Turkish Journal of Sport and Exercise /
Türk Spor ve Egzersiz Dergisi
http://dergipark.gov.tr/tsed
Year: 2024 - Volume: 26 – Issue 3- Pages: 428-433
10.15314/tsed. 1564647

Turkish Journal of Sport and Exercise
Türk Spor ve Egzersiz Dergisi
ISSN: 2147-5652
https://dergipark.org.tr/tr/pub/tsed

Adaptation of the Exercise Maintenance Motivation Scale to Turkish Culture

Mehmet ÖZTAŞ [1A], Abdullah KILCI [2B], Ali ERDOĞAN [3C],Erkan Faruk ŞİRİN [4D]

[1] *Çukurova University, Faculty of Sport Sciences, Department of Coaching Education, Adana, TÜRKİYE*
[2] *Tokat Gaziosmanpaşa University, Faculty of Sport Sciences, Department of Sport Management, Tokat, TÜRKİYE*
[3] *Karamanoğlu Mehmetbey, University, Faculty of Sport Sciences, Department of Sport Management, Karaman, TÜRKİYE*
[4] *Selcuk University, Faculty of Sport Sciences, Department of Sport Management, Konya, TÜRKİYE*
Address Correspondence to Abdullah KİLCİ: e-mail: abdullahkilci89@gmail.com

Conflicts of Interest: The author(s) has no conflict of interest to declare.

Ethical Statement: It is declared that scientific and ethical principles have been followed while carrying out and writing this study and that all the sources used have been properly cited.

(Date Of Received): 10.10.2024 (Date of Acceptance): 24.12.2024 (Date of Publication): 31.12.2024
A: Orcid ID: 0000-0003-4689-6490 B: Orcid ID: 0000-0002-5242-1582
C: Orcid ID: 0000-0001-8306-5683 D: Orcid ID: 0000-0002-6837-7758

Abstract

This study includes findings regarding reliability and validity values within the scope of adaptation of the exercise continuation motivation measure by Nam et al. (2023) into Turkish. Descriptive survey model was used as the research design. The scale was translated into Turkish with a team of six experts using the back-translation method. The study data were collected from 326 members of the Healthy Living Application and Research Center between the ages of 18 and 60 who voluntarily agreed to participate in the study. Confirmatory factor analysis (CFA) was used to prove the validity of the scale structure previously developed by Nam et al. (2023) for Turkish culture, and test-retest and internal consistency analyses were used for reliability. SPSS Amos package software was used for CFA. CFA validated the 30-item and 5-factor structure of the scale. Reliability analysis findings revealed that internal consistency and test-retest values were within the expected range. As a result, it was determined that the scale, adapted into Turkish with this study, is a valid and reliable measurement tool that can be used to measure the motivation to maintain exercise among the members of healthy living application and research centers in Turkey.

Keywords: Motivation, exercise maintenance, exercise maintenance motivation

Egzersizi Sürdürme Motivasyonu Ölçeğinin Türk Kültürüne Uyarlanması

Özet

Bu çalışmada, Nam ve ark., (2023) tarafından egzersizi sürdürme motivasyonu ölçmeğinin Türkçeye uyarlanması kapsamında, güvenirlik ve geçerlik değerleri ile ilgili bulguları içermektedir. Araştırma deseni olarak betimsel tarama modeli kullanılmıştır. Ölçek altı kişilik uzman ekip eşliğinde ve çevir-geri çevir yöntemi kullanılarak Türkçe'ye çevrilmiştir. Çalışma verisi, araştırmaya gönüllü katılmayı kabul eden 18 ile 60 yaş aralığında olan 326 sağlıklı yaşam uygulama ve araştırma merkezi üyesinden toplanmıştır. Ölçeğin daha önce Nam ve ark., (2023) tarafından ortaya çıkarılan yapısının Türk kültürü için geçerliliğinin ispatı için doğrulayıcı faktör analizi ; güvenirlik için test tekrar test ve iç tutarlılık analizleri kullanılmıştır. DFA için SPSS Amos paket programı kullanılmıştır. Gerçekleştirilen Doğrulayıcı Faktör Analizi sonucunda, ölçeğin 30 madde ve 5 alt boyutlu yapısı doğrulamıştır. Güvenirlik analizi bulguları, iç tutarlılık ve test tekrar test değerlerinin beklenen değer aralığında olduğunu göstermiştir. Sonuç olarak, Türkçe uyarlaması bu çalışma ile

gerçekleştirilen ölçeğin Türkiyedeki sağlıklı yaşam uygulama ve araştırma merkezleri üyelerinin egzersizi sürdürme motivasyonunu ölçmede kullanılabilecek geçerli ve güvenilir bir ölçme aracı olduğu tespit edilmiştir.

Anahtar Sözcükler: Motivasyon, Egzersiz sürdürme, Egzersiz sürdürme motivasyonu.

INTRODUCTION

Today, the understanding of healthy life is gaining great importance to increase the physical and psychological well-being of individuals. Exercise plays an essential role in this regard and helps individuals maintain their physical and mental health (7). However, maintaining individuals' motivation to exercise is a critical factor not only in the initial phase but also in the long term (12). Studies have found that between 40% and 65% of people who start exercise stop within the first year, regardless of whether they are guided or self-directed, and this trend holds across age and gender (2,11). Maintaining a consistent exercise routine in fitness facilities can be challenging and largely depends on individual factors (18). The motivation of individuals who exercise is a critical factor linked to both their success and setbacks in adopting healthier behaviors (18). As a result, identifying the underlying causes of exercise is imperative for fitness center members to maintain a consistent fitness regimen. Understanding the motivations of individuals exercising in fitness centers will contribute to the spread of a healthy living culture. Exercise motivation includes psychological and social factors that affect individuals' participation in physical activity (17). An accurate assessment of this motivation is essential to strengthen individuals' exercise habits and help them adopt a sustainable lifestyle. However, existing motivation scales are generally based on Western cultures and therefore their validity in Turkish culture is questionable (8). The values, beliefs, and social norms of Turkish society are among the significant factors affecting exercise motivation.

This study aimed to adapt the exercise maintenance motivation scale to Turkish culture in healthy living and fitness centers and to ensure that cultural characteristics are taken into consideration in this process. This adaptation will be a critical step to better understand the exercise motivation of Turkish individuals, increase the effectiveness of exercise programs, and develop awareness of healthy living. The study aims to contribute to the maintenance of individuals' exercise habits by presenting a motivation scale suitable for the needs and expectations of Turkish society.

METHOD

Before the study implementation, the necessary permissions were obtained from the Selcuk University Sports Sciences Scientific Research and Publication Ethics Committee (Decision no: E-40990478-050.99-852097). In addition, individual volunteer participation forms were collected from each participant.

Study group

In the study, 326 active healthy life application and research center members determined by convenience sampling method participated. The participants were members of the Çukurova University Healthy Living Application and Research Center and were between 18 and 60 years of age. Among the participants, 148 (45.4 %) were female and 178 (54.6 %) were male. For Confirmatory Factor Analysis (CFA) to be conducted with the data obtained from the members of the healthy living application and research center participating in the study, a sample size over 300 is considered sufficient (5,15,20). In our study, it was determined that the number of samples used for CFA to be performed was sufficient.

Data Collection Tools

In this study, the personal information form developed by the researchers and the Exercise Maintenance Motivation Scale, which is planned to be adapted to Turkish culture, were used as data collection tools.

Personal Information Form

It was developed by the researchers to collect age and gender data of the active healthy life application and research center members who participated in the study.

Exercise Maintenance Motivation Scale

In the study, the exercise maintenance motivation scale was used for the adaptation of which permission was obtained from the responsible author via e-mail. The scale was originally introduced to the literature by Nam et al., (19). The scale consists of 30 items. A 5-point Likert-type (1=Strongly Disagree, 5=Strongly Agree)

measurement approach was used for the responses of the scale. The scale consists of five sub-dimensions and 30 items. According to the reliability analysis results, Cronbach's alpha value was determined as .80 (19).

Scale Translation Process

In the process of translation of the Exercise Maintenance Motivation Scale into Turkish, the translation-back-translation method, which is frequently used in the literature, was used (4). In the translation phase of the scale, a commission consisting of three academicians with a PhD degree in sports sciences and a good command of English, and three English Language Science experts was utilized. The original English form of the scale was translated into Turkish by two English linguists and an academic in the field of sports sciences. When the translations obtained were analyzed, common points were identified and no significant differences were found in the translation of any item. The resulting Turkish translation was sent to two other academics in the field of sports sciences and an English language expert. The translations from the experts were checked and no differences were found. The items in the original form of the scale and the translations made by the experts were determined by the commission members to be similar to each other and no additions or deletions were made. The translated scale was presented to 20 healthy living application and research center members and they were asked to examine the scale items in terms of comprehensibility. Sports center members stated that the items were clear and that there were no items that needed to be corrected. The items were finalized and the data collection process started.

Data Collection Process

The data required for the validity and reliability analyses of the scale were collected between 01 October and 07 October 2024 at Adana Çukurova University Healthy Living Application and Research Center. Face-to-face interviews were conducted with the participants and data were collected from the members of the Healthy Living Application and Research Center who voluntarily agreed to participate. The data were collected by sharing the Google form link with the participants and they were given 20 minutes to answer the questionnaire.

Data Analysis

SPSS 27.0 package software and AMOS 16 software were employed for the data analysis. For descriptive analyses, standard deviation and arithmetic mean values were examined, while kurtosis and skewness values were examined to check the distribution normality of the data. Since the scale used in the study had previously undergone EFA, CFA was applied in this study. Distribution normality was checked before the analysis of the data. Distribution normality was checked with kurtosis and skewness values and expected to be between +2.0 and -2.0 (14). The findings show that the values are within the specified range and the data was distributed normally.

After the validity analysis, internal consistency coefficient and test-retest methods were used to check whether the scale was reliable. The criteria expressed by Alpar (1) were used for the internal consistency coefficient. In the reliability method examined with Cronbach's alpha value, values between 0.80 and 1.00 indicate very high reliability, values between 0.80 and 0.60 indicate that the scale is highly reliable, values between 0.60 and 0.40 indicate low reliability, and values between 0.40 and 0.00 indicate that the scale is not reliable (1). The second method used to test the reliability of the scale is the test-retest. The researchers collected data twice at three-week (21-day) intervals from 60 healthy living and fitness center members who did not take part in the CFA phase. The test-retest values calculated by Pearson moment correlation analysis are .70 and above, indicating that the scale is reliable (16).

FINDINGS

Findings Regarding Construct Validity

After the data obtained from the members of the Healthy Living Application and Research Center were computerized, CFA was performed using the AMOS software. CFA is a method that enables the verification of the previously determined or existing structure in scale development and validity studies (3), and is applied to determine whether the data obtained by the researchers are compatible with the pre-constructed factor status (9). Although different CFA fit indices are used in the literature, in this study, the commonly preferred Chi-Square Goodness, RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index), GFI (Goodness of Fit Index), IFI (Incremental Fit Index) and SRMR fit index values were examined (13).

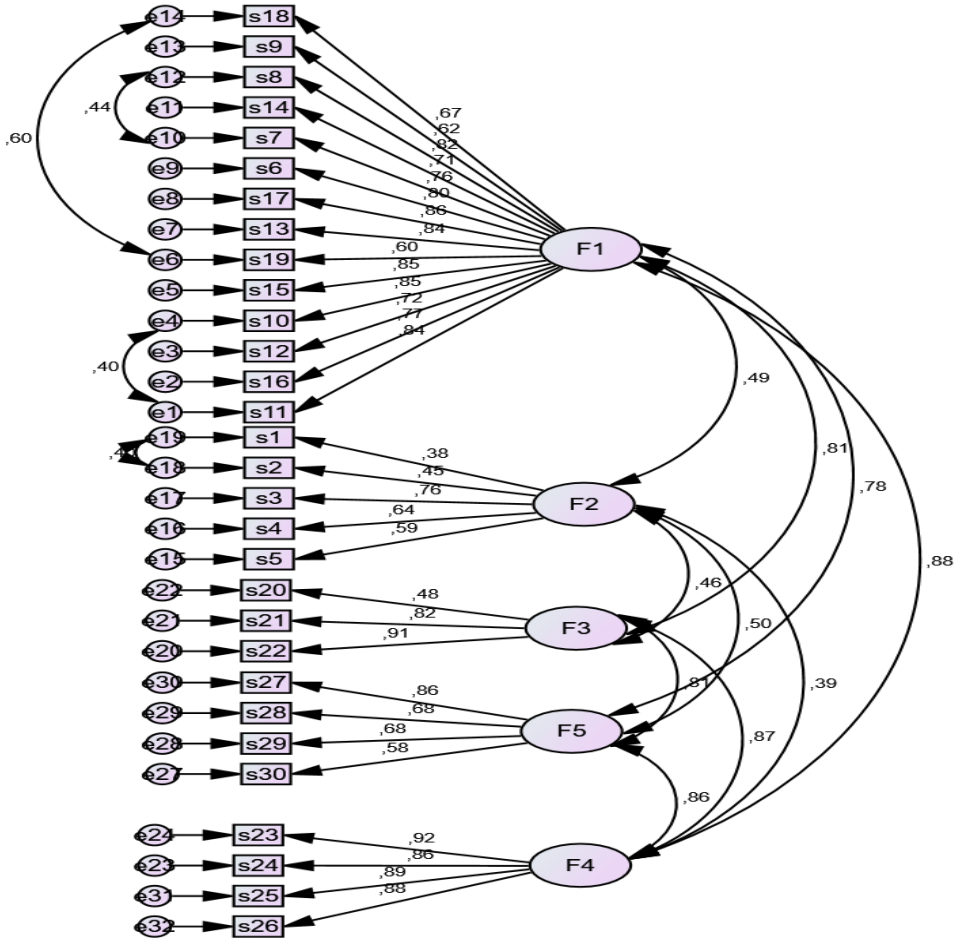

Figure 1: Path Diagram of the Exercise Maintenance Motivation Scale

In order to make the analysis more compatible, a covariance connection was established between the error terms e10-e12, e6-e14, e18-e19 and more compatible results were obtained in the relevant values. Covariance assignment can be associated with the error terms of the items that predict the same factor aiming to measure the same feature (21).

As can be seen in Figure 1, item factor loads ranged from 0.38 to 0.92. It is stated that items with a factor loading of 0.30 and above are good items (6). In light of the findings obtained, it was determined that the item factor loadings of the Exercise Maintenance Motivation Scale are sufficient. It is found that the scale can be adapted into Turkish with 30 items.

Table 1. Confirmatory factor analysis fit values of the Exercise Maintenance Motivation Scale

Model Fit Index	Accepted Perfect Range	Range of Acceptable Fit values	Obtained Values of the Scale
X2/df	$0<\chi^2/sd<3$	$3<\chi^2/sd<5$	3.28
RMSEA	0.00<RMSEA<0.05	0.00<RMSEA<0.05	0,080
SMRM	0.00 ≤ SRMR <, 0.05	0.05 ≤ SRMR <, 0.10	0.074
CFI	0.95<GFI<1.00	0.90<GFI<0.95	0.90
IFI	0.95<GFI<1.00	0.90<GFI<0.95	0.90

As can be seen in Table 1, the structure of the scale was confirmed with the data obtained according to the cut-off values in the literature. Accordingly, $\chi 2$ /sd, SRMR, CFI, IFI, and RMSEA values were acceptable. No multicollinearity problem was detected among the dimensions.

Reliability Analyses

Cronbach's alpha (α) and test-retest coefficients were calculated to test the internal reliability of the 30-item and 5-subdimensional structure of the Exercise Maintenance Motivation Scale.

Table 2. Confirmation of the reliability of the gamer ıdentity scale with CR, AVE, ınternal consistency coefficient and test-retest methods

CompositeReliability (CR)		AverageVarianceExtracted (AVE)	Test-Retest Method	Internal Consistency Coefficient
Gamer Identity Scale	0.96	0.57	0.86	0.95

The reliability study of the Exercise Maintenance Motivation Scale was examined using Cronbach's alpha coefficient and test-retest method. Cronbach's Alpha coefficient of the scale was found to be .95. The test-retest reliability of the scale was obtained by administering it to 60 healthy living application and research center members at three-week intervals. As a result of the test-retest reliability study, it was determined that there was a high, positive, and significant correlation between the first and second administration of the scale.

When Table 5 is examined, it is seen that the AVE values are 0.64 for the personality traits scale of E-sports players. CR values are 0.94 for the personality traits scale of E-sports players. Considering that scales with a reliability coefficient of 0.70 and above are considered reliable in scale development and adaptation studies (22,23,24,25), it can be said that the internal consistency, AVE, and CR values of the E-sports players' personality traits scale are sufficient.

DISCUSSION AND CONCLUSION

This study aimed to adapt the Exercise Maintenance Motivation Scale developed by Nam et al., (19) to Turkish culture. Within the scope of the validity study of the scale, CFA was applied to test the appropriateness of the 30-item and 5-subdimensional structure of the scale to Turkish culture. After the conformity of the scale was determined by CFA, internal consistency and test-retest analyses were used to test the reliability of the scale.

CFA findings showed that the CFI value of the model was .90, the RMSEA value was .080, the SRMR value was 0.074, and the X2/df value was 3.28. The findings revealed that the CFA values were considered adequate and in line with the original form (19). In our study, internal consistency coefficient and test-retest methods were used for the reliability analysis of the Exercise Maintenance Motivation Scale. The internal consistency coefficient was found to be high at .95. The internal consistency values in the original form of the scale were in parallel with the findings of our study. The reliability of the scale was confirmed with the values (0.86) obtained in the test-retest method, which was used in the Turkish adaptation, although it was not used in the original form of the scale (16).

Although the values obtained in our study are within acceptable ranges, there are some limitations in our study. The first limitation is that the data obtained for the measurement tool are collected only from the members of the Healthy Living Application and Sports Center operating in Adana. In future studies, it is recommended to select a sample covering Turkey in general. The second limitation is that the data were collected from a single sample group. In future studies, it is recommended to test the validity and reliability of the measurement tool by collecting data from healthy living and sports centers operating on different exercises and sports.

REFERENCES

1. Alpar, R. Spor bilimlerinde uygulamalı istatistik. Nobel yayınları.2006,57-60.
2. Annesi, J. J. Effects of a cognitive behavior altreatment package on exercise attendance and drop out in fitness centers. European Journal of Sport Science, 2003;3(2), 1–16. doi:10.1080/17461390300073206.
3. Bayram, N. Yapısal Eşitlik Modellemesine Giriş AMOS Uygulamaları. Ezgi Kitabevi.2010;103-105.
4. Brislin, R. W. A culture general assimilator: Preparation for various types of sojourns. International Journal of Intercultural Relations, 1986;10(2), 215-234. https://doi.org/10.1016/0147- 1767(86)90007-6
5. Brown, T.A. Confirmatory factor analysis for applied research. TheGuilfordPress.2006.
6. Büyüköztürk, Ş. Spss veri analizi el kitabı. Pegem A Yayıncılık, 2007.
7. Crespo CJ, Keteyian, SJ, Heath GW, Sempos, CT. Leisure-time physical activity among US adults. Arch Intern Med. 1996; 156:93–98.
8. Doğan T, Totan T, Sapmaz F. The role of self-esteem, psychological well-being, emotional self-efficacy, andaffectbalance on happiness: A path model. Euro Sci J, 2013; 9(20), 31-42.
9. Meydan, C. H., & Şeşen, H. Yapısal eşitlik modellemesi ve AMOS uygulamaları. Detay Yayıncılık, 2011.
10. Nam, T. T., Dadras, O., Le, C. N., Phu, D. H., Tin, P. T., An, T. D., ... &Suwanbamrung, C. Initial construction of the exercise mainten an cemotivation scale: A mixed-methodstudy. Journal of Human Earth andFuture, 2023; 4(4), 453-471.

11. Rand, M., Goyder, E., Norman, P., &Womack, R. Why do new members stop attending health and fitness venues? The importance of developing frequent and stable attendance behaviour. Psychology of Sport and Exercise, 2020; 51(101771). doi:10.1016/j.psychsport.2020.101771.
12. Ryan, R. M. ve Deci E. L. Self-determination theory and the facilitation of intrinsic motivation, social development, and wellbeing. American Psychologist, 2000; 55, 68-78.
13. Schermelleh-Engel, K. & Moosbrugger, H. Models: Tests of Significance and Descriptive, Psychological Research Online, 2003;8(2).
14. Tabachnick, B. G, Fidell, L. S., ve Ullman, J. B. Using multivariate statistics. Boston, MA: Pearson, 2007;481-498.
15. Tabachnick, B. G.,&Fidell, L. S. Using multivaria testatistics 2013; (6th ed.), Allynand Bacon.
16. Tavşancıl, E. Tutumların ölçülmesi ve spss ile veri analizi. Ankara: Nobel Yayın Dağıtım, 2010.
17. Teixeira PJ, Carraça EV, Markland D, Silva MN, Ryan RM. Exercise, physicalactivity, and self-determination theory: a systematic review. International Journal of Behavioral Nutrition and Physical Activity. 2012: 9(1), 78-108.
18. Yang, Y. J. An Overview of Current Physical Activity Recommendations in PrimaryCare. KoreanJournal of FamilyMedicine, 2019; 40(3), 135–142. doi:10.4082/kjfm.19.0038.
19. Nam, T. T., Dadras, O., Le, C. N., Phu, D. H., Tin, P. T., An, T. D., ... & Suwanbamrung, C. Initial construction of the exercise maintenance motivation scale: A mixed-method study. Journal of Human Earth and Future, 2023; 4(4), 453-471.
20. Yong, A. G., &Pearce, S. A beginner's guide to factor analysis: Focusing on exploratory factor analysis. Tutorials in Quantitative Methods for Psychology, 2013; 9(2), 79-94. https://doi.org/10.20982/tqmp.09.2.p079
21. Meydan, C. H., Şeşen, H. (2011). Yapısal eşitlik modellemesi ve AMOS uygulamaları. Detay Yayıncılık.
22. Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. Biomet-rics, 33, 159-174
23. Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation in measure of personality and social psychological attitudes. San Diego: California Academic Press.
24. Fraenkel, J.R., Wallend, N.E. & Hyun, H.H. (2012). How to design and evaluate research in education. New York: McGraw Hill. Gadzella, B. M. (2001). Confirmatory factor analysis and ınternal consistency of the student-life stress ınventory. Journal of Instructional Psychology, 28, 84-94.
25. Nunnaly, J. & Bernstein, I. (1994). Psychometric Theory. New York: McGraw-Hill Press