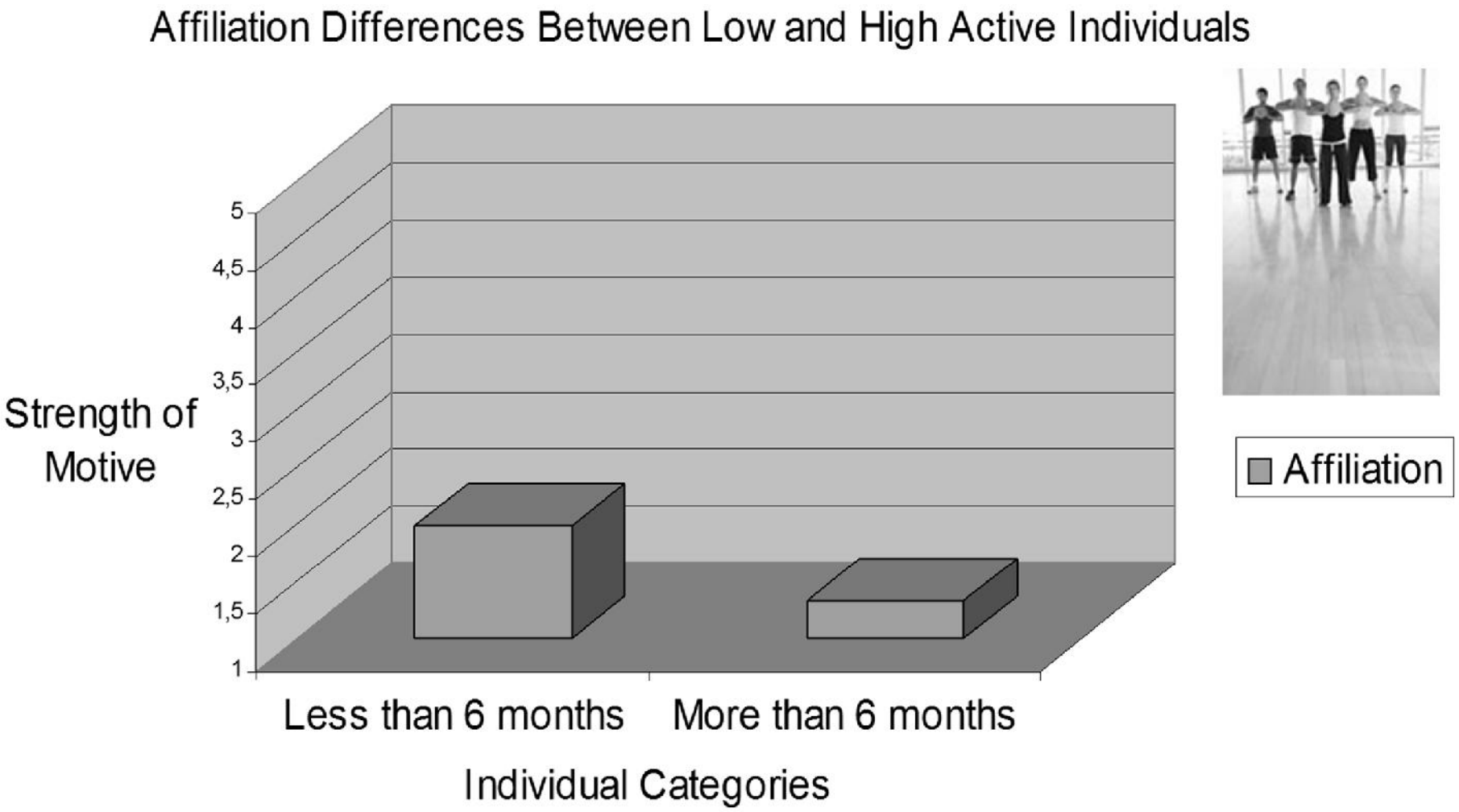
Exercise motive differences among low and high active individuals: Challenge *(Maltby & Day, 2001)*



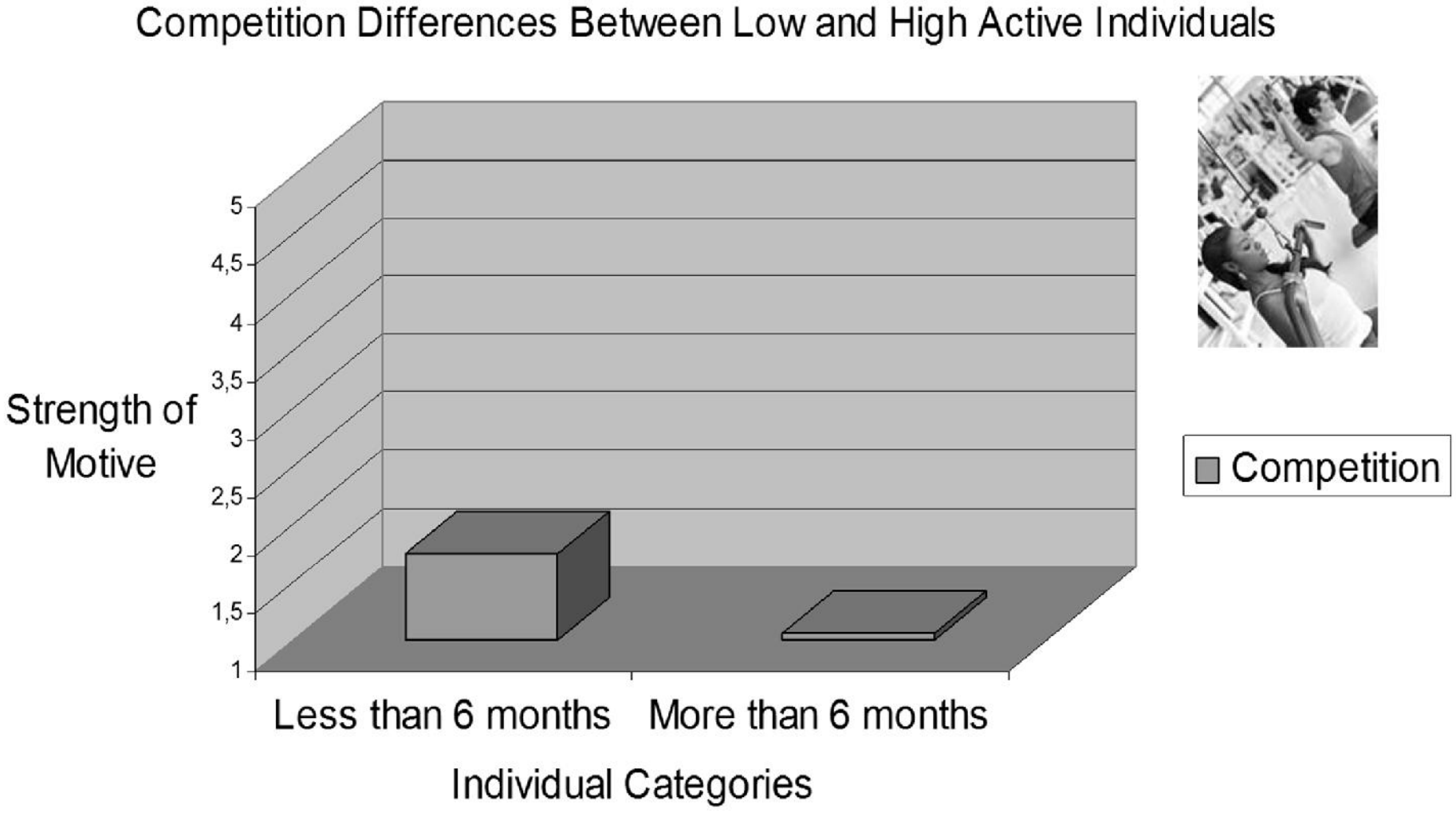
Exercise motive differences among low and high active individuals: Social recognition *(Maltby & Day, 2001)*



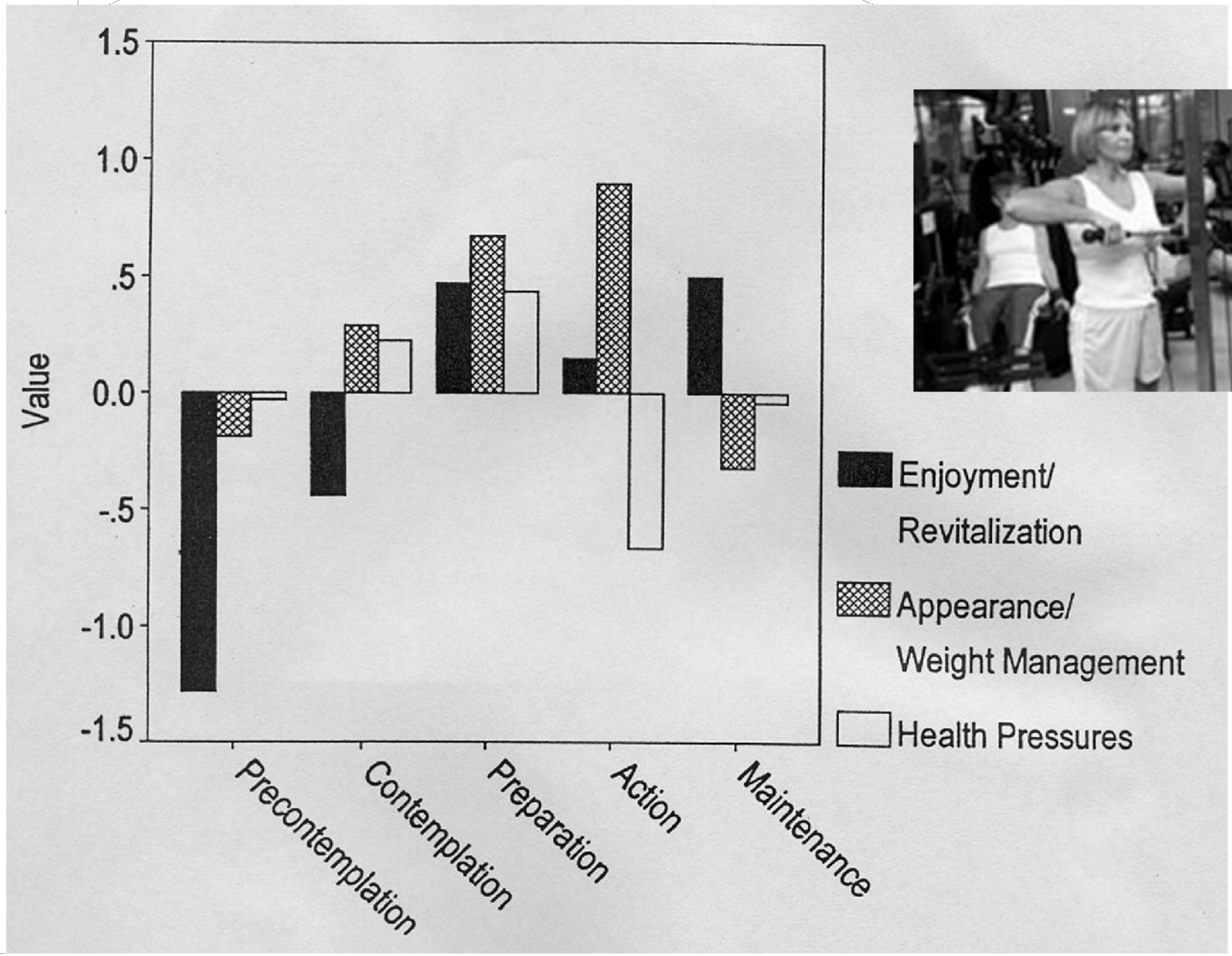
Exercise motive differences among low and high active individuals: Affiliation *(Maltby & Day, 2001)*



Exercise motive differences among low and high active individuals: Competition *(Maltby & Day, 2001)*

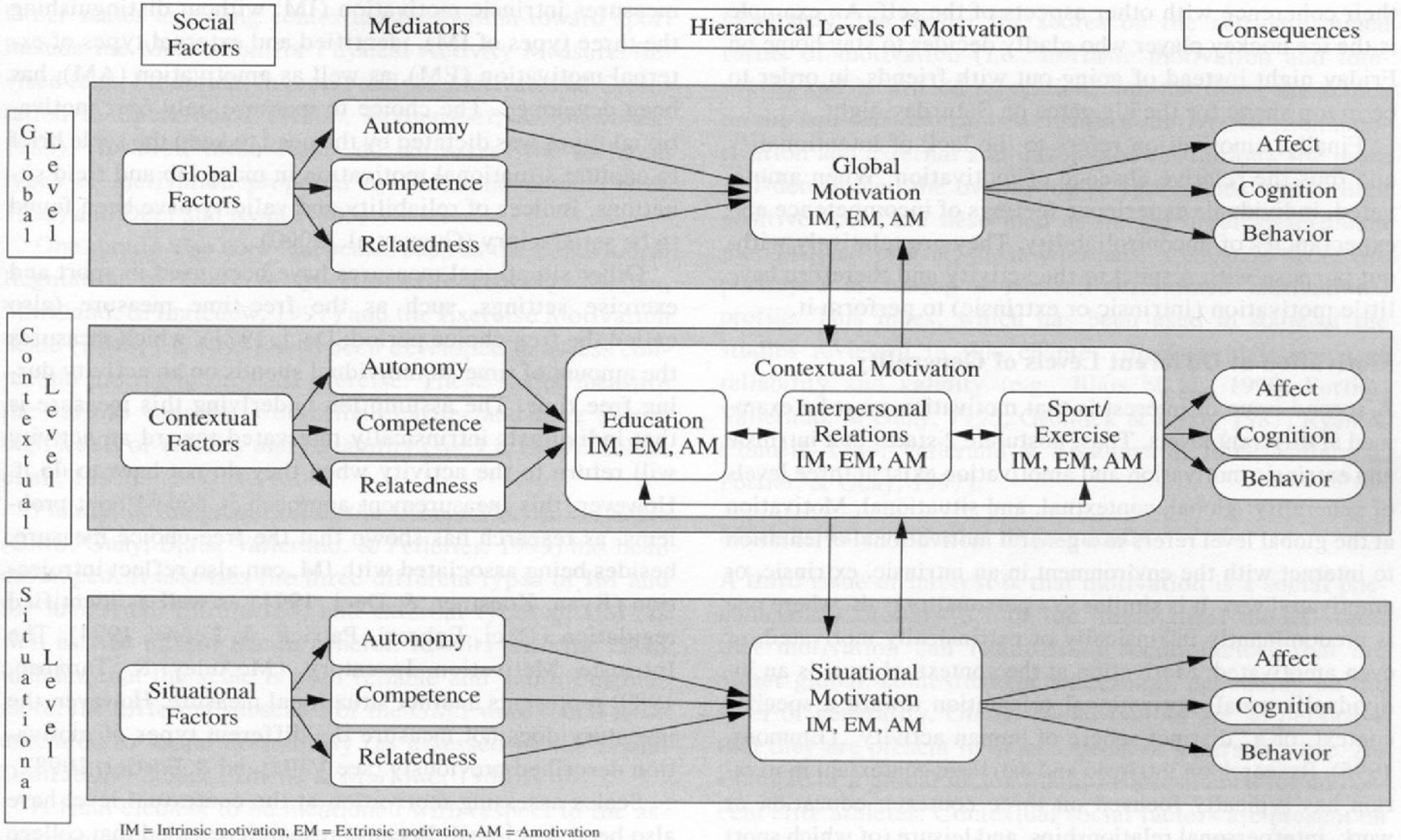


Relationships between exercise motives and stages of change (*Ingledew, Markland, & Medley, 1998)*




Self-Determination Theory
AN APPROACH TO HUMAN MOTIVATION & PERSONALITY

The Hierarchical Model of Intrinsic and Extrinsic Motivation (Vallerand, 1997, 2001)



Cognitive consequences

- Appearance and technique exercise imagery INJ, IDEN
  - *Wilson, Rodgers, Hall, & Gammage (2003)*
    Canadian female university exercise participants

- Barriers self-efficacy -EXT, INJ, IDEN, IM
  - *Thogersen-Ntoumani & Ntoumanis (2006)*
    British exercise participants

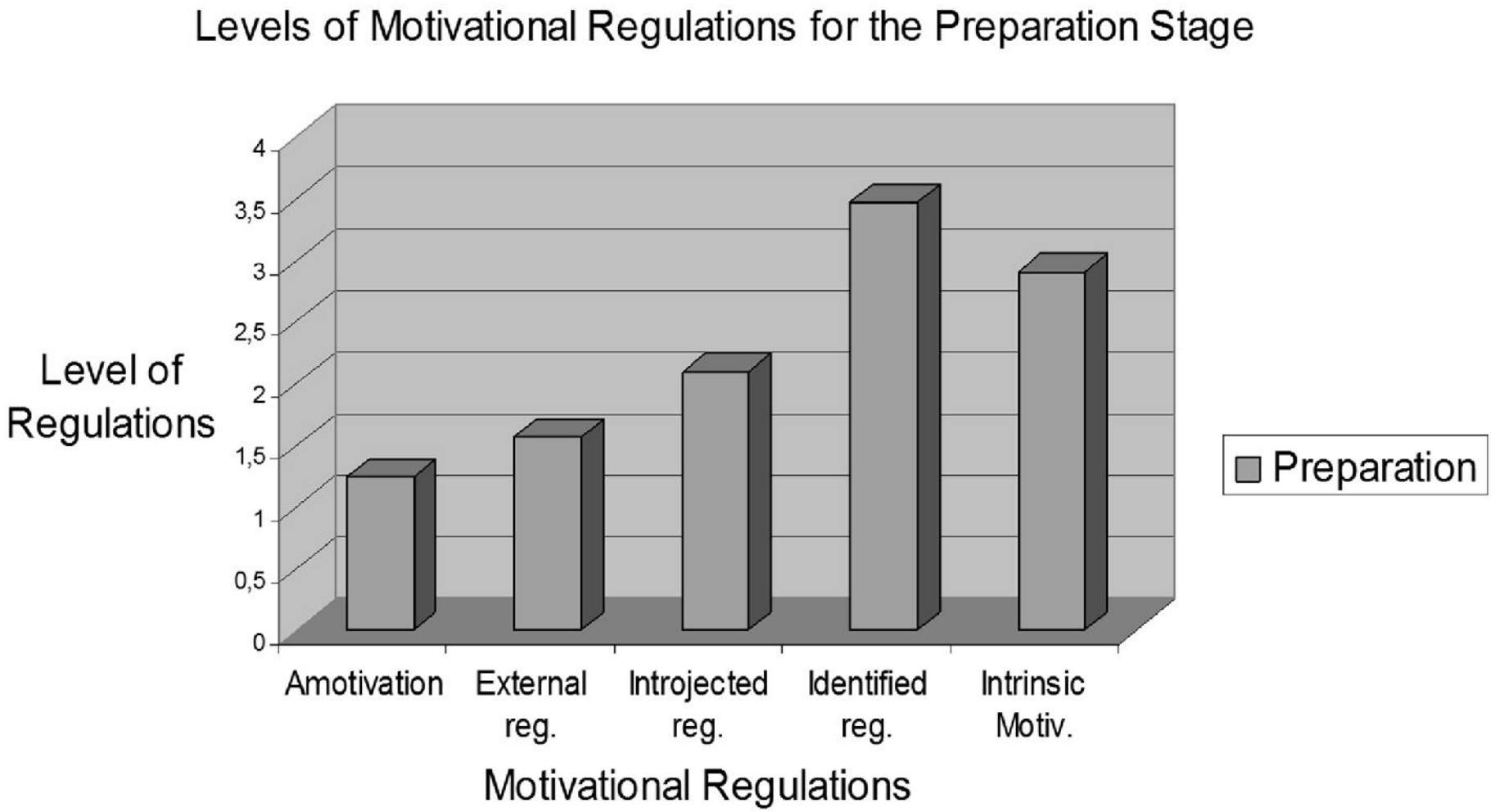
- Attitude, IM
- Perceived behavioral control, IM
  - *Hagger, Chatzisarantis, & Biddle (2002)*
    British adolescents

Behavioral consequences

- Stages of change
  - *Mullan & Markland (1997)*
    British blue collar, white collar workers and home caregivers
  - *Landry & Solmon (2004)*
    African-American women
  - *Matsumoto & Takenaka (2004)*
    Japanese exercise participants
  - *Rose, Parfitt, & Williams (2005)*
    Secondary school teachers, exercise participants and undergraduate students
  - *Thogersen-Ntoumani & Ntoumanis (2006)*
    British exercise participants

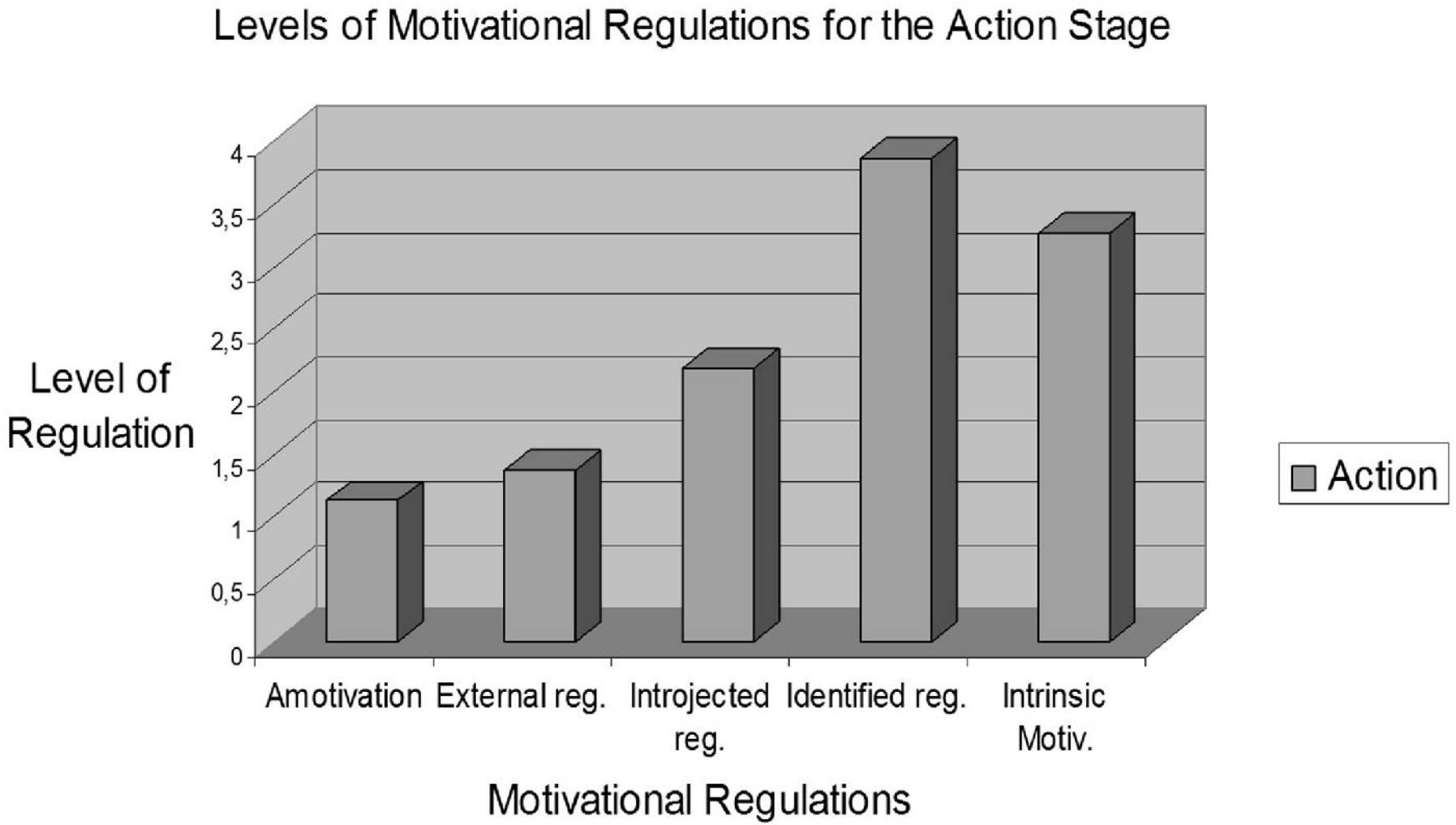
Motivational regulations and stages of change

(Thogersen & Ntoumanis, 2006)



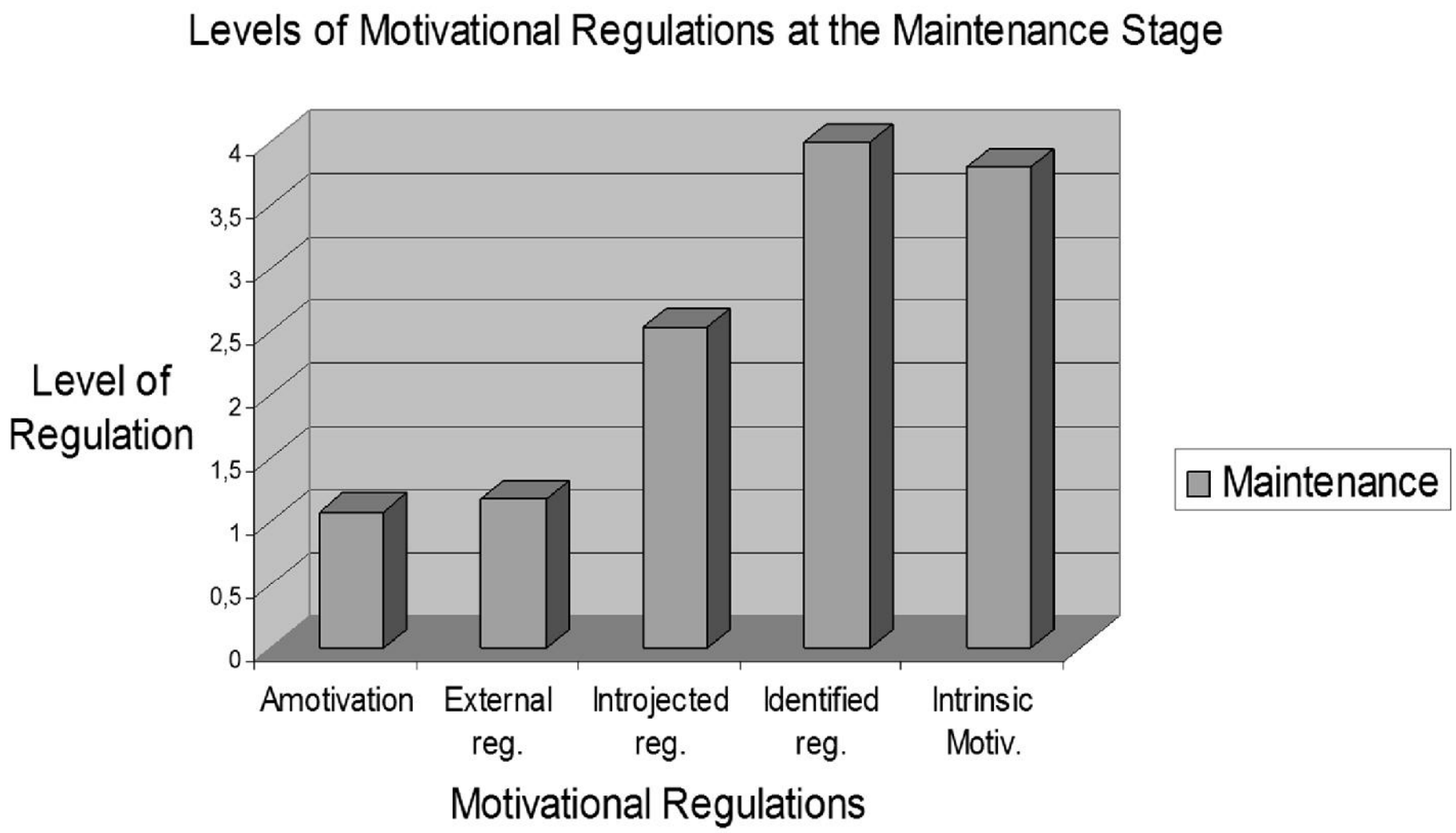
Motivational regulations and stages of change

(Thogersen & Ntoumanis, 2006)

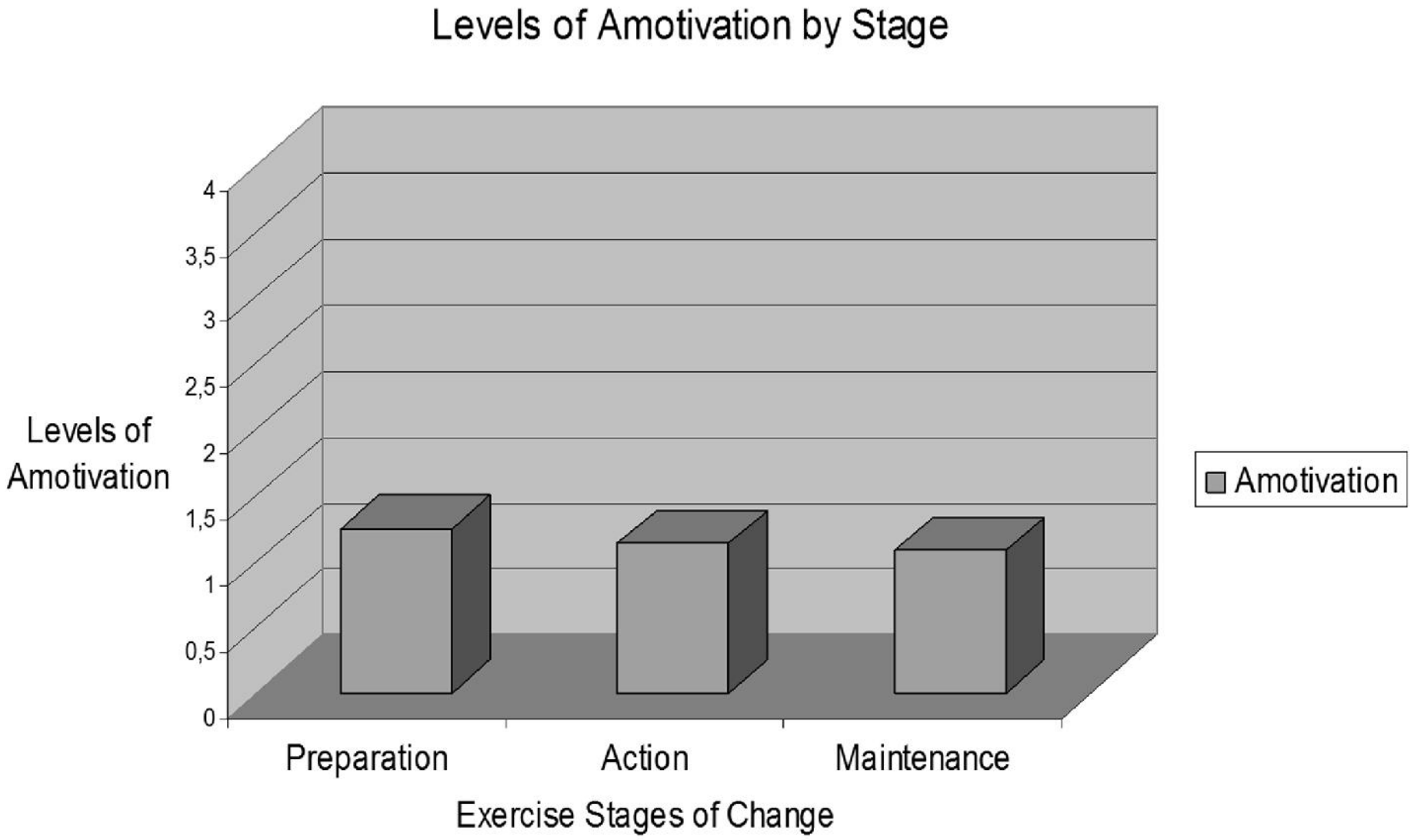


Motivational regulations and stages of change

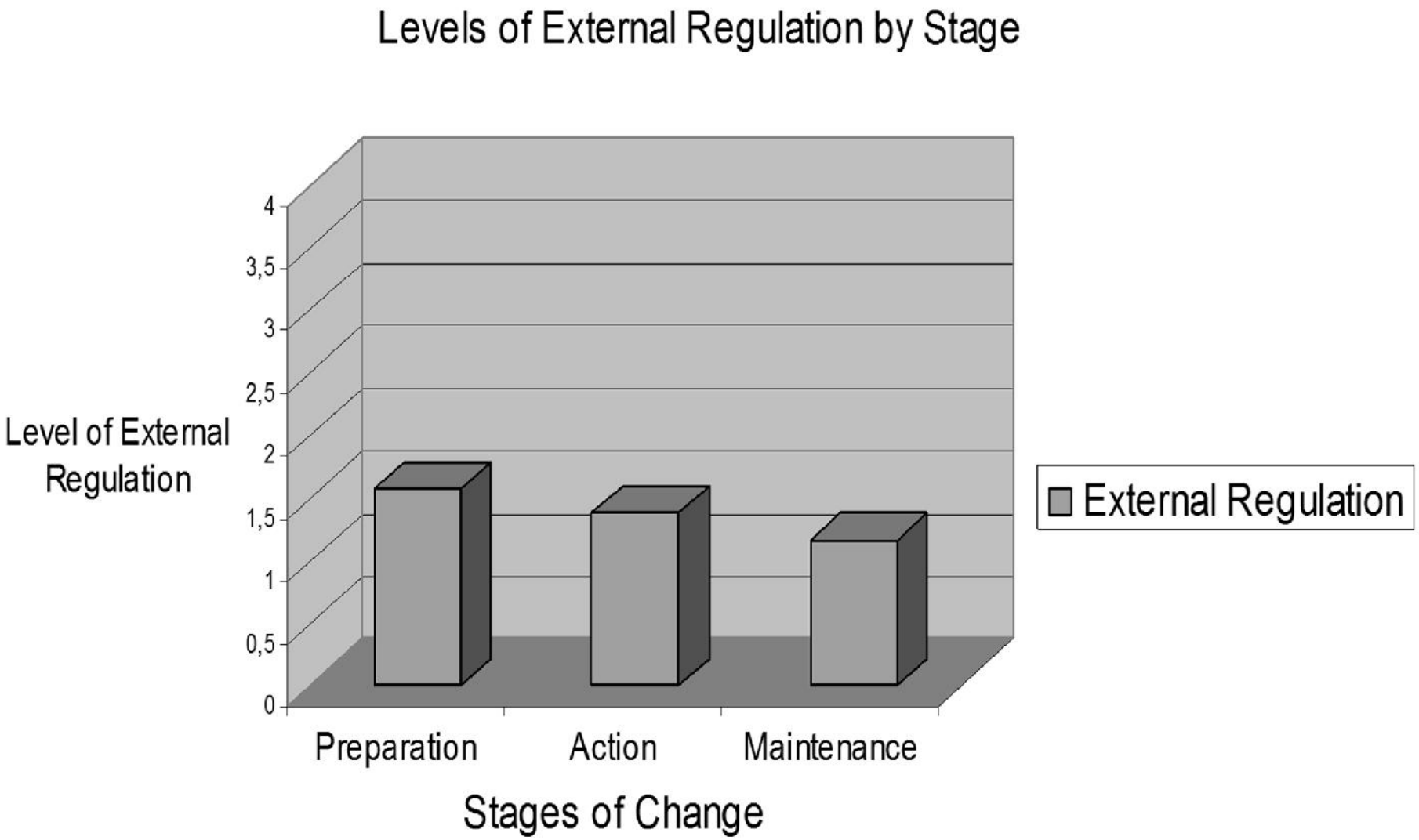
(Thogersen & Ntoumanis, 2006)



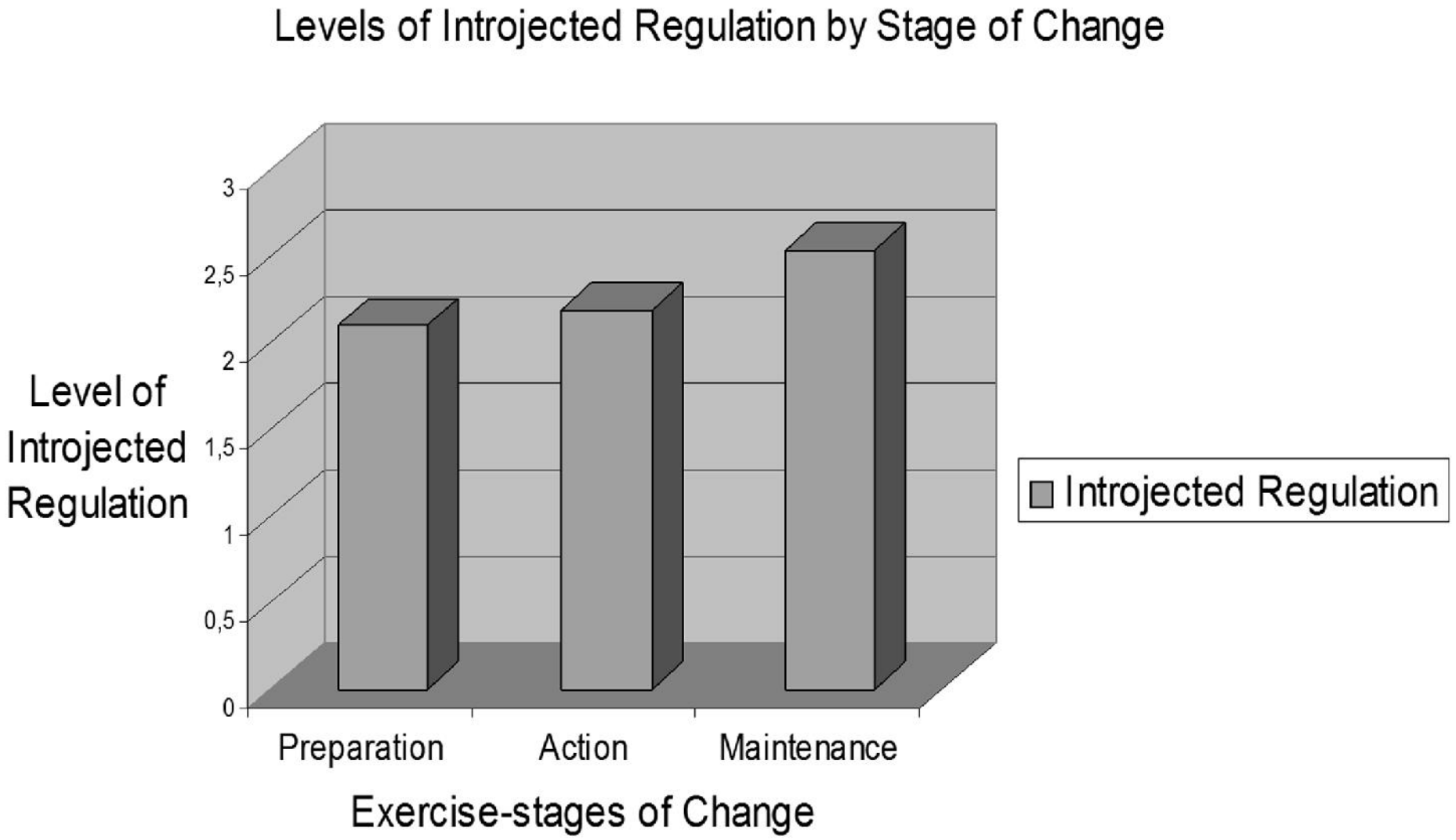
Amotivation by Stage



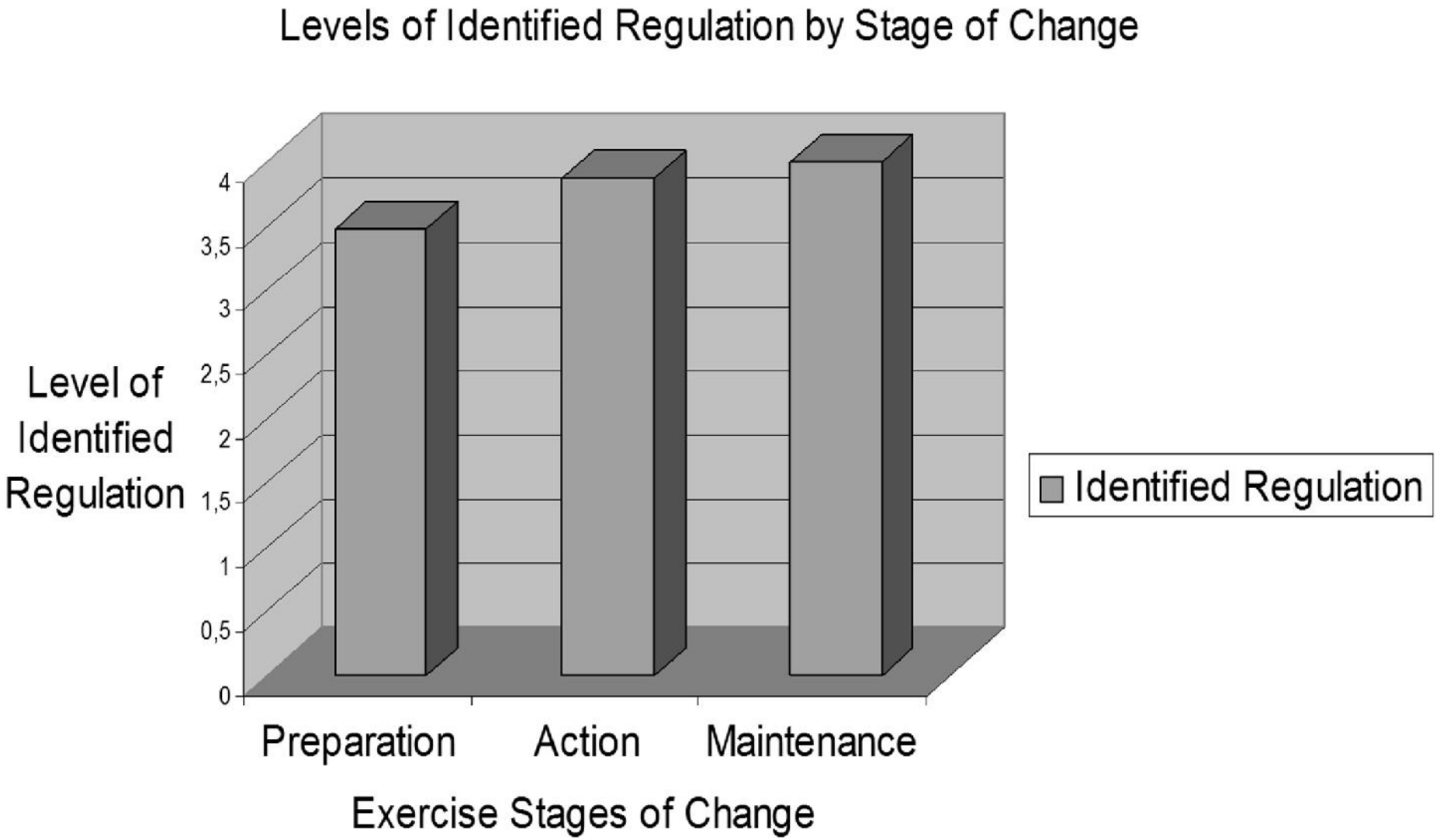
External Regulation by Stage



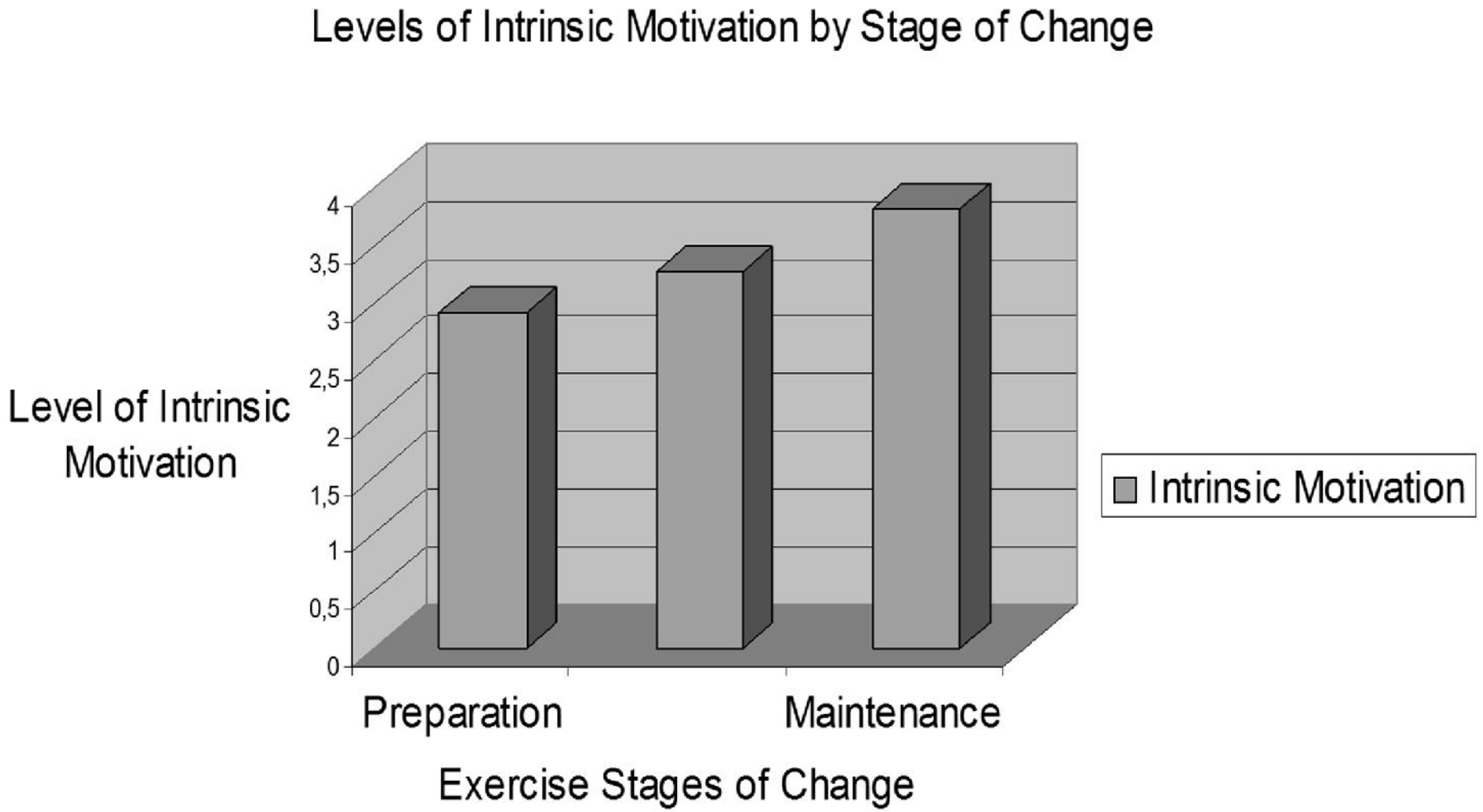
Introjected Regulation by Stage



Identified Regulation by Stage



Intrinsic Motivation by Stage



Behavioral consequences

- Relapse from exercise EXT, - IDEN
- Intention to exercise - AMOT, INJ, IDEN

- *Thogersen-Ntoumani & Ntoumanis (2006)* British exercise participants
- *Chatzisarantis, Biddle, & Meek (1997)* British children

- Self-reported exercise behavior
- Physical fitness

- *Wilson, Rodgers, Blanchard, & Gessell (2003)*
- *Wilson, Rodgers, & Fraser (2002)*

- Strenuous exercise behavior - EXT, INJ, IDEN

- *Edmunds, Ntoumanis, & Duda (2006)* British exercise participants

Medical, demographic, and psychosocial correlates of exercise in colorectal cancer survivors: An application of self-determination theory *(Peddle el al., 2008)*

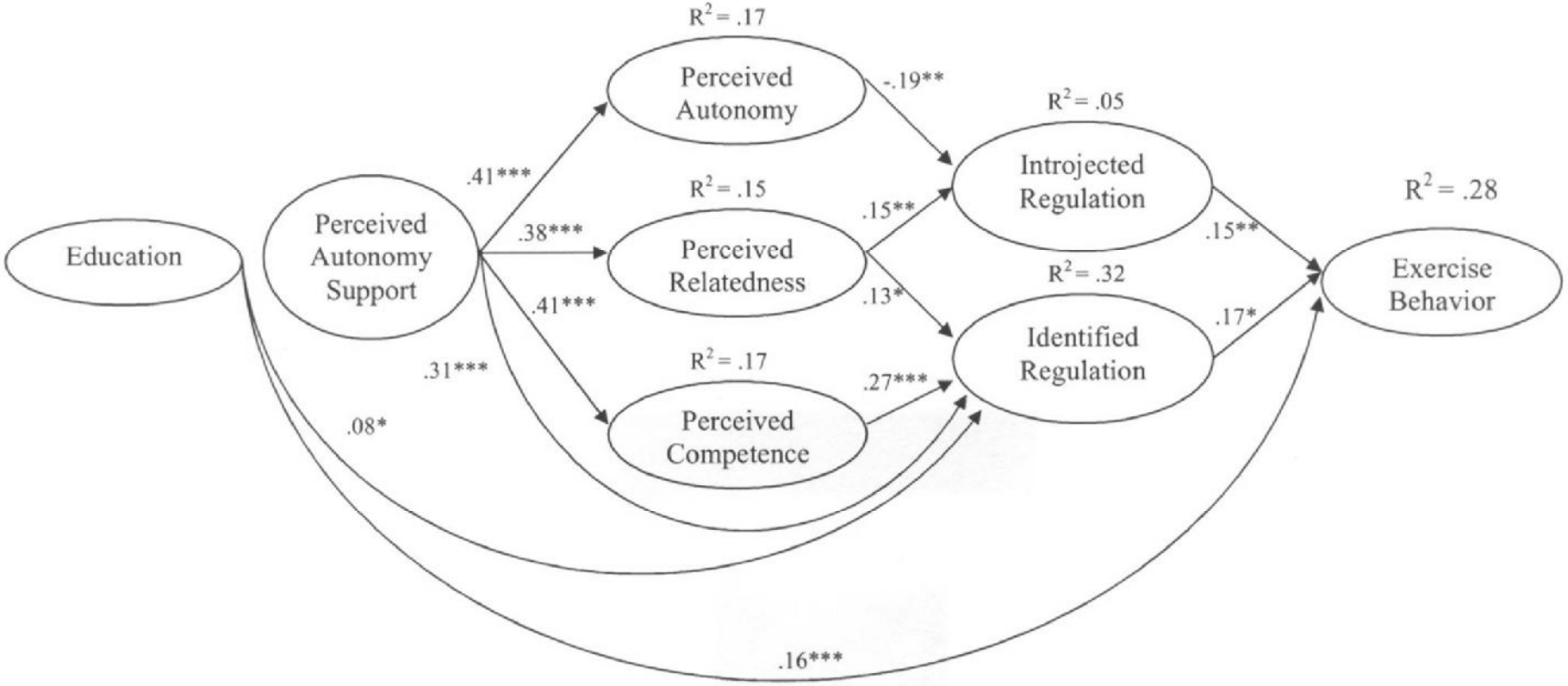


Fig. 2 Path analysis of self-determination theory and exercise behavior. *$p<0.05$; **$p<0.01$; ***$p<0.001$. Please note that relationships with p values ≥ 0.05 not illustrated here

Self-determination, goal process cognition, and participation in physical exercise

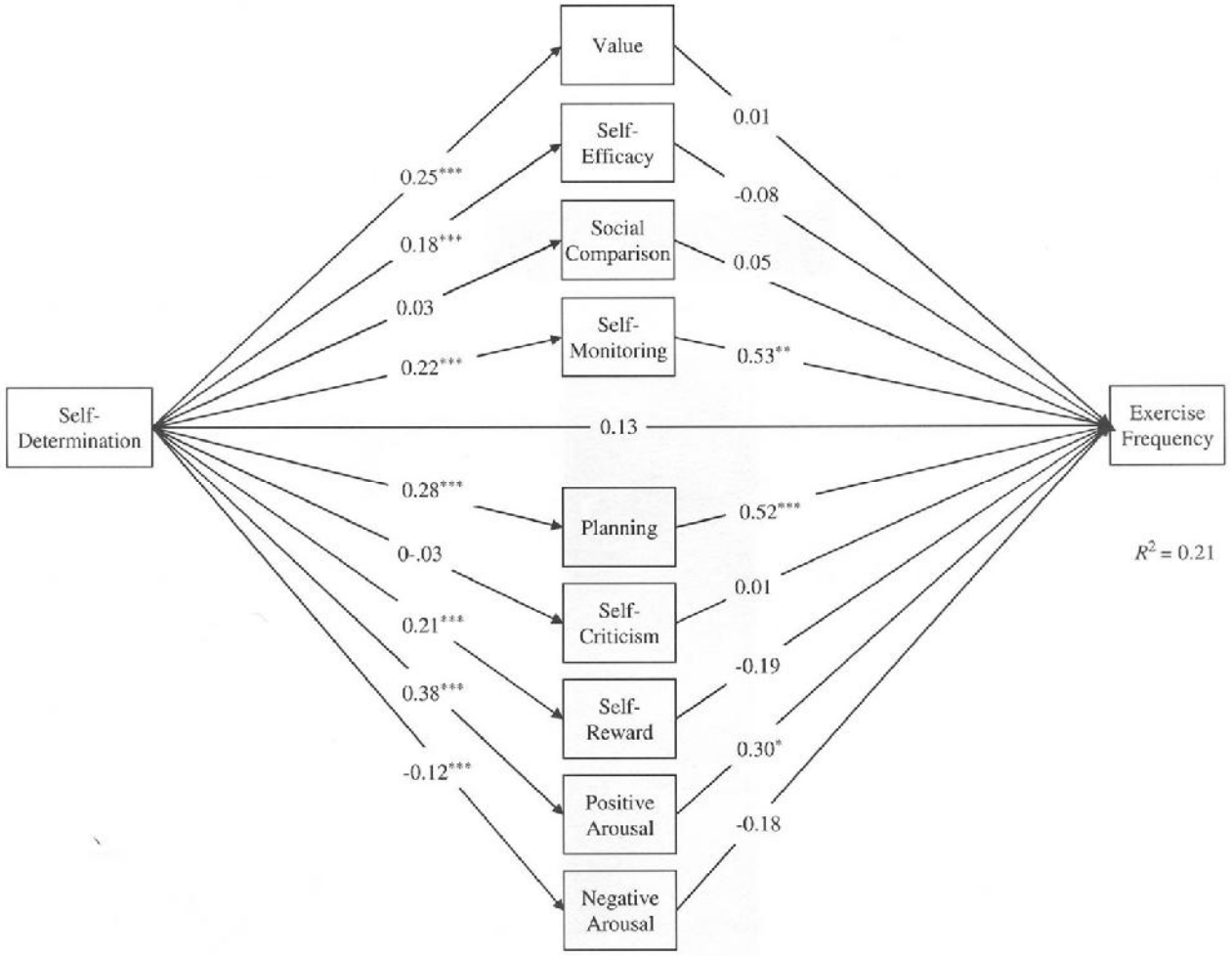
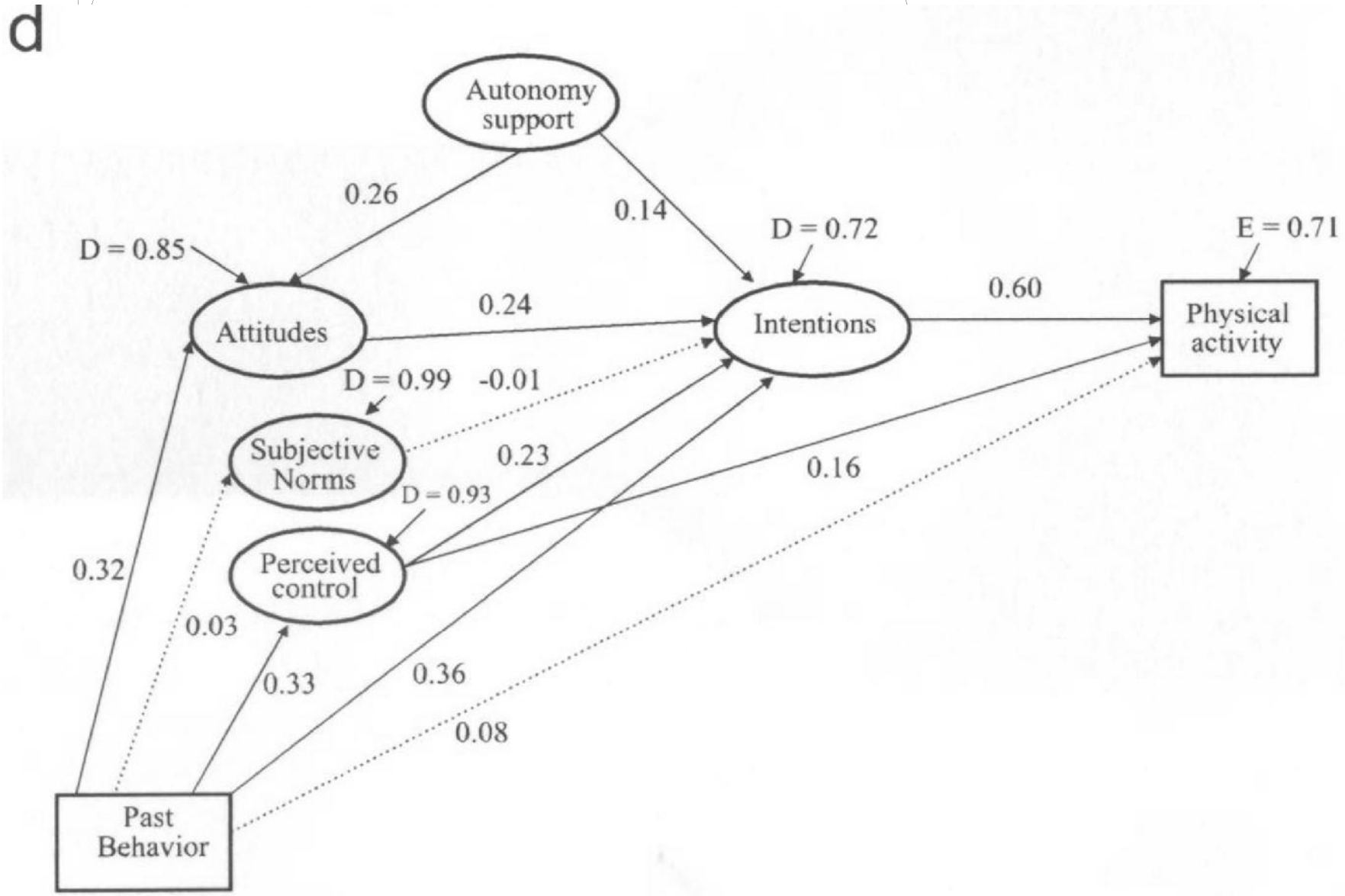


Fig. 1. Coefficients representing effects of Self-Determination Index on goal process mediators and strenuous exercise. *$P < .05$, **$P < .01$, ***$P < .001$.

Using the construct of perceived autonomy support to understand social influence within the theory of planned behavior *(Chatzisarantis et al., 2008)*



Psychological well-being

- Physical self-worth
  IDEN, IM
- *Georgiadis, Biddle, & Chatzisarantis (2001)*
  Greek exercise participants

- Physical self-worth IM
- Social physique anxiety INJ, IM
- *Thogersen-Ntoumani & Ntoumanis (2006)*
  British exercise participants

- Physical self-esteem
  IDEN, IM
- *Wilson & Rodgers (2002)*
  Canadian female exercise participants

- Exercise enjoyment
  - EXT, IDEN, IM
- *Vlachopoulos & Karageorghis (2005)*
  British exercise participants

Interaction of exercise perceived competence with self-determination and relationship to exercise enjoyment *(Markland, 1999)*

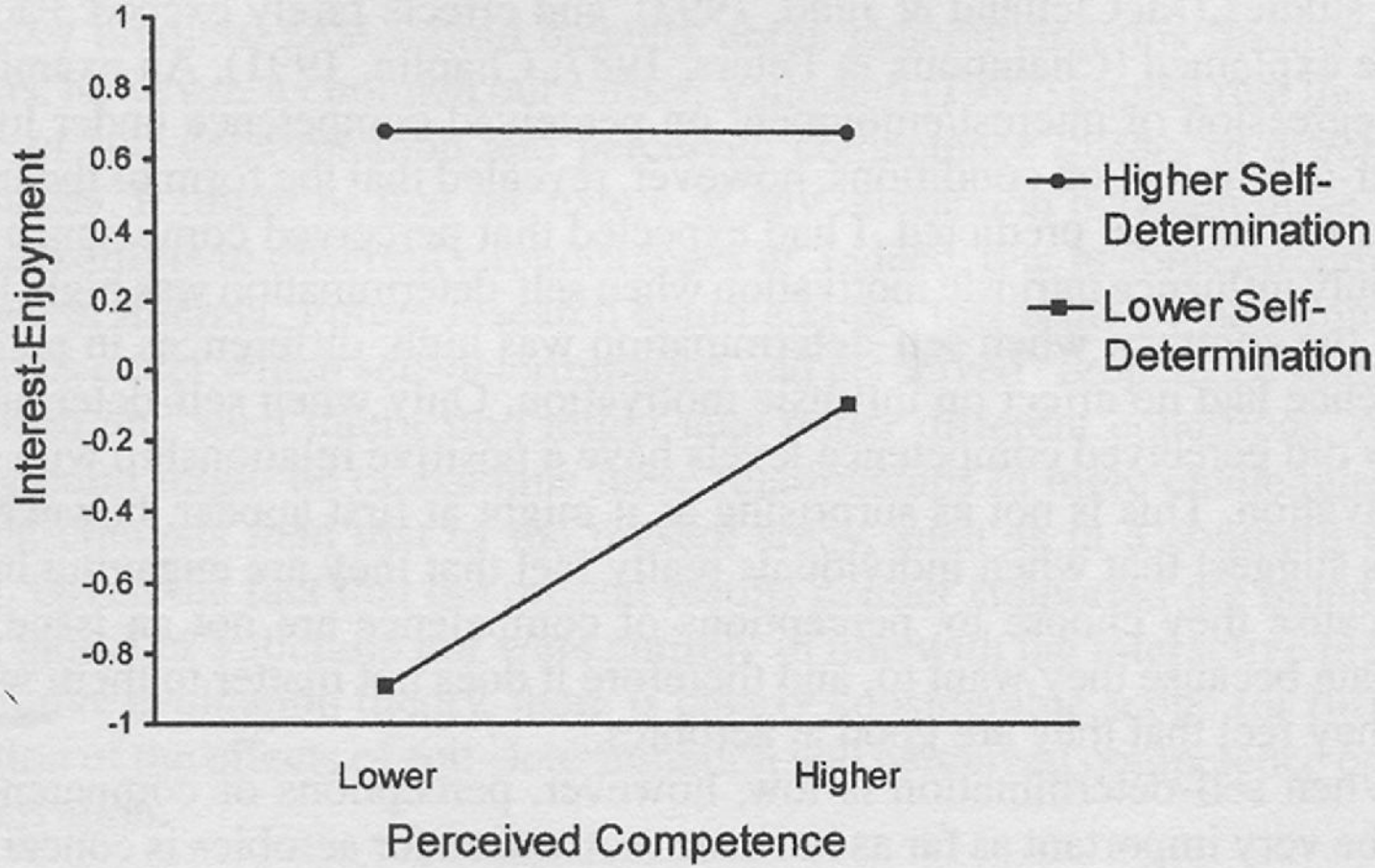
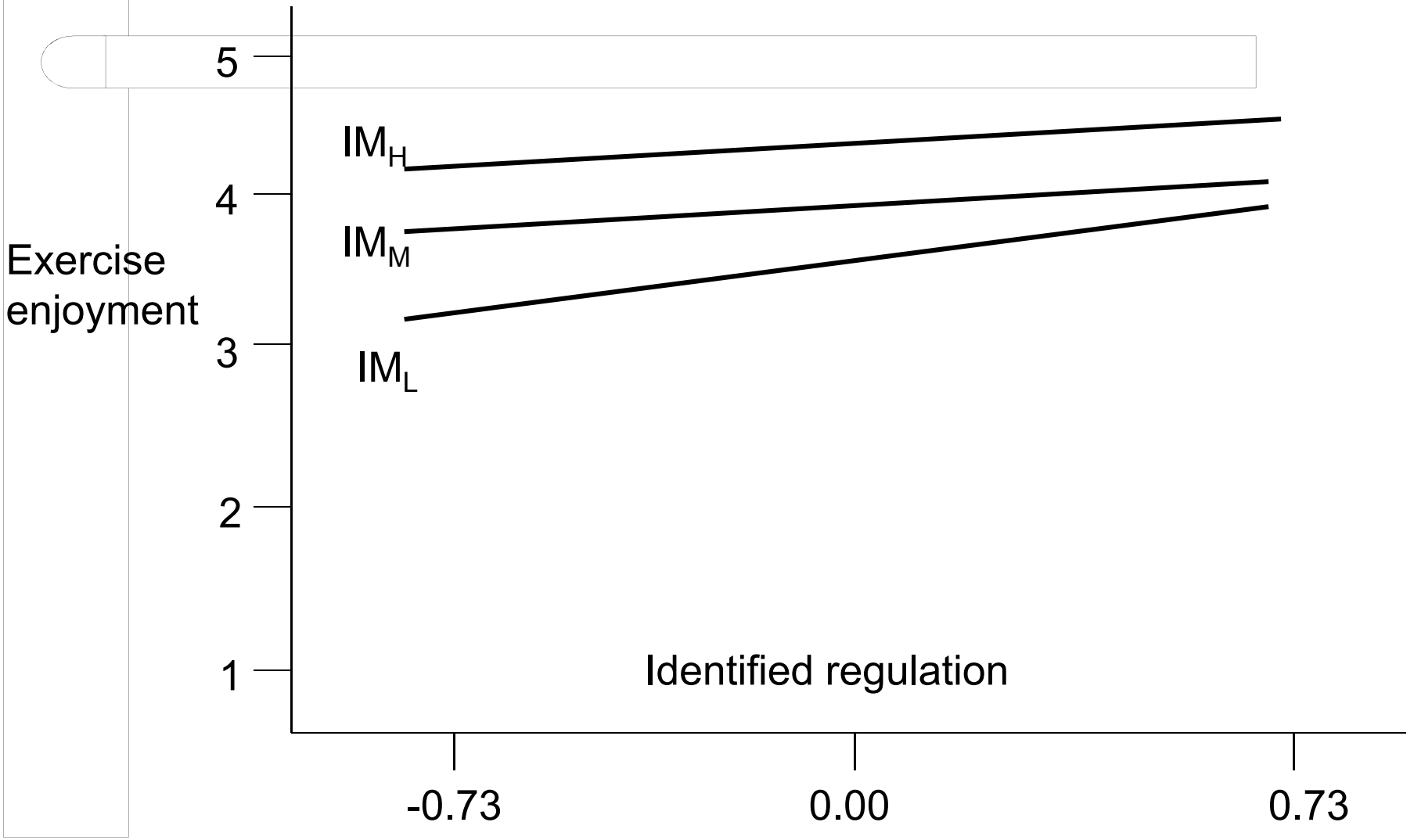


Figure 1 — Regression slopes for interest/enjoyment on perceived competence under conditions of higher and lower self-determination.

Interaction of identified regulation with intrinsic motivation on exercise enjoyment *(Vlachopoulos & Karageorghis, 2005)*



Social determinants

- Perceived autonomy support – friends -----> IDEN, IM
  - *Wilson & Rodgers (2004)*
    Canadian female university students and staff
- Perceived autonomy support – exercise class leader -----> A, C, R
  - *Edmunds, Ntoumanis, & Duda (in press)*
    British participants from fitness, community and retail settings
- Perceived autonomy support – PE teacher -----> leisure-time physical activity intentions
  - *Hagger, Chatzisarantis, Culverhouse, & Biddle (2003)*
    High school students

Social determinants

- Perceived autonomy support – significant others -----> autonomous intention
  - *Brickell, Chatzisarantis, Pretty (2006)*
    Canadian university college students

- Choice of exercise mode -----> increased positive well-being
  decreased fatigue, psychological distress, RPE
  - *Parfitt & Gledhill (2004)*
    British low active adults

- Task orientation -----> IDEN, IM
- Ego orientation -----> EXT
  - *Georgiadis, Biddle, & Chatzisarantis (2001)*
    Greek exercise participants

Basic Psychological Needs

- Behavioral regulations – A, C, R
  - *Wilson, Rodgers, Blanchard, & Gessell (2003)*

- Strenuous exercise - C
  - *Edmunds, Ntoumanis, & Duda (in press)*
    British exercise participants

- Concentration - C
- Enjoyment/interest – A, C
- Attitude toward exercise - C
- Intention to exercise - C
- Internal locus of control - C
- Frequency of exercise attendance – C
  - *Vlachopoulos & Michailidou (2006)*
    Greek exercise participants in fitness centers

- Enjoyment/interest – A, C, R
  - *Vlachopoulos (2007)*
    Greek exercise participants in community exercise programs

Basic Psychological Needs

- Context-level autonomous motivation
- Intentions and exercise behavior

Dieting and exercise

- *Hagger, Chatzisarantis, & Harris (2006)*

University students

Basic Psychological Needs and Exercise Behavior: A prospective study

(*Vlachopoulos & Neikou, 2007*)

The need for competence predicted group membership in the exercise adherence/dropout groups 6 months after need satisfaction assessment

Procedures

Program lasted for 8 weeks
Exercising 3 times / week
A total of 25 classes

5 minutes warm up
30 minutes dance aerobics
20 minutes muscle strengthening - pilates
5 minutes cooling down

<u>Measures administered 4 times:</u>
1st immediately before commencing 2nd class (1st week)
2nd in middle of program (4th week)
3rd immediately before last class (8th week),
4th 5 weeks after program termination

Content of intervention

Experimental group:

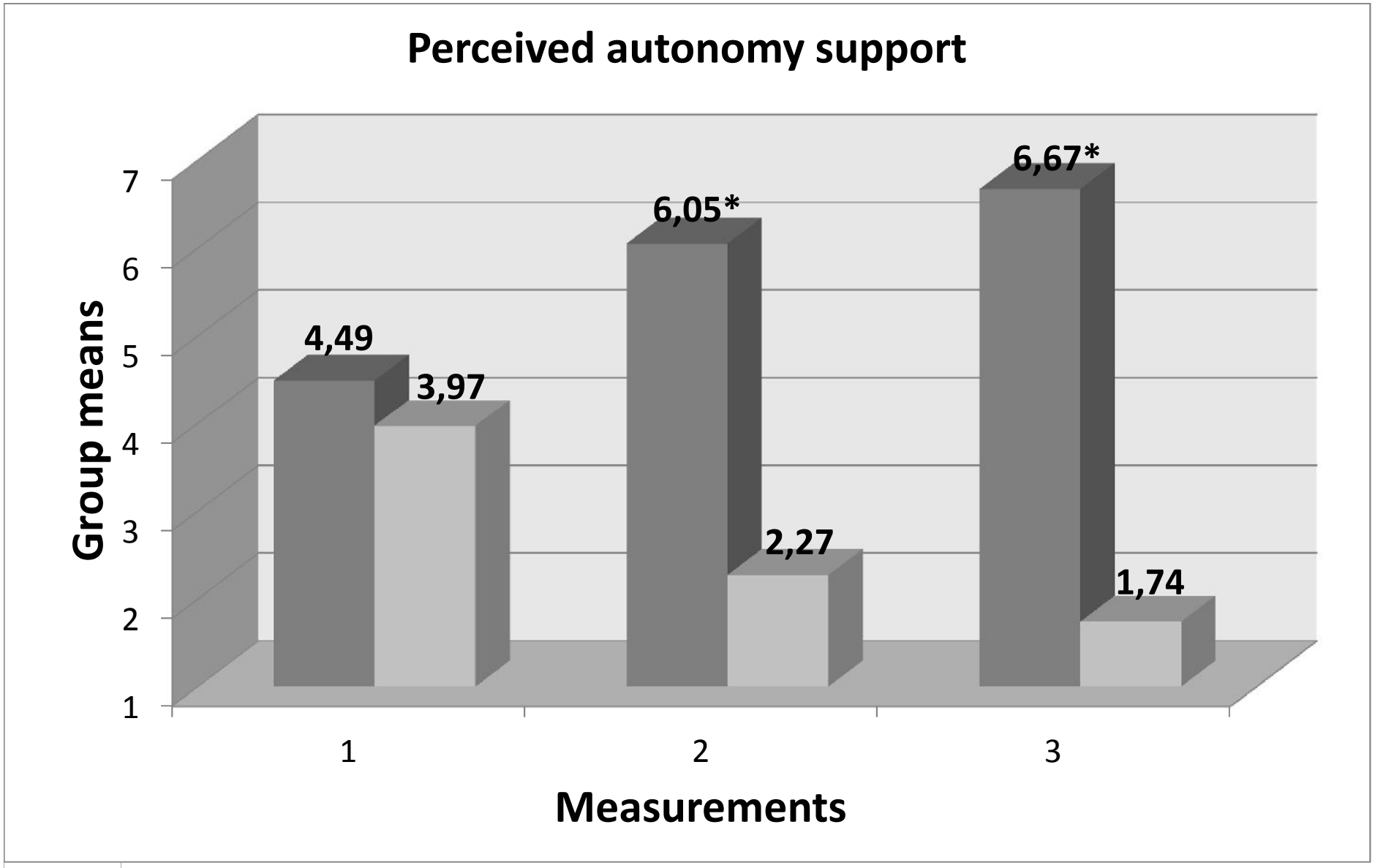
1. **Highlighting reasons for which program content is important**
2. **Providing choices**
3. **Positive feedback**
4. **Acknowledging difficulties – allowing failure - encouragement**
5. **Neutral language**
6. **Encouraging questions from participants**
7. **Taking into account participants' perspective**

(Williams et al., 1996)

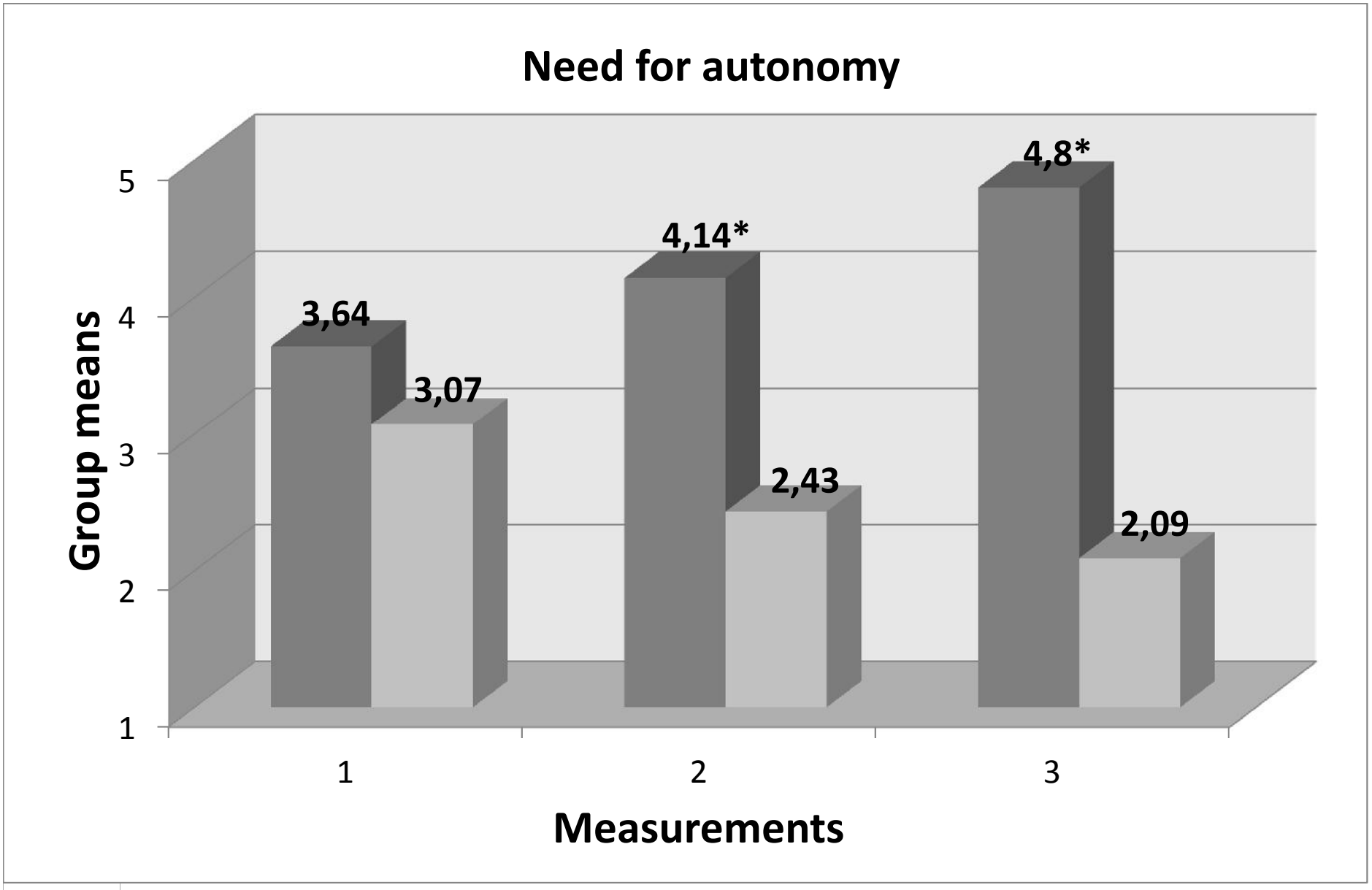
Control group

The exercise instructor . . .

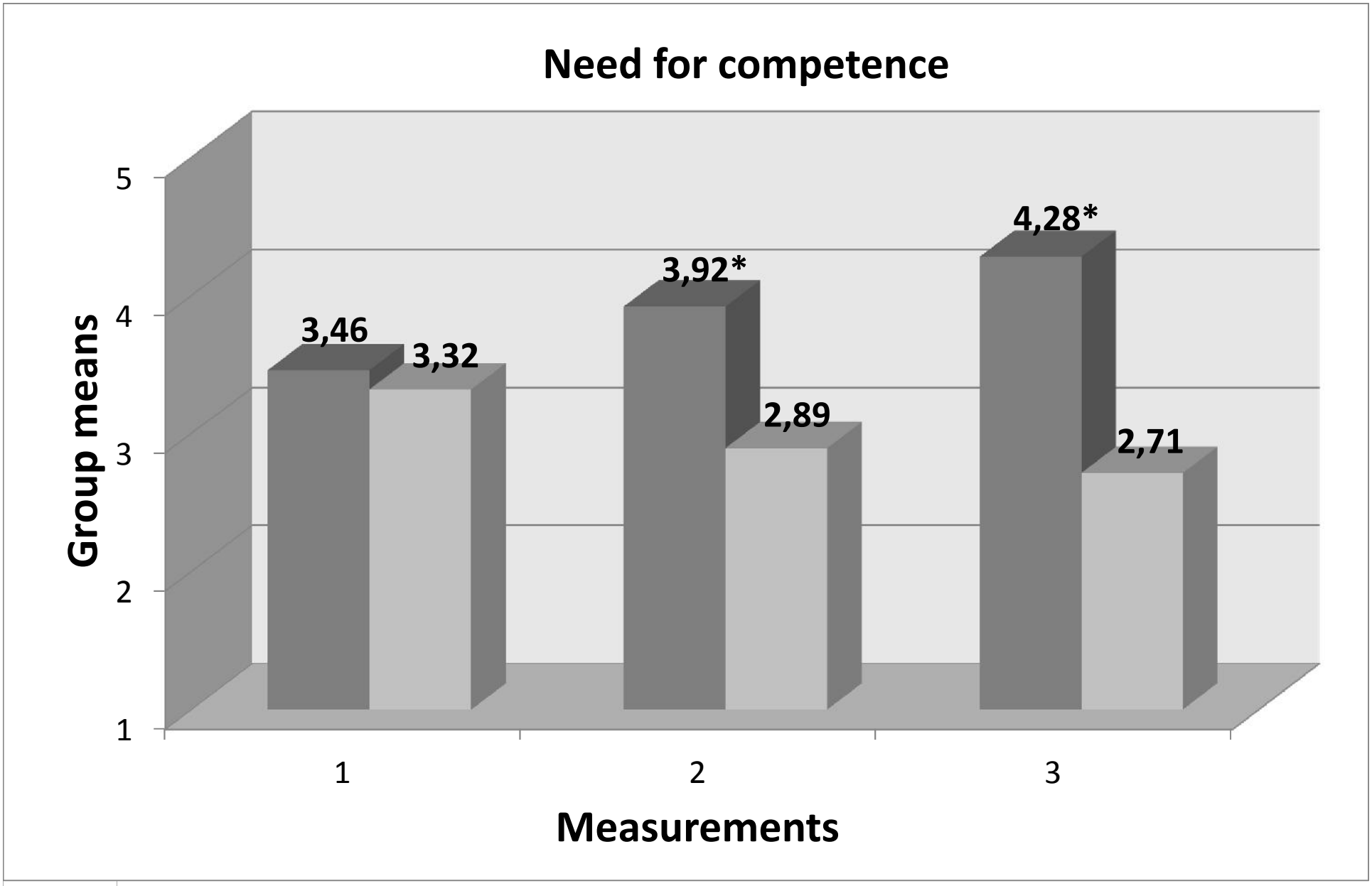
- **Did not use autonomy support practices**
- **Did not use controlling behaviors either (Bartholomew et al., 2010)**
- **Expected to see the ideal way of executing movements and corrected all wrong movement executions**
- **Did use neutral language**



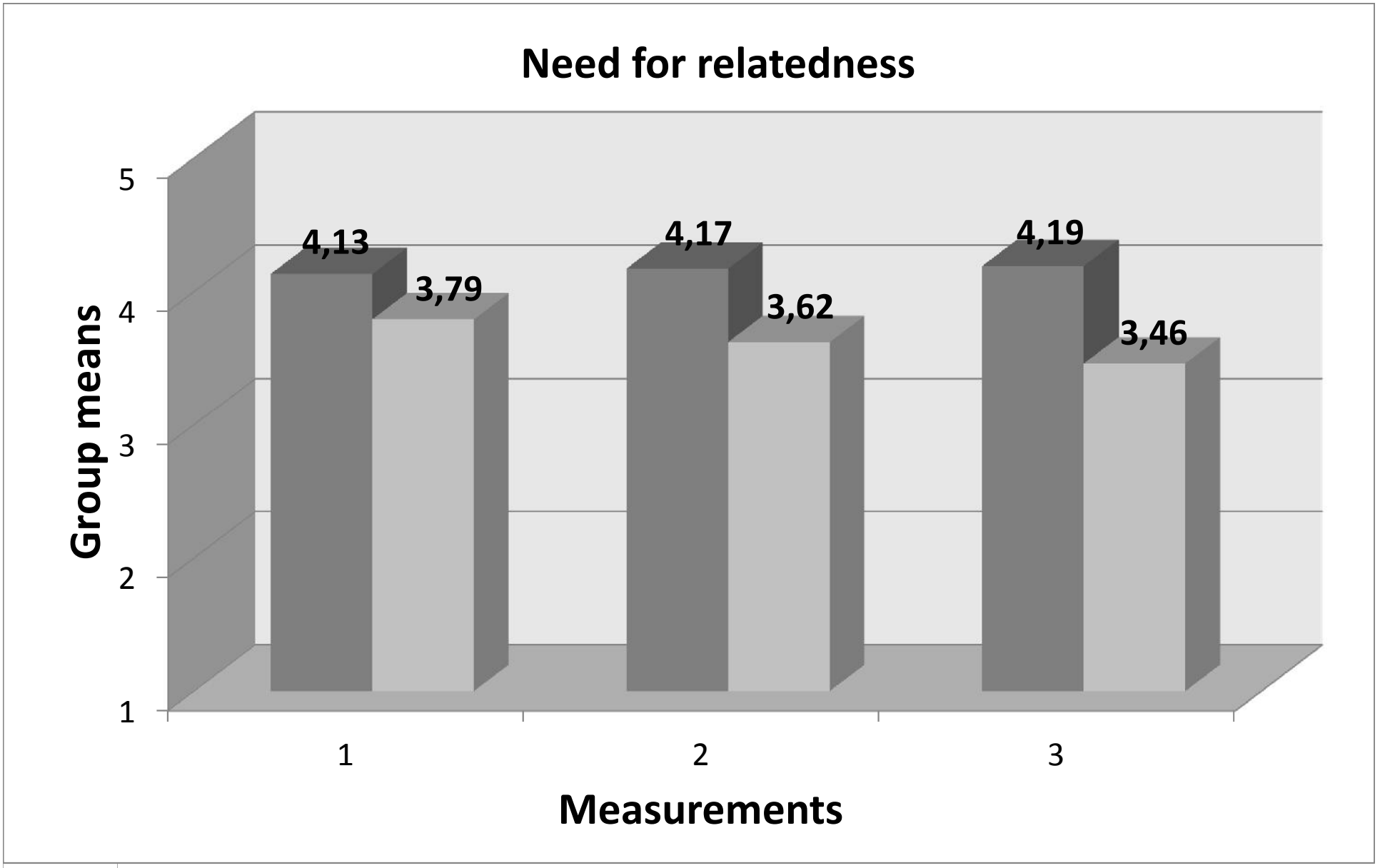
[*F* (2, 66) = 174.60, *p* < .001, eta squared = .84)]



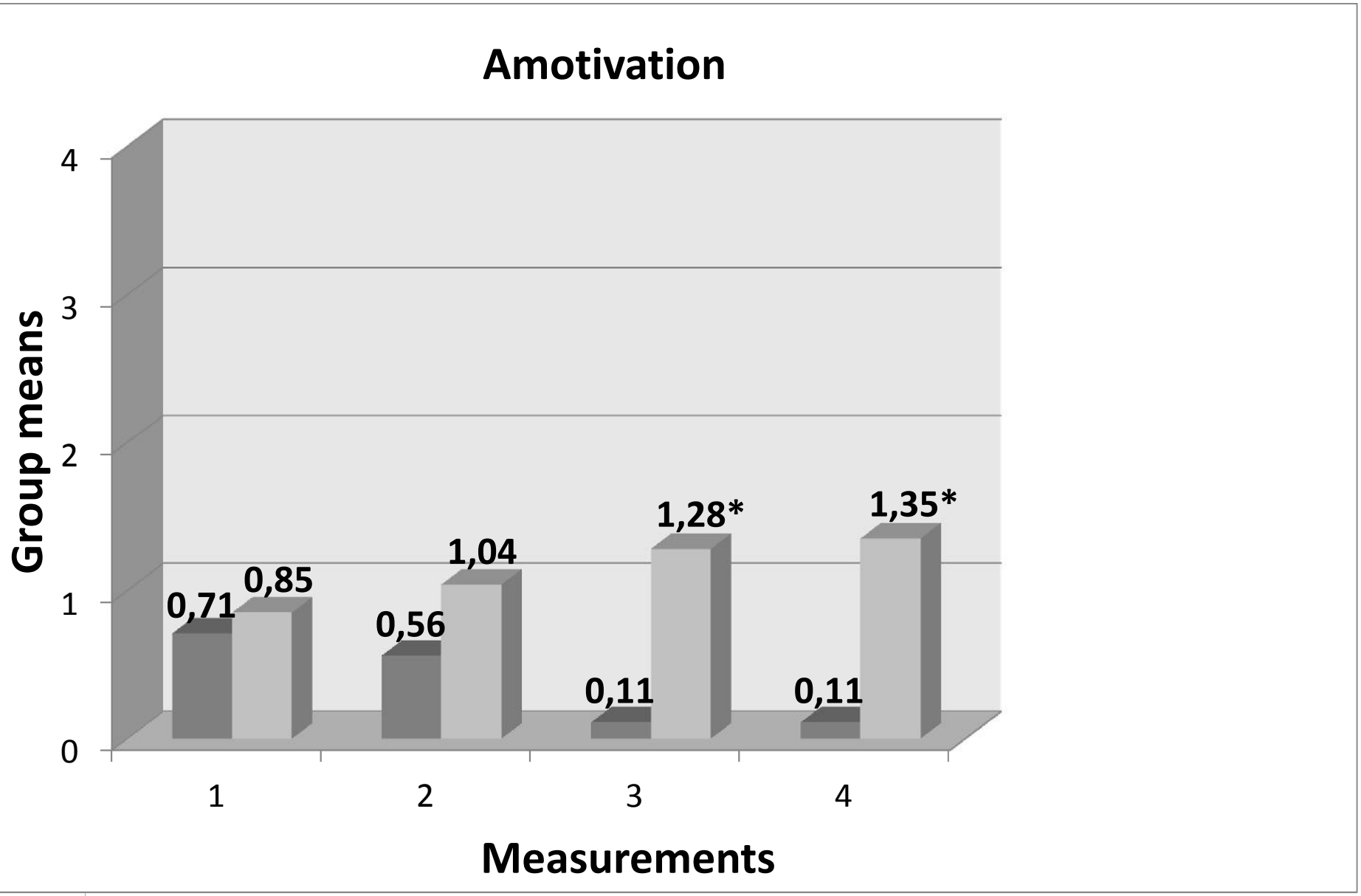
[*F* (2, 66) = 37.48, *p* < .001, eta squared = .53]



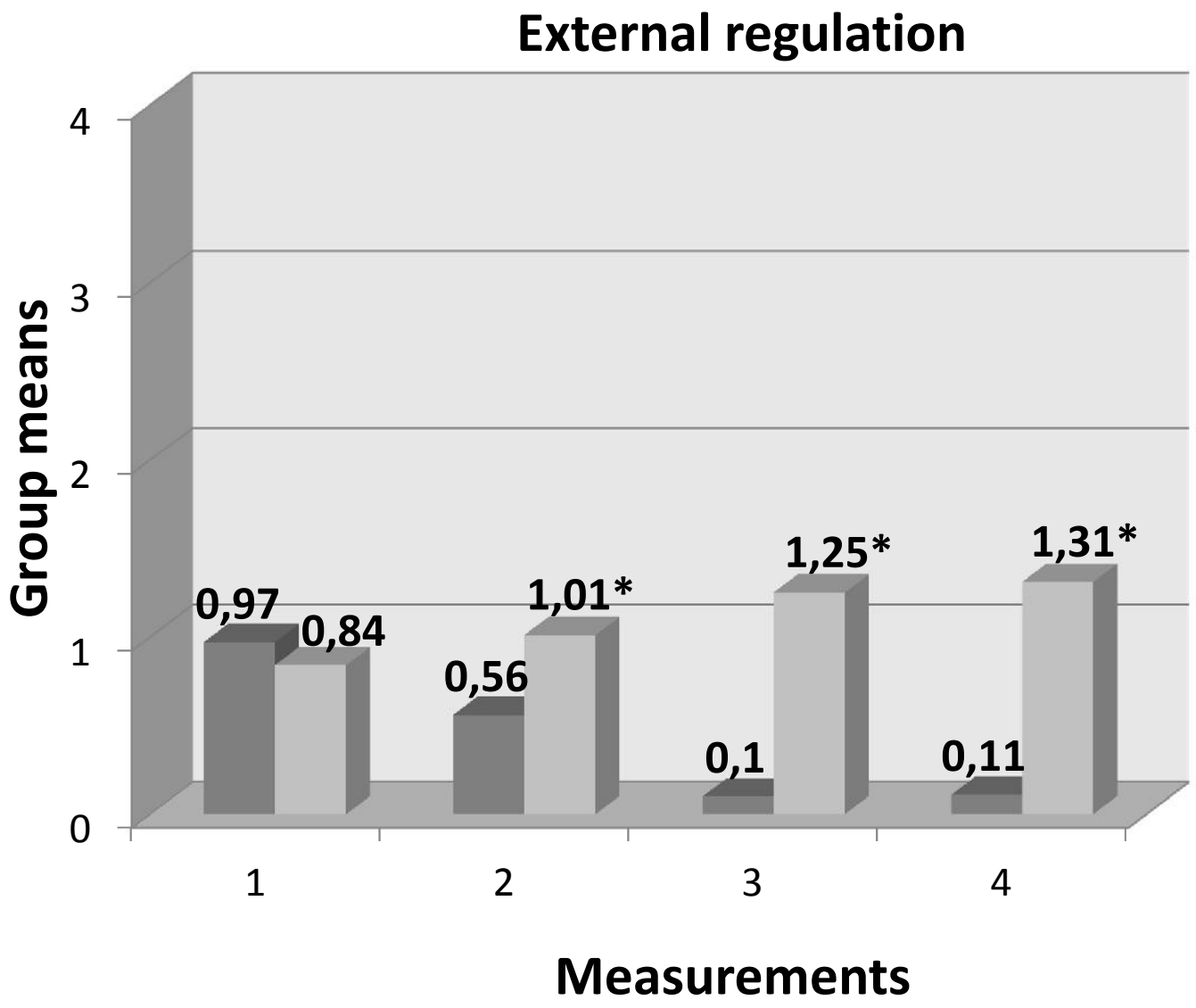
[*F* (2, 66) = 17.46, *p* < .001, eta squared = .34)]



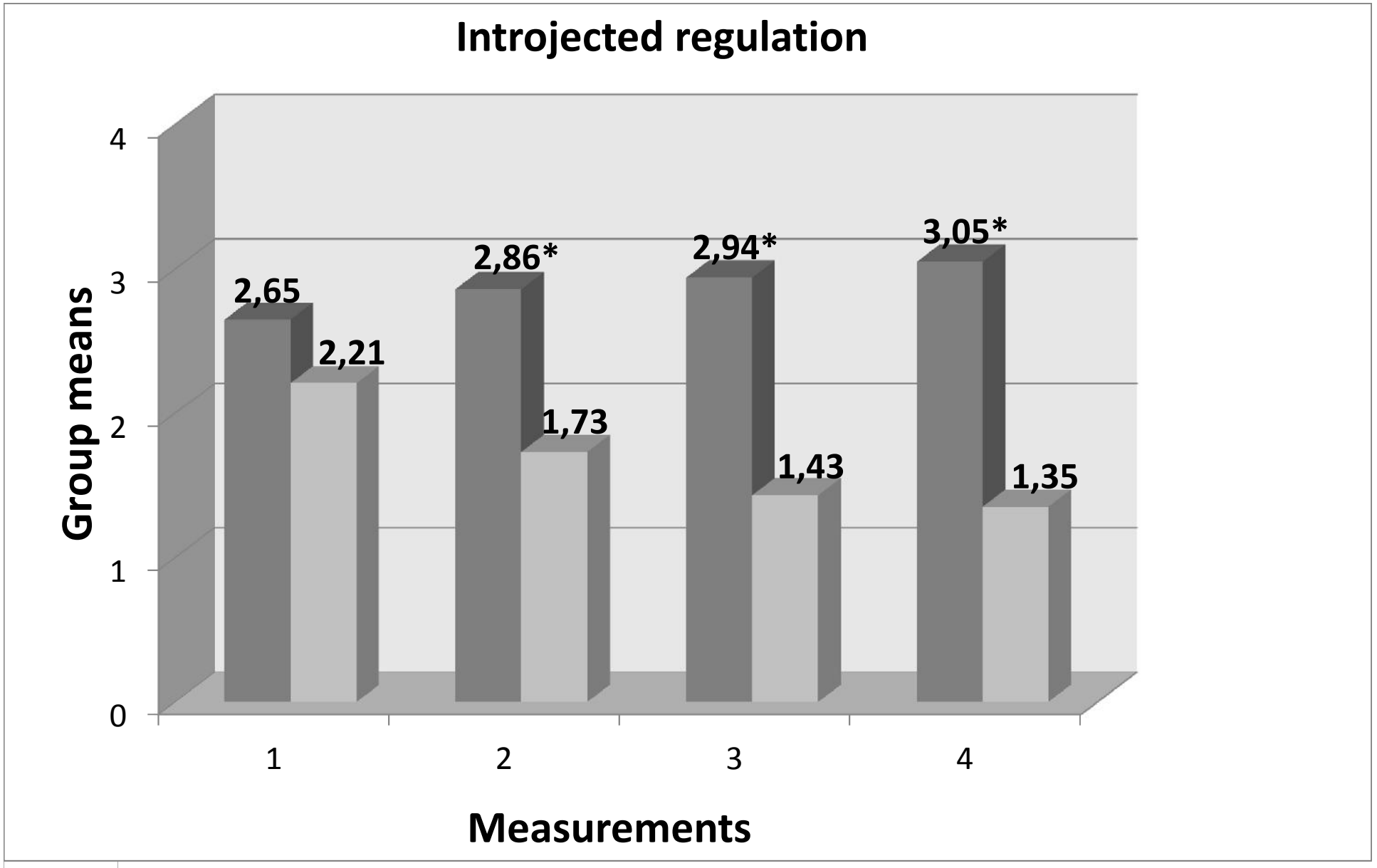
[*F* (2, 66) = 1.33, *p* > .05, eta squared = .03)]



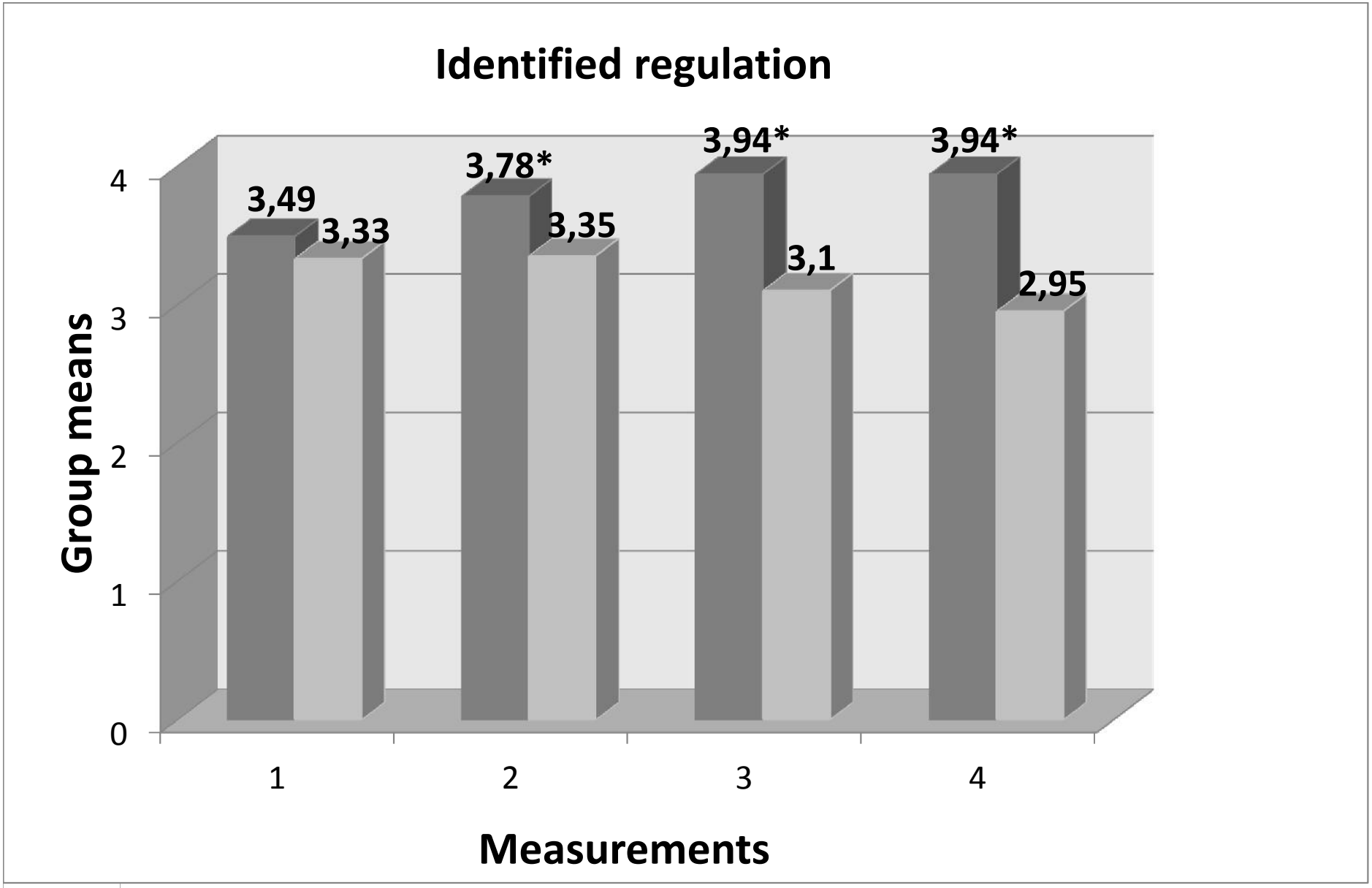
[F (3, 99) = 12.64, p < .001, eta squared = .27)]



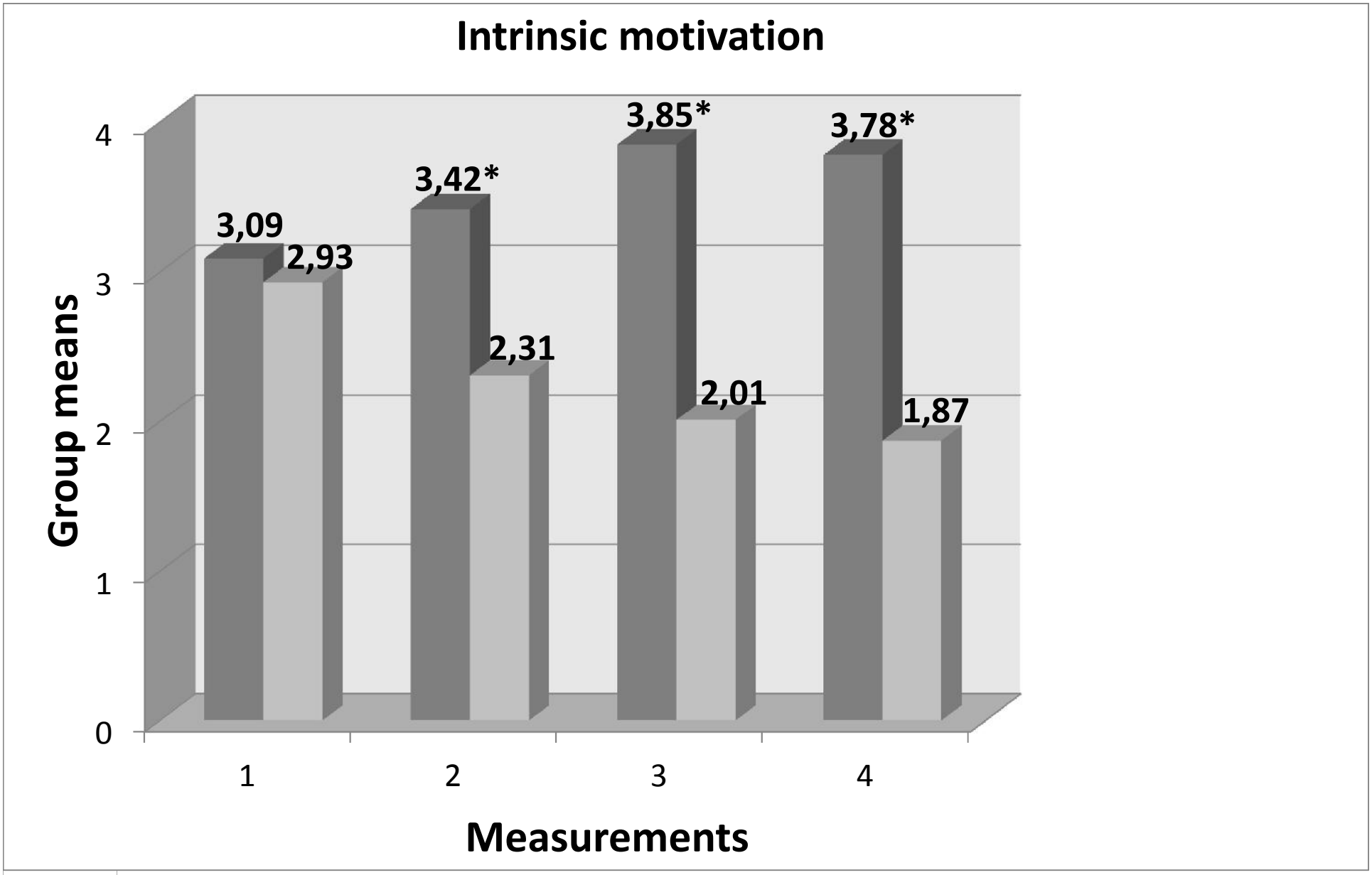
[*F* (3, 99) = 25.42, *p* < .001, eta squared = .43)]



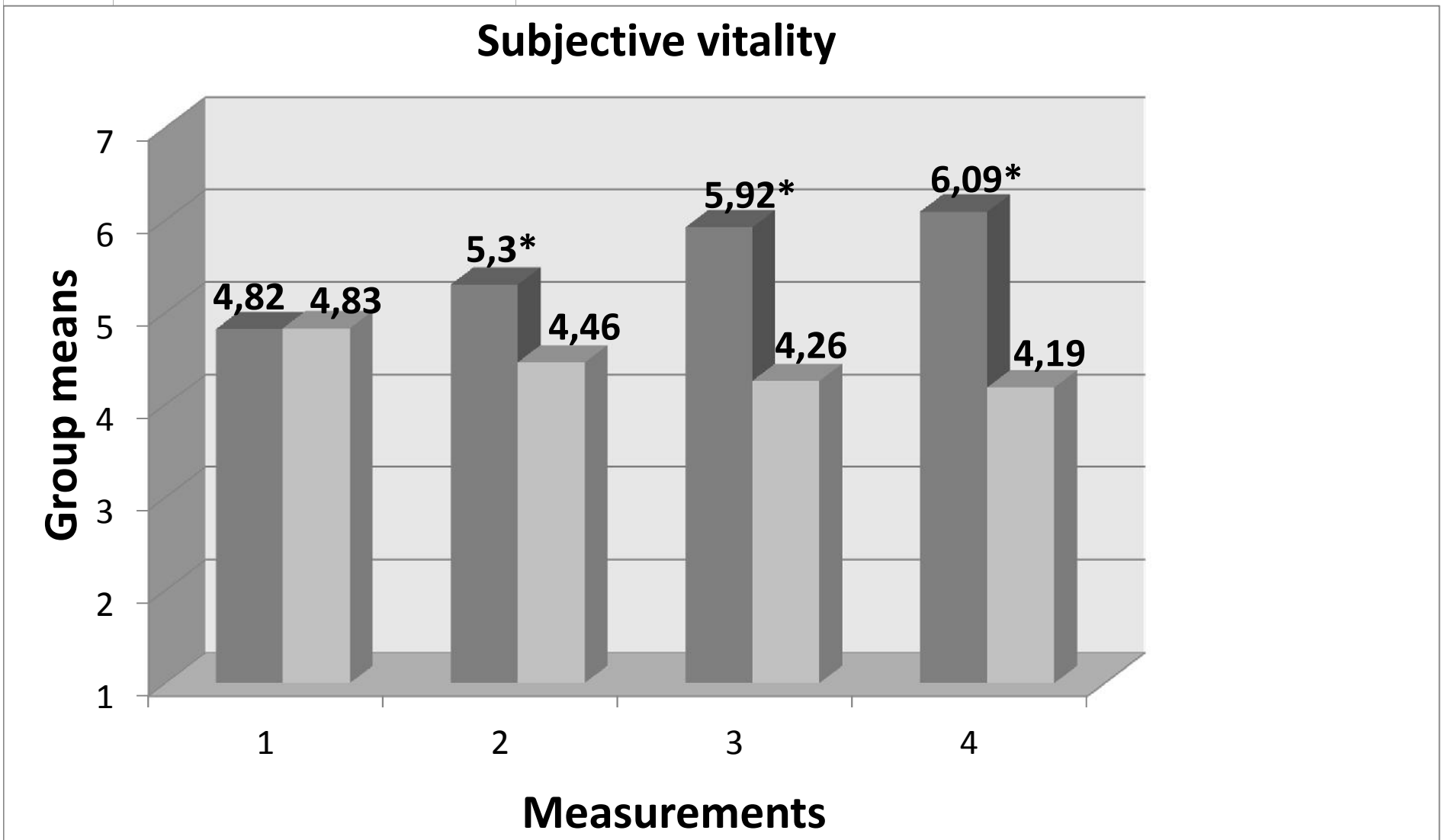
[*F* (3, 99) =10.11, *p* < .001, eta squared = .23)]



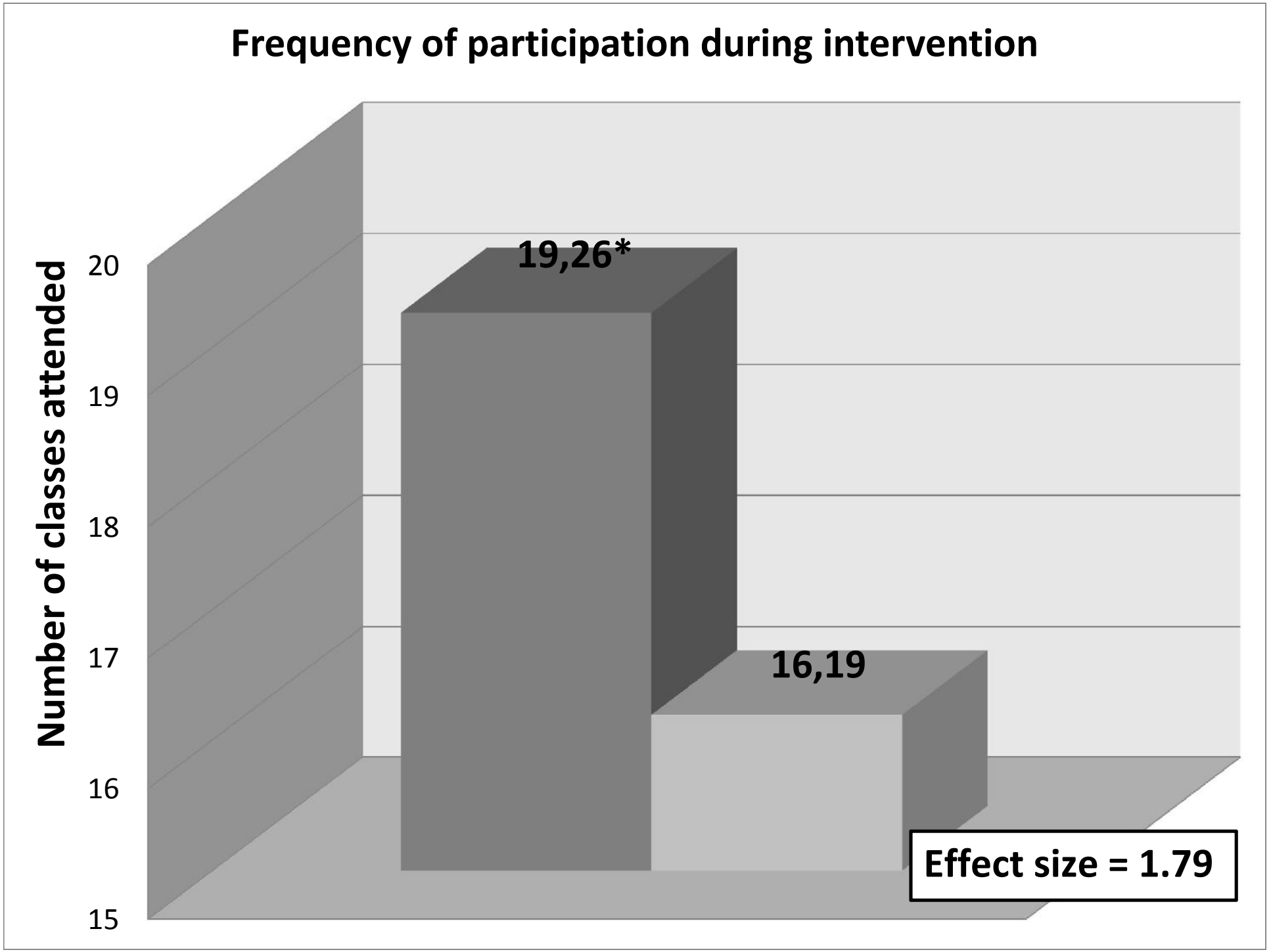
[*F* (3, 99) =10.16, *p* < .001, eta squared = .23)]

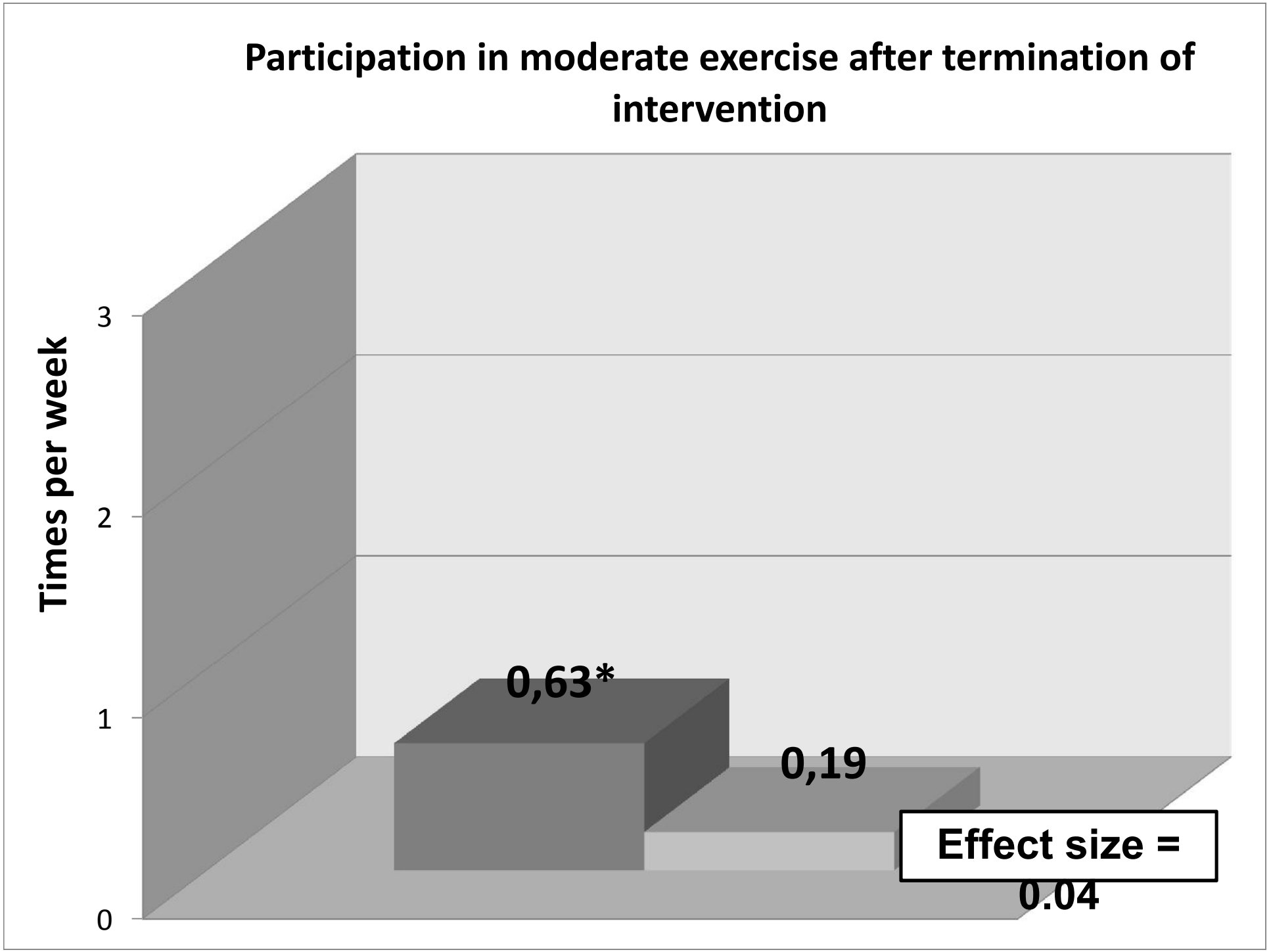


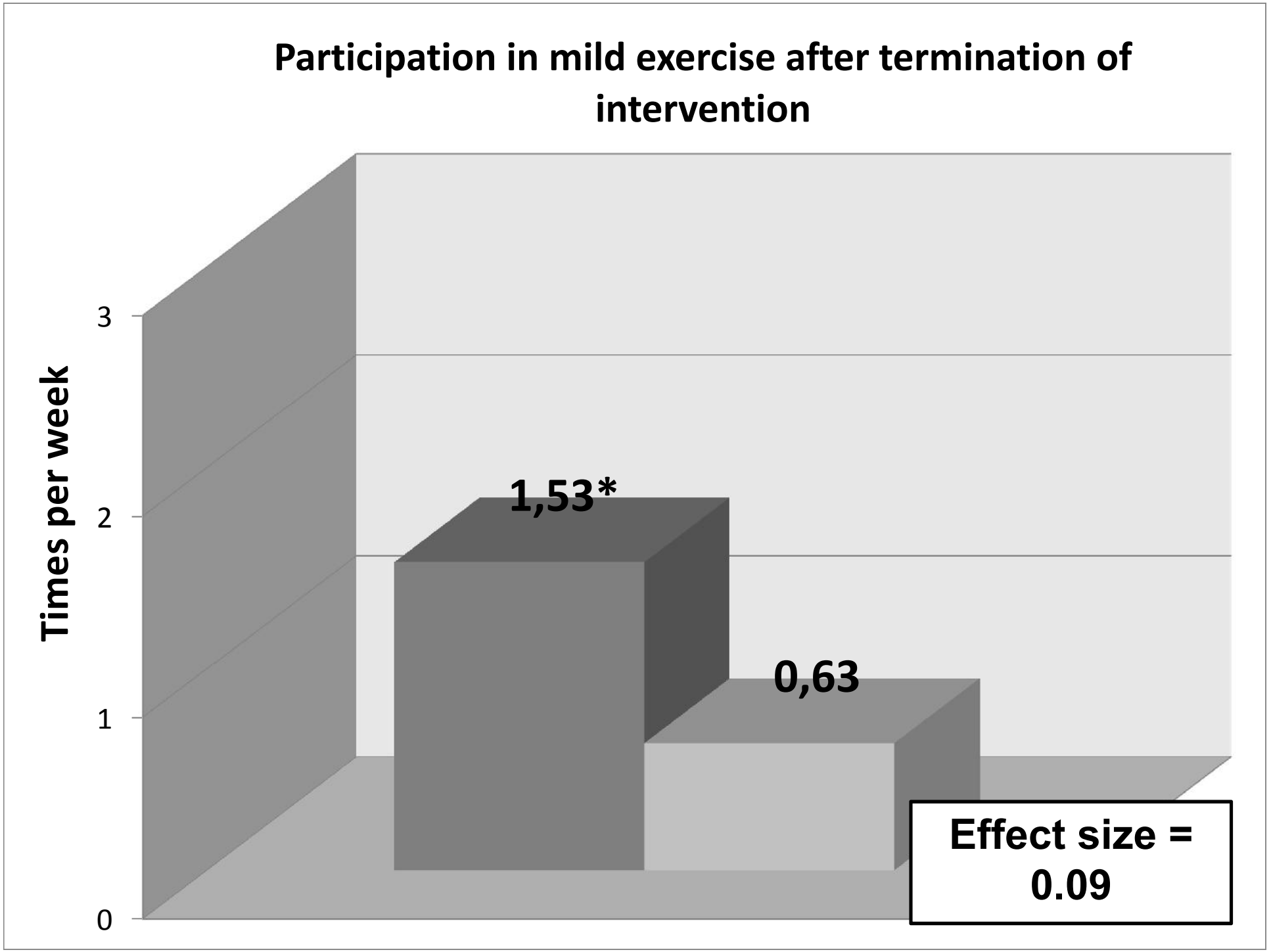
[*F* (3, 99) =25.27, *p*< .001,eta squared= .43)]



[*F* (3, 90) = 23.56, *p* < .001, eta squared = .38)]


Frequency of participation during intervention
Number of classes attended
20
19
18
17
16
15
19,26*
16,19
Effect size = 1.79


Participation in moderate exercise after termination of intervention
Times per week
3
2
1
0
0,63*
0,19
Effect size = 0.04


Participation in mild exercise after termination of intervention
Times per week
3
2
1
0
1,53*
0,63
Effect size = 0.09

Amotivation toward exercise

- Outcome beliefs
- Capacity beliefs
- Effort beliefs
- Value beliefs

Amotivation Toward Exercise Scale [ATES]
Vlachopoulos & Gigoudi (2008) *J of Aging and Physical Activity*

Amotivation Toward Exercise

Outcome amotivation beliefs

Why don’t you exercise?

«Because I am absolutely convinced that exercise will not have any positive effect on me»

Amotivation Toward Exercise

Capacity amotivation beliefs

Why don’t you exercise?

«Because I am absolutely convinced that I will not manage to cope with the requirements of an exercise program»

Amotivation Toward Exercise

Effort amotivation beliefs

Why don’t you exercise?

«Because I do not want at all to try to attend regularly an exercise program»

Amotivation Toward Exercise

Value amotivation beliefs

Why don’t you exercise?

«Because I believe that exercise is not important at all»

The relationship of multidimensional exercise amotivation beliefs with exercise perceived competence, attitude toward exercise, and intention to exercise

Table 2 Standardized Beta Regression Coefficients From the Prediction of External Variables by Amotivation Toward Exercise Scale Subscales

Amotivation subscale	Perceived competence	Attitude toward exercise	Intention to exercise
Outcome beliefs	–.01	–.35*	–.77*
Capacity beliefs	–.83*	–.45*	.06
Effort beliefs	.04	–.05	–.39*
Value beliefs	.06	–.37*	.04

*$p < .05$.

Vlachopoulos & Gigoudi (2008)
J. Aging Phys. Act.

Amotivation Toward Exercise

Task characteristics amotivation beliefs

Why don't you exercise?

«Because I find exercise really boring»

(*Amotivation Toward Exercise Scale - 2* [ATES-2]:
Vlachopoulos et al. 2010)

Facilitating health-behaviour change and its maintenance: The SDT perspective *(Ryan et al., 2008)*

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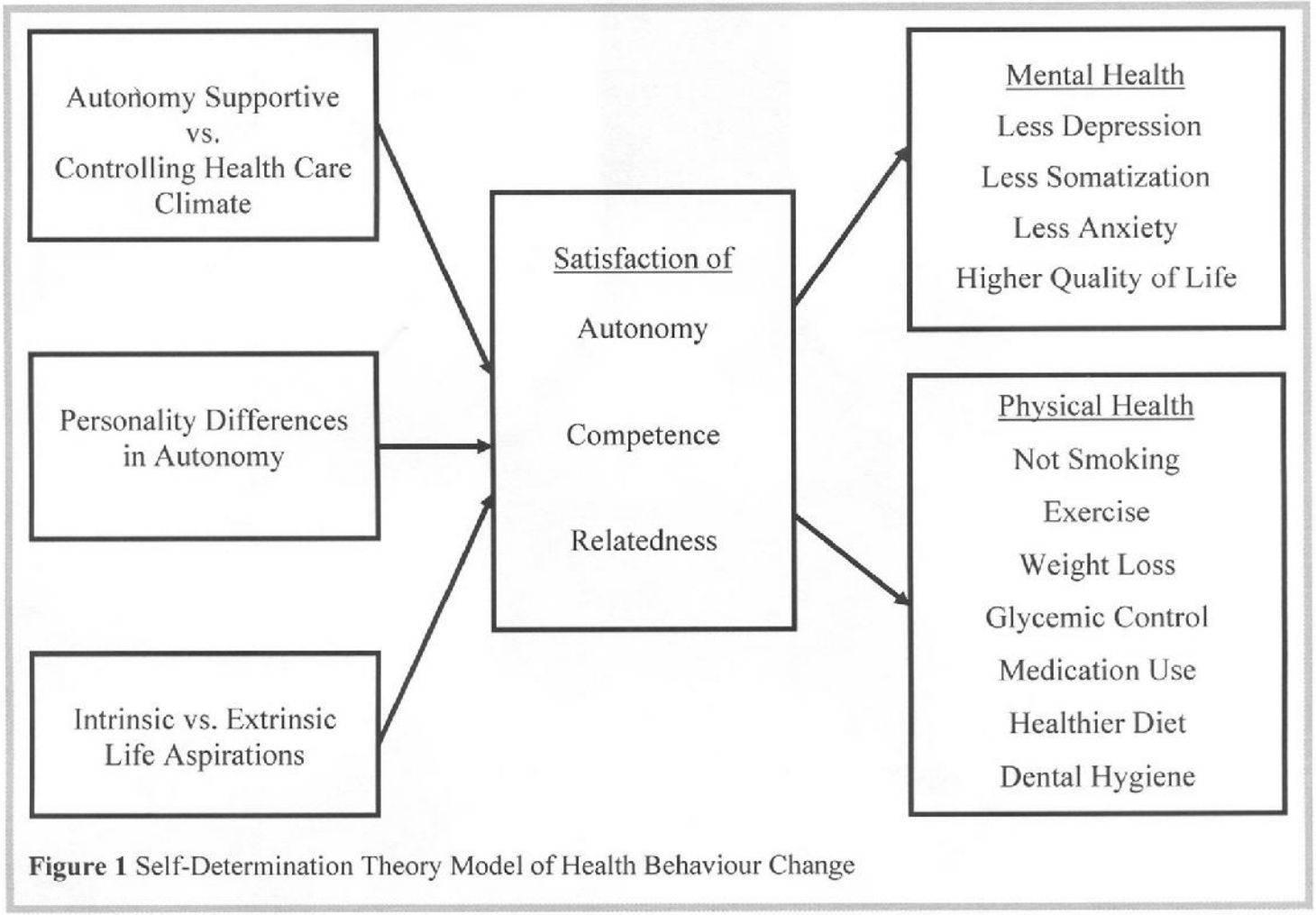

Figure 1 Self-Determination Theory Model of Health Behaviour Change

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