Original Article

Initial Validity Evidence for the Behavioral Regulation in Exercise Questionnaire-2 Among Greek Exercise Participants

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Abstract. The present study investigated the factor structure, scale dimensionality, discriminant validity, internal consistency, simplex structure, and nomological validity of the Greek translation of the Behavioral Regulation in Exercise Questionnaire-2 (BREQ-2; Markland & Tobin, 2004). A total of 733 Greek exercise participants completed the translated scale to indicate their reasons for participation in structured exercise programs. Confirmatory factor analyses supported the a priori 5-factor structure with strong internal consistency for the instrument subscales. Further support was obtained for the simplex pattern as well as the nomological correlations of the translated BREQ-2 responses with self-determination theory variables. Overall, the results provided initial support for the psychometric value of the Greek translation of the BREQ-2, rendering it appropriate for continued self-determination exercise research among Greek-speaking exercise participants.

Keywords: self-determination theory, self-determination continuum, exercise motivation, physical activity

Introduction

Physical activity is a fundamental means of improving physical and psychological health (Miles, 2007). However, given widespread physical inactivity (Buckworth & Dishman, 2002) a major practical issue in health promotion is how to facilitate adherence to regular exercise (Dishman, 1988). Physical activity can be motivated by a variety of reasons (Ingledew & Markland, 2008). Self-determination theory (SDT; Deci & Ryan, 1985) offers a suitable framework for studying exercise behavior given its emphasis on three major psychological forces of motivated behavior: Intrinsic motivation, where behavior is enacted out of pleasure and joy emanating from the activity; extrinsic motivation, which reflects behavior enactment to attain something separable through the activity; and amotivation, which reflects a lack of intention to enact a behavior. Deci and Ryan postulated that satisfaction of innate psychological needs for autonomy (a need to experience a sense of choice for enacting the activity), competence (a need to feel effective in the activity), and relatedness (a need to experience a sense of belonging) lead to internalization of extrinsically motivated behavior, which in turn leads to adaptive cognitive, affective, and behavioral outcomes. Further, these innate needs may be fulfilled or not, depending on the extent to which significant others support them during the activity (e.g., exercise instructor's support of autonomy).

Organismic integration theory (OIT; Deci & Ryan, 1985) – a subtheory of SDT – specifies four different types of extrinsic motivation. These reflect different degrees of self-determination and internalization of behavior with different consequences for performance and well-being, and they are placed on a self-determination continuum along which individuals can progress. From the least to the most self-determined regulations these are: external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation reflects behavior controlled by external contingencies, such as rewards or punishments administered by others. Under introjected regulation, the external contingencies have been internalized to some extent and the individual acts either to enhance self-esteem or lessen feelings of guilt. In identified regulation, the outcomes of the behavior engaged in are personally valued and behavior enactment is experienced as choiceful and more self-determined, something that is not the case for the previous two regulations. Integrated regulation reflects a high-

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er degree of internalization of behavior, which now is coordinated with the person's other values and is fully self-determined (Ryan, Williams, Patrick, & Deci, 2009). A considerable body of research has shown that the most positive outcomes are derived from the more self-determined types of motivation (i.e., identified regulation, integrated regulation, and intrinsic motivation), while the less self-determined forms of motivation (external regulation and introjected regulation) are either unrelated or negatively related to adaptive outcomes (Vallerand, Pelletier & Koestner, 2008). Amotivation has been systematically related to maladaptive outcomes (Vallerand & Ratelle, 2002). In the exercise domain, intrinsic motivation to exercise was positively related to exercise attendance (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Further, persons with higher self-determined motivation exhibited greater exercise effort and better exercise performance compared to persons with less self-determined motivation (Vansteenkiste, Simons, Soenens, & Lens, 2004; Wilson & Rodgers, 2004).

A number of exercise-specific behavioral regulation scales have been developed to assess reasons for exercise participation such as the Exercise Motivation Scale (EMS; Li, 1999) and the Behavioral Regulation in Exercise Questionnaire (BREQ; Mullan, Markland, & Ingledew, 1997) that was followed by a revised version (BREQ-2; Markland & Tobin, 2004) after the addition of an amotivation subscale. Both instruments assess the different types of extrinsic motivation, intrinsic motivation, and amotivation, with the EMS assessing three types of intrinsic motivation in contrast to the BREQ-2 that assesses intrinsic motivation in a unidimensional fashion. The BREQ-2 is the most widely used of the measures, and has been shown to have good factorial validity (e.g., Markland & Tobin, 2004; Wilson, Rodgers, & Fraser, 2002).

Most of the SDT research on behavioral regulations for exercise participation has been conducted with English-speaking populations. In order to extend the applicability of theories and models across cultures and nations, the translation of relevant instruments to other languages is necessary. Further, examination of the statistical invariance of SDT scales of autonomous motivation in various behavioral domains demonstrated that the SDT-based operationalizations of autonomy were linguistically meaningful and applicable to participants from different nations and sociolinguistic groups (Chirkov, 2009).

For example, the BREQ-2 has been translated into several languages, including Spanish (Murcia, Gimeno, & Camacho, 2007), in which the authors provided initial evidence on the factor structure of the BREQ-2 responses among Spanish individuals. However, the authors did not examine the scale dimensionality of the translated version (unidimensional structure, five uncorrelated factors, five correlated factors, hierarchical structure) of the BREQ-2 and the extent to which the factors represent related but distinct constructs. Further, the lack of translated-into-Greek instruments necessary to study SDT theoretical tenets among Greek individuals impedes knowledge advancement in relation to the motivational dynamics of exercise behavior among Greek-speaking populations.

Therefore, the purpose of the present study was to replicate the latent structure of the BREQ-2 responses found among English-speaking and Spanish individuals in a sample of Greek-speaking individuals and to further examine the scale dimensionality, discriminant validity, and the nomological validity of the translated BREQ-2 among Greek-speaking exercise participants. Hence, we also examined the correlations of the behavioral regulations with other key constructs posited in SDT such as the basic psychological needs for autonomy, competence, and relatedness, and perceived exercise-instructor support of autonomy, as well as with frequency of participation in mild, moderate, and strenuous exercise.

It was hypothesized that the translated BREQ-2 responses (a) would be best represented by a 5-factor structure comprising five correlated but still distinct factors, (b) would have strong internal reliability with alpha values greater than .70, (c) interfactor correlations would conform to a simplex pattern (correlations between adjacent subscales on the self-determination continuum would be stronger and positive compared to correlations between more distant subscales, which would be expected to be negative), and (d) there would be theoretically appropriate nomological correlations with other constructs such that perceived exercise instructor support of autonomy; the needs for autonomy, competence, and relatedness; and frequency of exercise behavior would correlate negatively with amotivation and external regulation and positively with introjected regulation, identified regulation, and intrinsic motivation. This pattern of correlations was also expected with strenuous and moderate, but not mild, exercise behavior.

Materials and Methods

Participants

The sample comprised 733 exercise participants from 13 private fitness centers in northern Greece. There were 403 women (55%) and 330 men (45%) aged 18 to 64 years with approximately 40% aged 18–25, 20% aged 25–30, 10% aged 30–35, 10% aged 35–40, and 20% aged 40–64. The participants engaged in group-type activities such as aerobics and individual activities such as weight lifting.

Measurement Tools

Behavioral Regulation in Exercise Questionnaire-2

The BREQ-2 (Markland & Tobin, 2004) was used to assess behavioral regulations in exercise. The scale comprises five subscales: Amotivation with 4 items (e.g., "I don't see why I should have to exercise"), external regulation with 4 items (e.g., "I exercise because other people say I should"), introjected regulation with 3 items (e.g., "I feel guilty when I don't exercise"), identified regulation with 4 items (e.g., "I value the benefits of exercise"), and intrinsic motivation with 4 items (e.g., "I exercise because it's fun"). Responses were provided on a 5-point Likert-type scale ranging from 0 (*definitely no*) to 4 (*definitely yes*).

Basic Psychological Needs in Exercise Scale

The Basic Psychological Needs in Exercise Scale (BPNES; Vlachopoulos & Michailidou, 2006) was used to assess the degree to which the basic psychological needs for autonomy, competence, and relatedness are fulfilled during exercise. The BPNES comprises 12 items (4 per subscale). Items follow the stem "In the present exercise setting . . ." and include for autonomy: "The exercise program I follow is highly compatible with my choices and interests," for competence: "I feel I have been making a huge progress with regard to the end result I pursue," and for relatedness: "I feel that I associate with the other exercise participants in a very friendly way." Participants were asked to report their agreement with the 12 statements by providing their responses on a 5-point Likert-type scale ranging from 1 (*do not agree at all*) to 5 (*very strongly agree*).

Perceived Autonomy Support

Perceptions of autonomy support by the exercise instructor were measured using a 6-item version of the Health Care Climate Questionnaire (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1996). In the current study the term "my health care provider" from the items of the original scale was replaced with "my exercise instructor." Thus, the scale included items such as: "I feel that my exercise instructor provides me with choices and options". Exercise participants responded on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Leisure Time Exercise Behavior

Frequency of exercise behavior was assessed using the Godin Leisure Time Exercise Questionnaire (Godin & Shepard, 1985). Participants responded to three questions assessing the frequency of strenuous, moderate, and mild exercise performed for a minimum of 15 min in a typical week.

Procedures

The scale items were translated using the back-translation procedure as outlined by Banville, Desrosiers, and Genet-Volet (2000) employing two bilingual translators to translate the scale from English to Greek and two more bilingual translators to retranslate the scale back into English. Data were collected in private fitness centers after verbal permission of the center directors. Exercise participants were approached before entering the exercise program and were requested to participate in the study. Every second participant was intercepted at the reception area and data were collected on all days of the week. After being informed about the purpose of the research and receiving assurance about confidentiality and anonymity, the participants completed the questionnaire. Written informed consent for participation in the study was provided by all participants. Finally, participants were thanked for their participation.

Data Analysis

Initially, we computed the means, standard deviations, skewness, and kurtosis values of the translated BREQ-2 items. The next step was to examine the latent structure of the translated scale responses through confirmatory factor analysis (CFA) procedures. CFA was used to test the a-priori 5-factor structure of the scale responses. Then, we estimated the internal consistency of the BREQ-2 subscales using Cronbach's α coefficient.

The 5-factor 19-item model of the translated BREQ-2 was tested using the EQS software. All items were free to load on their intended factor whereas cross-loadings were fixed to zero, the factor variances were fixed to unity, and the item residual covariances were fixed to zero. The criteria used to assess the model fit were the chi-square statistic (χ^2), the non-normed fit index (NNFI), the comparative fit index (CFI), the root mean squared error of approximation (RMSEA), and its associated 90% confidence interval (CI). The χ^2 test examines the discrepancy between the data-implied and the model-implied covariance matrices with a significant result indicating poor model fit. However, with a large sample this statistic becomes overly sensitive (Byrne, 2006). NNFI and CFI values of .90 and less do not indicate a good model fit, whereas values around .95 or greater indicate a good fit (Hu & Bentler, 1999). A RMSEA value less than .05 indicates a good fit to the data (Hu & Bentler); a value of .08 indicates an adequate model fit (Browne & Cudeck, 1993) with a value of .10 being the upper limit (Byrne, 2000). Akaikes' information criterion (AIC) was used to compare competing models as it allows for comparison of nonnested (i.e., hierarchical) models, and penalizes for model complexity (i.e., overparameterization; Byrne, 1998). Smaller values indicate a better model fit.

Results

Structural Validity and Internal Consistency

Item skewness ranged from –1.22 to 2.33 and item kurtosis from –0.93 to 7.97. Given a normalized estimate of multi-

Table 1. Correlated 5-factor CFA model parameter estimates for the translated-into-Greek BREQ-2 scores

Scale items	*M*	*SD*	Skewness	Kurtosis	Item loadings	Item uniquenesses
Amotivation						
Amotivation 1 – I don't see why I should have to exercise	0.34	0.60	2.06	5.81	.729	.684
Amotivation 2 – I can't see why I should bother exercising	0.33	0.56	1.81	4.48	.817	.577
Amotivation 3 – I don't see the point in exercising	0.30	0.55	2.04	5.16	.893	.450
Amotivation 4 – I think exercising is a waste of time	0.29	0.55	2.34	7.98	.758	.653
External regulation						
External 1 – I exercise because other people say I should	0.63	0.86	1.57	2.32	.753	.658
External 2 – I take part in exercise because my friends/family/partner say I should	0.57	0.85	1.80	3.37	.797	.604
External 3 – I exercise because others will not be pleased with me if I don't	0.52	0.76	1.64	2.79	.711	.703
External 4 – I feel under pressure from my friends/family to exercise	0.50	0.70	1.56	2.98	.765	.645
Introjected regulation						
Introjected 1 – I feel guilty when I don't exercise	2.38	1.18	–0.47	–0.84	.714	.700
Introjected 2 – I feel ashamed when I miss an exercise session	2.47	1.10	–0.47	–0.69	.777	.630
Introjected 3 – I feel like a failure when I haven't exercised in a while	2.30	1.20	–0.37	–0.94	.699	.715
Identified regulation						
Identified 1 – I value the benefits of exercise	3.50	0.62	–1.05	0.84	.730	.684
Identified 2 – It's important for me to exercise regularly	3.22	0.82	–1.02	0.74	.827	.563
Identified 3 – I think it's important to make the effort to exercise regularly	3.24	0.73	–1.05	1.80	.808	.590
Intrinsic motivation						
Intrinsic 1 – I exercise because it's fun	2.66	1.03	–0.61	–0.35	.631	.776
Intrinsic 2 – I enjoy my exercise sessions	3.05	0.81	–0.93	0.90	.850	.526
Intrinsic 3 – I find exercise a pleasurable activity	3.13	0.88	–1.22	1.64	.901	.433
Intrinsic 4 – I get pleasure and satisfaction from participating in exercise	3.17	0.85	–1.15	1.37	.889	.458

Note. $N = 733$; CFA = confirmatory factor analysis; all factor loadings and item uniquenesses are completely standardized and statistically significant at $p < .05$. Item uniqueness represents the item variability not explained by the latent factor (error item variance).

variate kurtosis of 70.77, the Satorra-Bentler scaled χ^2 and the robust goodness-of-fit indexes corrected for nonnormality were used. The goodness-of-fit indexes for the 5-factor 19-item model of the translated BREQ-2 responses were: $\chi^2 = 387.21$, scaled $\chi^2 = 348.60$, $df = 142$, $p < .001$, robust NNFI = .943, robust CFI = .953, robust RMSEA = .045, RMSEA 90% CI (.039-.050). One identified regulation item ("I get restless if I don't exercise regularly") had a very weak item loading (.28). The item was removed and the model reestimated. For the reestimated 18-item model the normalized estimate of multivariate kurtosis was 74.59 indicating multivariate nonnormality of the data. The fit indexes showed a good fit to the data: $\chi^2 = 308.23$, scaled $\chi^2 = 275.52$, $df = 125$, $p < .001$, robust NNFI = .955, robust CFI = .963, robust RMSEA = .041, RMSEA 90% CI (.034–.047). The factor loadings ranged from .63 to .90 (Table 1). Further, the Cronbach's α coefficients for the Greek BREQ-2 subscales were all greater than .70 (.87 for amotivation, .84 for external regulation, .77 for introjected regulation, .82 for identified regulation, and .88 for intrinsic motivation).

Scale Dimensionality

To further scrutinize the latent structure of the responses we compared the 18-item 5-factor correlated model with: (a) a single-factor model, hypothesizing that all items are indicators of a single construct; (b) a 5-factor uncorrelated model, hypothesizing that the 5 factors are completely uncorrelated constructs; and (c) a hierarchical model, hypothesizing that the correlations between the 5 factors are explained by a higher order factor. The results indicated that the 18-item correlated 5-factor model (Table 2) was the only model that fit the data adequately and statistically better than the alternative models.

Discriminant Validity

To examine the extent of factor separability we compared the 18-item 5-factor correlated model with a series of 4-factor correlated models specifying in each model items from each possible pair of factors to load onto the same

Table 2. CFA goodness of fit indexes of various conceptualizations of the BREQ-2 score dimensionality

CFA model	χ^2	*df*	*SB* χ^2	SB χ^2 diff.	*df* diff.	Robust NNFI	Robust CFI	Robust RMSEA	Robust RMSEA 90% CI	Robust AIC
Model 1: Correlated 5-factor	308.23	125	275.52	–	–	.955	.963	.041	.034–.047	58.23
Model 2: Single-factor	2648.06	135	2122.43	818.33*	10	.453	.518	.142	.136–147	2378.05
Model 3: Uncorrelated 5-factor	1707.60	135	1483.61	900.33*	10	.629	.673	.117	.111–122	1213.61
Model 4: Hierarchical	466.70	130	416.61	136.81*	5	.918	.930	.055	.049–.061	156.61

Note. N = 733. CFA = confirmatory factor analysis; SB χ^2 = Satorra-Bentler scaled χ^2; NNFI = nonnormed fit index; CFI = comparative fit index; RMSEA = root mean squared error of approximation; AIC = Akaike's information criterion. * significant at $p < .001$. Models 2, 3, and 4 are contrasted to Model 1. Contrasts are based on the SB χ^2 values.

Table 3. Factor separability results through confirmatory factor analysis

CFA model	χ^2	*df*	*SB* χ^2	*SB* χ^2 diff.	*df* diff.	Robust NNFI	Robust CFI	Robust RMSEA	Robust RMSEA 90% CI	Robust AIC
Model 1: correlated 5-factor	308.23	125	275.52	–	–	.955	.963	.041	.034–.047	25.52
Model 2: amotivation-external reg.	994.91	129	828.85	818.33*	4	.799	.830	.086	.080–.092	570.85
Model 3: amotivation-introjected reg.	1020.37	129	892.23	370.55*	4	.780	.815	.090	.084–.095	634.23
Model 4: amotivation-identified reg.	1087.04	129	950.48	404.84*	4	.764	.801	.093	.088–.099	692.48
Model 5: amotivation-intrinsic mot.	1307.86	129	1154.03	628.61*	4	.705	.751	.104	.099–.110	896.03
Model 6: external reg.-introjected reg.	1097.90	129	959.82	409.23*	4	.761	.798	.094	.088–.099	701.82
Model 7: external reg.-identified reg.	1088.52	129	918.21	238.49*	4	.773	.808	.091	.086–.097	660.21
Model 8: external reg.-intrinsic mot.	1080.59	129	922.66	274.84*	4	.774	.807	.092	.086–.097	664.66
Model 9: introjected reg.-identified reg.	770.53	129	685.69	361.01*	4	.840	.865	.077	.071–.082	427.69
Model 10: introjected reg.-intrinsic mot.	935.47	129	823.35	372.93*	4	.800	.831	.086	.080–.091	565.35
Model 11: identified reg.-intrinsic mot.	538.58	129	474.80	141.99*	4	.900	.916	.061	.055–.066	216.80

Note. CFA = confirmatory factor analysis; SB χ^2 = Satorra-Bentler Scaled χ^2; NNFI = nonnormed fit index; CFI = comparative fit index; RMSEA = root mean squared error of approximation; AIC = Akaike's information criterion. *significant at $p < .001$. Contrasts are based on the SB χ^2 values. reg. = regulation, mot. = motivation.

Table 4. Pearson's correlations among Greek BREQ-2 subscales, basic psychological needs, perceptions of autonomy support, and exercise behavior

	Amotivation	External	Introjected	Identified	Intrinsic	Competence	Relatedness	Autonomy	Autonomy Support	Strenuous exercise	Moderate exercise	Mild exercise
Amotivation	[.87]	.51*	–.20*	–.53*	–.49*	–.41*	–.25*	–.31*	–.26*	–.16*	–.07*	.01
External regulation	–	[.84]	–.01	–.45*	–.49*	–.41*	–.27*	–.36*	–.27*	–.10*	–.10*	.03
Introjected regulation	–	–	[.77]	.44*	.26*	.27*	.20*	.16*	.11*	.10*	.037	.01
Identified regulation	–	–	–	[.82]	.72*	.63*	.47*	.54*	.42*	.18*	.13*	.04
Intrinsic motivation	–	–	–	–	[.88]	.68*	.56*	.65*	.48*	.20*	.12*	.02
Competence	–	–	–	–	–	[.85]	.62*	.72*	.42*	.22*	.10*	.07
Relatedness	–	–	–	–	–	–	[.92]	.60*	.44*	.07	.032	.02
Autonomy	–	–	–	–	–	–	–	[.85]	.47*	.19*	.10*	–.00
Autonomy support	–	–	–	–	–	–	–	–	[.93]	.11*	.17*	.09*
Strenuous exercise	–	–	–	–	–	–	–	–	–	–	.041	.05
Moderate exercise	–	–	–	–	–	–	–	–	–	–	–	.24*

Note. *indicates significant at $p < .01$. Values on the diagonal represent the internal consistency coefficients of the subscales. No internal consistency coefficients are presented for the exercise variables because they are measured by a single item.

factor. The correlated 5-factor model displayed a statistically and substantively better fit compared to the other CFA models (see Table 3). Furthermore, the estimation of CIs around latent factor correlation coefficients within ± 2 standard errors demonstrated that no CI included the value of 1.0, also supporting the discriminant validity of the scale scores (Anderson & Gerbing, 1988).

Simplex Pattern Correlations

Pearson's correlations were computed between the Greek BREQ-2 subscales to examine whether correlations conform to a simplex pattern (see Table 4). As expected more adjacent subscales were more positively and highly correlated compared to their correlation with subscales more distant on the continuum where the correlations were negative.

Nomological Correlations

Pearson's correlations of each subscale with the remaining constructs of the SDT framework (Table 4) demonstrated negative associations of perceived exercise instructor support of autonomy and the needs for autonomy, competence, and relatedness with amotivation and external regulation, whereas the correlations with introjected regulation, identified regulation and intrinsic motivation were positive, as expected. The same pattern of findings emerged for frequency of participation in moderate and strenuous exercise behavior but not for mild exercise behavior. Hence, the present findings supported both the simplex pattern and the nomological correlations hypotheses.

Discussion

Given the need for theory testing in a multiplicity of cultures and socio-linguistic groups, testing self-determination theory predictions regarding motivated exercise behavior in non-English speaking populations requires instruments appropriate for use with the target language. The purpose of the present study was to replicate the structural, discriminant, and nomological validity of the BREQ-2 among Greek-speaking exercise participants. For that purpose, the BREQ-2's factorial validity, the simplex pattern among the BREQ-2 subscales, and the nomological network between the BREQ-2 subscales and other variables from the SDT framework, such as perceived autonomy support, the needs for autonomy, competence and relatedness, as well as indices of frequency of exercise behavior, were examined.

Translated BREQ-2 Latent Structure

The findings provided initial evidence in support of the originally hypothesized latent structure of the scale responses. Specifically, the 5-correlated factor model of the translated BREQ-2 responses was supported through CFA with strong item loadings. However, one item from the identified regulation factor was removed because of a weak factor loading. This result is consistent with previous applications of the scale among British and Spanish samples (Ingledew & Markland, 2008; Murcia et al., 2007). The favorable factor-structure findings were accompanied by evidence of the statistical superiority of the 18-item correlated 5-factor model compared to a single-factor model, the uncorrelated 5-factor model, and the hierarchical model. The discriminant validity analyses supported the separability of the 5 factors of Greek BREQ-2 responses, indicating that the items operate as indicators of distinct constructs. Although the hierarchical model showed acceptable goodness-of-fit indexes, the robust AIC for the model was considerably larger than that for the correlated 5-factor model, indicating that the latter model was a better representation of the data. Furthermore, the correlated 5-factor model is theoretically justified by the simplex nature of the motivation constructs that precludes the possibility that one higher-order factor explains the covariances among the first-order motivation constructs.

Overall, the respondents perceived the scale items as assessing five distinct but related motivation facets. In conjunction with the high internal consistency coefficients that emerged for each of the translated BREQ-2 subscales, the findings supported predictions of a sound BREQ-2 latent structure based on responses of Greek-speaking exercise participants.

Simplex Structure and Nomological Correlations

The findings provided support, to a large extent, for the simplex structure of the translated BREQ-2 responses based on the positive correlations between the adjacent BREQ-2 subscales compared to the negative correlations between subscales more distant on the continuum. These findings provide support for the presence of the self-determination continuum that is central in the conceptualization of the organismic integration subtheory of the SDT. Support for the simplex pattern indicates that the graded conceptualization of the various types of behavioral regulations ranging from the least (amotivation) to the most self-determined (intrinsic motivation), as assessed by the translated BREQ-2, holds for Greek-speaking exercise participants. These findings provide further support for the validity of the self-determination continuum conceptualization among Greek-speaking individuals. In addition, the correlations between the translated BREQ-2 subscale scores and relevant SDT variables, such as perceived exercise-instructor support of autonomy, the basic psychological needs for autonomy, competence, and relatedness, and with weekly frequency of moderate and strenuous exercise participation, which emerged in theoretically expected patterns, provided further support for the nomological validity of the Greek BREQ-2 item scores. In line with extant literature (Edmunds, Ntoumanis, & Duda, 2006) mild exercise behavior was uncorrelated with all types of motivation as activities such as easy or fast walking or easy cycling may be more habitual in nature and not require the cognitive processing required by more structured and vigorous forms of exercise.

In conclusion, the present findings provide initial support for various psychometric aspects of the translated BREQ-2 scores pointing to a valid and reliable instrument for the study of behavioral regulations energizing and directing exercise behavior among Greek-speaking individuals. The present findings replicate among Greek-speaking exercise participants satisfactory psychometric evidence for the tenability of the 5-factor a priori latent structure of the translated BREQ-2 found among English-speaking and Spanish individuals. Further, the findings extend this evidence in support of the simplex pattern and nomological correlations of the Greek translation of BREQ-2 responses. The Greek BREQ-2 looks promising for the study of motivated exercise behavior among Greek-speaking exercise participants. Further research should take advantage of this instrument for the comprehensive study of the tenets of self-determination theory applied to motivated exercise behavior among Greek-speaking exercise participants.

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