

The Validity and Reliability Study of the Turkish Form of Physical Education Marginalization and Isolation Scale (PE-MAIS)

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Research Article

Abstract

This study aims to conduct the validation and reliability study of the Turkish form of PE-MAIS that is developed to assess the isolation and marginalization perceptions of physical education (PE) teachers. 211 physical education and sports teachers working at different education stages participated in the study. Of the participants, 24.6% were females (n=52), 75.4% were males (n=159). The age mean of the teachers was found to be 39.69±11.38. It was found that the teachers had teaching experiences for 15.90±13.28 years on average. PE-MAIS, developed by Gaudreault, Richards, and Woods (2017), was used to collect data. The original scale was translated into Turkish by using the back-translation method. Data were analyzed in SPSS by using Exploratory Factor Analysis (EFA) and in AMOS by using Confirmatory Factor Analysis (CFA). The factor structure was tested with EFA while the two-factor model was tested with CFA. The internal consistency coefficient was calculated with Cronbach's alpha value. Both EFA and CFA results revealed that the Turkish form of the scale was two-dimensional similar to the original. According to EFA results, it was found that the two-factor structure explained 51% of the total variances. The factor loadings were between .63 and .72. The CFA results showed that the two-factor model had acceptable fit indices. Consequently, it can be said that the Turkish form of PE-MAIS is a valid and reliable scale that can measure marginalization and isolation physical education and sports teachers feel in their instruction environment.

Keywords: Physical education, Scale adaptation, Teacher, Validity, Reliability

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Beden Eğitimi-Ötekileştirme ve Soyutlanma (BEÖSÖ) Ölçeğinin Türkçe Formunun Geçerlik ve Güvenirlik Çalışması

Öz

Bu çalışmanın amacı, beden eğitimi öğretmenlerinin algılanan ötekileştirme ve soyutlanma durumunu ölçen bir araç olan PE-MAIS için Türkçe versiyonu (BEÖSÖ) uyarlamasının geçerlilik ve güvenilirlik çalışmasını yapmaktır. Çalışmaya, farklı kademelerde beden eğitimi ve spor öğretmenliği yapan 211 kişi katılmıştır. Katılımcıların %24.6'sı kadın (n=52), %75.4'ü erkektir (n=159). Öğretmenlerin yaş ortalamaları 39.69±11.38, öğretmenlik tecrübeleri 15.90±13.28 yıldır. Veri toplama aracı olarak, Gaudreault, Richards ve Woods (2017) tarafından geliştirilen BEÖSÖ ölçeği kullanılmıştır. Orijinal ölçek çeviri-geri çeviri tekniği ile Türkçeye çevrilmiştir. Toplanan veriler, SPSS programında Açıklayıcı Faktör Analizi (AFA), AMOS programında Doğrulamalı Faktör Analizi (DFA) kullanılarak analiz edilmiştir. Ölçeğin faktör yapısı AFA ile test edilirken, aynı veriler üzerinden iki boyutlu kuramsal model DFA kullanılarak da analiz edilmiştir. Ölçeğin iç tutarlılık katsayısı Cronbach's alfa değeri alınarak hesaplanmıştır. Hem AFA hem DFA sonuçları, ölçeğin orijinalindeki gibi iki faktörlü bir yapıya sahip olduğunu göstermiştir. AFA sonuçlarına göre, ölçeğe ait iki alt boyutun toplam varyansın yaklaşık olarak %51'ini açıkladığı tespit edilmiştir. Faktör yükleri .63 ile .72 arasındadır. DFA sonuçları, iki faktörlü kuramsal modele ilişkin verilerin kabul edilebilir uyuma sahip olduğunu göstermiştir. DFA sonucunda, tüm parametre tahminlerinin istatistiksel olarak anlamlı olduğu tespit edilmiştir. Sonuç olarak, BEÖS ölçeğinin Türkçe formunun Türk beden eğitimi ve spor öğretmenlerinin okul ortamında hissettiği ötekileştirme ve soyutlanma duygularını ölçebilecek geçerli ve güvenilir bir ölçek olduğu söylenebilir. Ancak ölçeğin faktör yapısının beden eğitimi ve spor öğretmenlerinden oluşan farklı bir grupta doğrulanması gerekmektedir.

Anahtar sözcükler: *Beden eğitimi, Ölçek uyarlama, Öğretmen, Geçerlik, Güvenirlik*

Introduction

Lawson's (1983a, 1983b, 1986, 1988, 1989, 1991) theory of occupational socialization is a theoretical perspective directing researchers to explore how teacher candidates learn to teach and why PE teachers teach (Curtner-Smith, 2001). Lawson (1986) defined occupational socialization theory as "all kinds of socialization that initially influence persons to enter the field of physical education and that later are responsible for their perceptions and actions as teacher educators and teachers." Lawson (1983 a, b) observed three different socialization forms including acculturation, professional, and organizational while it is suggested in Lawson (1986) that five kinds of socialization including societal, sport, professional, organizational, and bureaucratic could comprise occupational socialization. According to Schempp and Graber (1992) teachers' socialization is a dialectical and interactive process, which includes "recognizing not just the stages that prospective teachers go through but also how the dynamics of the dialectic influence the construction of beliefs, behaviors, and professional orientations." Socialization process includes the pressure of alteration, leaving previous behaviors and beliefs patterns, and acceptance of new professional norms of roles from socialization sources (Edgar and Warren, 1969).

Some studies have revealed that PE teachers felt isolated and marginalized in the school environment (Curtner-Smith, 2001; Giroux, 1981; Hendry, 1975; Locke, 1974, Evans and Davies, 1988; O'Sullivan, 1989; Smyth, 1992). PE teachers may have a feeling of

loneliness because of teaching outside the school building and with different clothes than others, the grouping of the students, and time allocated (Lawson, 1984). The studies conducted with the perspective of occupational socialization theory have reported that physical education has a marginalized status in the educational environment (Kougioumtzis, Patriksson, and Stråhlman 2011; Sparkes, Templin, and Schempp, 1993; Whipp, Tan, and Yeo, 2007; Parker and Curtner-Smith, 2017) and additionally PE teachers feel isolated from other individuals (Curtner-Smith, 2001; Stroot and Ko, 2006). The marginalized teacher is between the positions to have a social status as a legitimate teacher and to withhold this profession (Richards, Templin, and Graber, 2014).

Various problems faced, the perspective and attitudes of parents, managers, and other teachers against PE lessons can cause PE teachers to move away from the social context in school and to feel worthless and different. Richards, Templin, and Graber (2014) have stated that physical education is a marginal lesson and PE teachers are marginal educators in the school environment. Research results have shown that PE teachers felt the impacts of marginalization because they received explicit and inexplicit messages that their lessons are unimportant (Eldar, Nabel, Schechter, Talmor, & Mazin, 2003; O'Sullivan, 1989; Templin, Sparkes, Grant, & Schempp, 1994). These attitudes and behaviors can cause isolation of PE teachers from their colleagues and detrimental results for their job performances.

It is critical to measure teachers' the feeling of Isolation and marginalization to take precautions for negative emotions caused by problems in the school environment. The study will contribute to literature because there are no measurements to assess the isolation and marginalization feelings of PE teachers. This study aims to conduct the validation and reliability study of the Turkish form of PE-MAIS developed by Gaudreault, Richards, and Woods (2017).

Method

Participants

211 physical education and sports teachers working in different education stages participated in the study. Of the participants, 24.6% were females (n=52), 75.4% were males (n=159). The age mean of the teachers was found to be 39.69 ± 11.38 . It was found that the teachers had teaching experiences for 15.90 ± 13.28 years on average. Of the participants, 11.8% reported that they carried on a master program (n=25) while 12.3% stated that they completed a master program. There were six PE teachers who carried on a Ph.D. program as four teachers reported that they completed a Ph.D. program. Of the participants, 71.1% reported they did not involve any postgraduate programs (n=150).

Measurement

Physical Education-Marginalization and Isolation Scale (PE-MAIS): Gaudreault, Richards, and Woods (2017) developed the original scale with the participation of PE teachers. The scale has two subscales including marginalization and isolation with five

items for each. The scale is a Likert type, and the items are rated between 1 and 7. The internal consistency coefficients for marginalization and isolation were found to be 0.79 and 0.89, respectively.

Translation Process

Beaton et al. (2000) suggested a process of self-report measures for cross-cultural adaptation including the steps of translation, synthesis, back translation, expert committee evaluation, pretesting, and submitting the measure to the developers or coordination committee for evaluation. Since there was no coordination committee and developer evaluation in this study, five basic steps were followed.

Two translators, one was informed and aware of the concepts (T1), and another was neither informed nor aware of the concepts (T2), translated the items into Turkish (Stage 1). Two academicians having studies into sports sciences examined both translations and created a synthesis form (Stage 2). Two academicians, both were neither informed nor aware of the concepts, translated the synthesis form (T12) into English (Stage 3). Five academicians, working in the field of sports sciences, knowing English and Turkish very well, evaluated the T1, T2, T12, BT1, and BT2 versions regarding equivalences of semantic, idiomatic, experiential, and conceptual (Stage 4). After considering the suggestion and corrections, the Turkish form of the scale was ready for the pretesting (Stage 5).

Data Collection

211 physical education and sports teachers working in different education stages responded to the items on an online form. The volunteer teachers reached the link and rated the items. In the test-retest process, 30 PE teachers participated, and there were seven days between the collections of the data for this process. The Turkish form of the scale was sent to six expert having PhD degree in physical education and sports field for the evaluation of the items whether they were proper to assess isolation and marginalization in physical education. The experts rated the items between 1 and 4.

Analysis

The data were analyzed using SPSS and AMOS programs. Data were analyzed in SPSS by using Exploratory Factor Analysis (EFA) and in AMOS by using Confirmatory Factor Analysis (CFA). The factor structure was tested with EFA while the two-factor model was tested with CFA. The internal consistency coefficient was calculated with Cronbach's alpha value. The demographical information and features were analyzed by using descriptive statistics. The independent t-test was used to analyze gender difference while the Pearson correlation was used for both relation and test-retest reliability analysis. The Turkish form of the inventory was sent to six experts to be rated the extent to which items were relevant to isolation and marginalization in physical education. Six experts in sport sciences rated the items between 1 (not relevant), 2 (somewhat relevant), 3 (quite relevant), and 4 (highly relevant). Content validity indexes were calculated by the using universal agreement calculation method.

Results

The results for the scale structure

Table 1. Scale and item level content validity indexes (S-CVI and I-CVI)

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number of Agreement	I-CVI
1	4	4	4	4	4	4	6	1
2	4	3	4	3	4	4	6	1
3	3	4	3	4	4	3	6	1
4	4	3	4	3	2	4	5	0.83
5	3	4	4	4	4	4	6	1
6	3	3	3	3	4	3	6	1
7	3	3	4	3	4	3	6	1
8	2	4	3	4	3	3	5	0.83
9	4	3	3	3	3	2	5	0.83
10	4	4	2	4	3	4	5	0.83
							S-CVI/Ave	0.93
							Number of Agreement	6
							S-CVI/UA	0.6
Proportion relevant	.90	1.0	.90	1.0	.90	.90	S-CVI/Ave	0.93

The indexes obtained from the expert's rating between one and four whether the items were proper to measure marginalization and isolation perceptions of PE teachers have been given in table 1. Item level content validity (I-CVI) indexes were observed to be between 0.83-1.00. The average score of item content validity indexes (S-CVI/Ave) was 0.93. S-CVI/UA (universal agreement) was 0.6. I-CVI refers to content validity index for each item and is calculated by dividing the number of agreements by the number of experts (i.e., for item 4, $5/6=0.83333$). S-CVI refers to the content validity index for the whole scale and can be calculated both universal agreement calculation (S-CVI/UA) and average method (S-CVI/Ave). S-CVI/UA is calculated by dividing the number of agreements by the number of items while S-CVI/Ave is calculated by the average of the sum of the item content indexes ($1+1+1+.83+1+1+1+.83+.83+.83+.83/10=.93$) or by the average percentage of the agreement of each expert ($.90+1+.90+1+.90+.90/6=.93$). Total agreement is related to the expert's rating over or under three. The number of agreements is calculated by the sum of the number of experts who rate three points and over (see Polit and Beck, 2006).

Table 2 shows the factor structure, factor loadings, internal consistency coefficients, test-retest reliability, and CFA fit indices after EFA and CFA. KMO and Bartlett's Test of Sphericity values were examined to decide whether the data was proper for factor analysis. KMO was found to be .69 and Bartlett's Test of Sphericity was statistically significant ($\chi^2=617.508$, $df=45$, $p<0.0001$). According to EFA results, the factor loadings of marginalization ranged between 0.64 and 0.72 while those of isolation were between 0.53 and 0.71. The CFA revealed that the regression coefficients for the items in marginalization (0.51 and 0.73) and isolation (0.17 and 0.95) were significant.

Table 2. The factor structure, factor loadings, internal consistency coefficients, test-retest reliability, and CFA fit indices

Items	EFA			CFA	
	Factor Loadings			Factor Loadings	
	Marginalization	Isolation	Marginalization	Isolation	Isolation
Item 1	.72		.58		
Item 2	.70		.51		
Item 3	.64		.73		
Item 4	.70		.57		
Item 5	.67		.58		
Item 6		.63			.76
Item 7		.65			.95
Item 8		.63			.30
Item 9		.68			.17
Item 10		.70			.27

Total Variance Explained					
Factor	Eugene	Variance %	KMO	Bartlett's Test of Sphericity	
Marginalization	3.041	30.405	.69	.000	
Isolation	2.036	20.355			

Factor	X.	S.D.	Skew.	a	Test retest	Factor-Factor Correlations		Factor-Factor Covariance	
Marginalization	3.06	1.31	.46	.74	.96	1	.18**	1	.41**
Isolation	2.70	1.11	.26	.70		.18**	1	.41**	1

Fit indices	x ²	df	x ² /df	GFI	TLI	CFI	SRMR	RMSEA
		75.26	29	2.59	.93	.87	.92	.07

The Eugene value for marginalization in the whole scale was 3.041, and the contribution to overall variance was 30.405%. The Eugene value for isolation in the whole scale was 2.036, and the contribution to overall variance was 20.355%. The total variance explained was 50.740%. The test-retest value was found to be 0.96. The internal consistency coefficient for marginalization was 0.74 while the one for isolation was 0.70. The correlation between marginalization and isolation was 0.18, and the covariance value was 0.41. When fit indices were examined after CFA, the scale revealed a two-factor structure like the original scale (x²=75.26, x²/df=2.59, RMSEA=.07, SRMR=.07, CFI=.93).

Table 3. The difference between the responses of the physical education and sports teachers whether the PE teachers are qualitatively and quantitatively adequate regarding marginalization and isolation

	Subscales	Yes	No	t	p
		X±sd	X±sd		
Do you think that physical education and sports teachers are adequate in terms of quality in Turkey?	Marginalization	2.81±1.33	3.15±1.30	-1.670	.096
	Isolation	2.19±0.92	2.88±1.12	-4.095	.000**
Do you think that physical education and sports teachers are adequate in terms of quantity in Turkey?	Marginalization	3.29±1.41	2.33±1.05	1.463	.145
	Isolation	2.98±1.27	2.83±1.11	-2.873	.004**

**p<0.05

The teachers were asked to respond as yes or no to the question whether physical education and sports teachers were adequate regarding quantity and quality. The questions related to quality and quantity did not vary in marginalization. There were significant differences between yes and no answers in isolation in favor of the teachers responded as yes to quality question (p<0.05, t=-4.095) while the teachers answered as yes to quantity question reported higher scores (p<0.05, t=-2.873).

The results for the demographical variables

Table 4. The relationships between demographical variables, marginalization, and isolation

	X±sd	1	2	3	4	5	6	7	8
1. Age	39.69±11.38	1	.948**	-.243**	.043	.145*	.189**	-.227**	.274**
2. The year of teaching	15.90±13.28		1	-.236**	.059	.140*	.167*	-.295**	.299**
3. Postgraduate education	.52±.94			1	-.018	.033	-.081	.189*	.043
4. The importance of the PE lessons	1.98±.11				1	.020	.020	.092	.018
5. The Quality of the PE teachers	1.73±.44					1	.188**	.115	.273**
6. The Quantity of the PE teachers	1.73±.44						1	-.101	.195**
7. Marginalization	3.06±1.31							1	.187**
8. Isolation	2.70±1.11								1

n=211, postgraduate=0, 1, 2, 3, 4, *p<*0.05, p<0.01, for quality and quantity yes=1, no=2

The vast majority of PE teachers reported that not given sufficient importance to physical education and sports lessons in Turkey (n=208, %98.6). Most of the PE teachers stated that PE teachers were not adequate regarding quality and quantity (for both, n=156, %73.9). The age mean negatively correlated with marginalization (r=-0.227, p<0.01) and positively with isolation (r=0.274, p<0.01). The results for the teaching year were the same as the relationship between age and the subscales of marginalization (r=-0.295, p<0.01) and isolation (r=0.299, p<0.01). There was a positive correlation between the postgraduate level and marginalization (r=.189, p<0.05). Isolation positively correlated with the answers related to quality (r=.273, p<0.05) and quantity questions (r=.195, p<0.05).

Table 5. Gender differences in marginalization and isolation

	Female			Male			t	p
	n	\bar{X}	SD	n	\bar{X}	sd		
Marginalization	52	3.08	1.40	159	3.06	1.28	.127	.899
Isolation	52	2.34	1.09	159	2.82	1.09	-2.731	.008**

**p<0.05

Table 5 shows the gender differences regarding marginalization and isolation. No significant differences were found between genders regarding marginalization while females reported higher scores than males in isolation ($t=-2.731$, $p<0.01$).

Discussion and Conclusion

This study aimed to translate PE-MAIS, developed to measure marginalization and isolation perceptions of PE teachers, into Turkish and to conduct the validation and reliability analyses. The items of the Turkish version of the PE-MAIS were translated into Turkish, and the academicians in the physical education field evaluated the items regarding content validity. After the expert opinions, the authors designed the last version of the scale and delivered it to the PE teachers with an online form. The factor structure was analyzed with EFA and CFA.

After the rating of six experts, S-CVI and I-CVI were calculated. I-CVI ranged between 0.83 and 1.00. S-CVI/UA was 0.6 while S-CVI/Ave was 0.93. According to these results, the scale had valid content indexes (Lynn, 1986; Davis, 1992).

KMO (0.69) and Bartlett's test of sphericity scores ($\chi^2=617.508$, $df=45$, $p<0.0001$), calculated before the factor analysis, showed that the data was proper for the analysis. The EFA revealed that factor loadings for marginalization ranged between 0.64 and 0.72, for isolation ranged between 0.63 and 0.70. Even EFA was used to analyze the factor structure, based on the statement that CFA is more proper method to test the previously explored and theory-based models (Fabrigar, Wegener, MacCallum, and Strahan, 1999; Hurley et., 1997; Thompson, 2007; Kline, 2015), the authors run the CFA with the same data. The item regression coefficients ranged between 0.51 and 0.73 for marginalization and 0.17 and 0.95 for isolation in CFA. The Eugene value for marginalization in the whole scale was 3.041, and the contribution to overall variance was 30.405%. The Eugene value for isolation in the wholescale was 2.036 and the contribution to overall variance was 20.355%. The total variance explained was 50.740%. The test-retest value was found to be 0.96. The internal consistency coefficient for marginalization was 0.74 while the one for isolation was 0.70. The correlation between marginalization and isolation was 0.18, and the covariance value was 0.41. It was confirmed that the scale had a two-factor structure like the original scale ($\chi^2=75.26$, $\chi^2/df=2.59$, $RMSEA=.07$, $SRMR=.07$, $CFI=.93$).

It is possible that the attitudes of parents, managers, and the other teachers towards PE lessons and teachers can influence the perceptions of PE teachers both positively and negatively. The problems PE teachers face in the school environment can cause

detrimental feelings or emotions such as marginalization, isolation, or burnout. The attitudes can be effective in preventing negative emotions in the workplace of PE teachers. There many research into attitudes towards PE lessons, teachers, and profession in Turkish literature (Deliceoğlu, 2018; Kalemoglu-Varol et al., 2016; Aydoğan et al., 2016; Keskin, Öncü and Kılıç, 2016; Karahan and Kuru, 2015; Alemdağ, Öncü and Sakallıoğlu, 2014; Haslofça, 2014, Yanık and Çamlıyer, 2013; Öncü and Cihan, 2013; Kır, 2012; Abbasoğlu, 2011; Ünlü, 2011; Öncü and Güven, 2011; Güllü and Güçlü, 2009; Ceylan, 2006; Demirhan and Altay, 2001; Özer and Aktop, 2003), however there are no studies examining the problems of PE teachers in the perspective of the marginalization and isolation perceptions. These attitudes and behaviors may have a negative impact on the job performance of PE teachers. Hence, Yu (2017) revealed that excessive external pressure, inadequacy in wages, lack of psychological counseling, the negative effects of the students and environment might lead PE teachers to burnout. Bartholomew et al. (2014) stated that work pressure, thwarting the psychological needs such as autonomy, competence, and relatedness could lead to burnout. The attitudes, approaches, and behaviors of the different social groups towards the PE lesson and teacher can affect the performance of the teachers, and they can create a perception of marginalization and isolation. Gaudreault, Richards, and Woods (2017) reported measurement invariance for teaching level.

This study is limited to factor structure and gender differences of The Turkish form of The PE-MAIS. Future studies should include convergent and divergent validity. The teaching level of the teacher should be examined in terms of isolation and marginalization.

In this study, PE teachers rated the items between 1 and 7 and displayed the perceptions of marginalization and isolation under the moderate level. Gaudreault, Richards, and Woods (2017) reported that PE teachers had a moderate level of marginalization and isolation. Apart from the attitudes and approaches towards the physical education course and teacher, the characteristics of the environment in which the teacher is located can have an impact on the perception of marginalization and isolation. Kougioumtzis et al. (2011) state that PE teachers' experiences are affected negatively when they feel marginalized and isolated. These perceptions can be important determinants of PE teachers' performances. Consequently, it can be stated that the Turkish form of PE-MAIS is a valid and reliable scale that can measure marginalization and isolation that physical education and sports teachers feel in their instruction environment.

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Kaynaklar

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