

TURKISH ADAPTATION OF SPIRAL OF SILENCE SCALE: THE STUDY OF RELIABILITY AND VALIDITY

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ABSTRACT

People need a reconciliation on their attitudes, behaviors, values and aims, and the conciliation happens when it is public. In this context, the spiral of silence scale is a scale that measures the power and effectiveness of the public. The aim of the study is to measure the validity and reliability of the spiral of silence scale effective study in Turkey. In this study, 421 health employees working in Hospitals in Ankara were interviewed. The scale has three sub-dimensions; namely, avoidance of expressing opinions, participation in the expressed opinion and the fear of being excluded sub-dimensions. The total variance of the three sub-dimensions was 74.20% and the Cronbach's alpha reliability coefficient was 0.64. According to our results, Cronbach's alpha reliability coefficients are acceptable for the Turkish version of the scale and the subscales. The results on the EFA and the CFA performed for the construct validity support the three-factor model as the model of the original scale. Confirmatory factor analysis results were found to be between good fit and acceptable variables. According to the correlation analysis, there are significant relationships among the scale and the subscales. The significance of correlation coefficient values found among the scale and the subscales is interpreted as that the subscales measure similar constructs. At the end of the statistical analysis, it is concluded that the three-dimensional structure of the original scale is appropriate for Turkish culture.

Key Words

Avoidance, Exclusion, Participation Expressed Opinion, Public Opinion, Social Pressure

SUSKUNLUK SARMALI ÖLÇEĞİ'NİN TÜRKÇEYE UYARLANMASI: GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI

ÖZ

İnsanlar tutum, davranış, değer ve amaçları konusunda bir uzlaşma ihtiyacı duyar ve uzlaşım da kamuoyu şeklinde oluşur. Bu bağlamda suskunluk sarmalı kamuoyunun gücünü ve etkinliğini ölçen bir ölçektir. Çalışmanın amacı Suskunluk Sarmalı Ölçeği'nin Türkiye'de geçerlik ve güvenilirlik çalışmasını yapmaktır. Ölçeğin görüş ifade etmekten kaçınma, ifade edilen görüşe katılım ve dışlanma korkusu alt boyutu olmak üzere üç alt boyutu vardır. Üç alt boyutunun toplam varyansı açıklama oranı %74.20 ve Cronbach alpha güvenilirlik katsayısı 0.64'tür. Doğrulayıcı faktör analizi sonuçları ise iyi uyum ve kabul edilebilir değerler arasında bulunmuştur. Çalışma sonucunda Suskunluk Sarmalı Ölçeği ve alt boyutları için hesaplanan Cronbach alpha güvenilirlik katsayılarının yeterli düzeyde olduğu belirlenmiştir. Ölçeğin yapı geçerliliğine ilişkin yapılan açıklayıcı faktör analizi ve doğrulayıcı faktör analizi özgün ölçekteki gibi üç boyutlu modeli destekleyen sonuçları göstermiştir. Suskunluk sarmalı ve alt boyutları arasında yapılan korelasyon analizi sonucunda istatistiksel olarak anlamlı ilişkiler bulunmuştur. Suskunluk Sarmalı Ölçeği ve alt boyutları arasında anlamlı bir korelasyon katsayısı bulunması ölçeğin alt boyutlarının benzer yapıları ölçtüğü şeklinde yorumlanabilir. Analizler sonucunda ölçeğin üç boyutlu özgün yapısının Türk kültürüyle uygun olduğu sonucuna ulaşılmıştır.

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Introduction

Human beings have an inherent need to be involved in a group or community for a sense of belonging. They desire to feel their own existence in social formations. This is why they have anxiety for being accepted by these formations (Mahmutođlu, 2016). The spiral of silence theory starts with a fear of isolation and continues with concealment of opinions. An individual think that it is more important not to be isolated from society than to express his/her opinion. This situation is a requirement of social life. Individuals fear not only being isolated from the society, but also being judged and punished by the society (Neumann, 1974). Individuals show tendency to talk, when their opinions are consistent with their positions (Matthes, 2014). And if they do not agree with other people's opinions in their community, they remain silent about the subject (Matthes, Knoll & Sikorski, 2018). A spiral process occurs when the perceived majority opinions become dominant and the perceived minority opinions are silenced. There is neither legal nor moral obligation for silent majority. They just begin to lose their sense of resistance and personal liability. On the other hand, a personal mission to fight for one's own opinions has revealed the concept "spiral of silence" (Neumann, 1974).

The spiral of silence theory clarifies the process of formation and reinforcement of public opinion. According to the theory, public views about "fashion, ethics and politics" can be influenced considerably by various media. This influence results in concealing opinions, or giving up opinions, or even defending one's own opinions (Cobanoglu, 2007). The spiral of silence theory attempts to explain the strength and impact of public opinion via bringing into view social pressure by focusing on the fear of ostracism (Dik, 2015).

According to the literature, existing studies suggest that when individuals encounter risky situations, they consider potential reactions of their family, friends and other people before making a decision about what to do. Results of these studies also support the theory of planned behaviour. Similarly, according to the spiral of silence theory, instead of verbalising unpopular opinions people tend to moderate their behaviours and statements which are unconformable with the perceived majority opinion (Neuwirth & Frederick, 2004). Actually, it is considered that when people have the opportunity to control their behaviours, they act what they intend. Intentions are assumed as the most immediate predictors of behaviours. The consequent assumption is that people actualize their intentions, if they possess control over their behaviours and have opportunity to do what they have in their minds. In the case of control problems caused by a great many of behaviours, it is necessary to consider perception process of the behaviour, since intention alone will not be enough (Ajzen, 2002).

A study by Hayes (2007) revealed that when participants were asked to tell their opinions about an opinion they disagreed with, they used different strategies such as censoring their own opinions, expressing indifference or ambivalence, trying to change the subject or reflecting the question back without answering it (Hayes, 2007). In other studies about sharing opinions on social media, it is found that people pronounce their opinions more easily and their expressions are well welcomed, they also express their thoughts more safely and easily by using a nickname or without using a name (Cobanoglu, 2007).

This study is important in terms of determining the status of individuals to express their opinions and thoughts against the pressure of public opinion and providing information about the situation they are in. Individuals to express their opinions clearly without considering the common climate of opinion or against the wrong or mistake practices in terms will contribute like factors of productivity, innovation, etc.

Method

This section provides detailed information about the study group, data collection tools, procedure and statistical analysis.

Sample

This paper presents an adaptation study of “Spiral of Silence Scale (SSS)” into Turkish. The study was conducted with 421 health professionals. The participants were asked to fill in questionnaires in order to assess the cultural appropriateness of the scale for Turkish health professionals. Sample size of the study was calculated with the method used to validate a scale which implies that the sample size should be 5 or 10 times as large as the number of variables. Thus, a sample size of 421 was estimated to be large enough to represent the study population for the 5-item SSS (Unubol & Zorlu, 2018). Table 1 demonstrates demographic data of the participants.

Table 1. Demographical data for the sampling group (n=421)

Demographical Features	Frekans	(%)	Demographical Features	Frekans	(%)
Gender			Marriage Status		
Female	286	67.9	Married	98	23.3
Male	145	32.1	Single	323	76.7
Education Level			Income (TL)		
High School	213	50.6	1000-2000 TL	110	26.1
Associate Degree	109	25.9	2001-3000 TL	257	61
Undergraduate	76	18	3001-4000 TL	28	6.7
Graduate	23	5.5	4001 TL and Above	26	6.2
Age			Profession		
20 Age and Under	108	25.7	Technician	45	10.7
21-25 Age	165	39.2	Technician (High)	29	6.9
26-30 Age	74	17.6	Nurse	261	62
31-35 Age	31	7.3	Paramedic	29	6.9
36 Age and Above	43	10.2	Other	57	13.5

Of the study sample; 67.9% were women and 32.1% were men, 23.3% were married and 76.7% were single. Out of the 421 participants, 50.6% were high school graduates, 25.9% had associate degree, 18% had bachelor degree, and 5.5% were postgraduate students. The participants had a wide range of monthly income level; 26.1% of them had a monthly income of 1000-2000 Turkish Liras (TRY), 61% had 2001-3000 TRY, 6.7% had 3001-4000 TRY, and 6.2% had 4001 and over TRY. Among the subjects, 25.7% were at the age of 20 and below, 39.2% were between 21-25 years of age, 17.6% were between 26-30 years of age, 7.3% were between 31-35 years of age, and 10.2% were at the age of 36 and above. Professions of the participants were as follows; 10.7% were technicians (vocational school graduates), 6.9% were technicians (vocational high school graduates), 62% were nurses, 6.9% were paramedics, and 13.5% were working at other departments.

Data Collection Tools

Data were collected from 421 health professionals working at various departments in Hospitals in Ankara, between 1st September and 19th November 2018. Data collection tools were *Demographic Information Form (DIF)* and *Spiral of Silence Scale (SSS)*.

The Demographic Information Form (DIF) was developed by researchers in order to obtain information about the participants' age, gender, marital status, income level, education and profession.

The Spiral of Silence Scale (SSS) was developed by Lee et al. (2014) to measure organizational climate for the act of speaking out or remaining silent. The scale has 7 items and 3 subscales. First factor is opinion expression: Avoidance, second factor is

opinion expression: Engagement and third factor is fear of isolation. Opinion expression: Avoidance and opinion expression: Engagement subscales is interitem correlation good level (0.39 and 0.79). Fear of isolation subscale is Cronbach Alpha level very good (0.91). The items are on a 5-point Likert scale (1=Strongly disagree, 5=Strongly agree). In order to adapt the scale into Turkish, required permission was obtained via e-mail from the address given in the paper.

Procedure

At first, two specialists translated the original form of the SSS from English into Turkish, then retranslated the Turkish version of the SSS (TSSS) into English. In order to administer the survey, necessary permissions were obtained from head physician of the Hospital where the participants worked. We employed 95% confidence level as the level of significance. We performed descriptive statistics, validity analysis, correlation analysis, exploratory factor analysis (EFA) using SPSS 24 program, and confirmatory factor analysis (CFA) using AMOS 24 to determine construct validity of the scale (Vatan & Kahya, 2018). The reliability of the scale was estimated using Cronbach's.

Results

The TSSS consists of seven items and three subscales, which are (1) avoiding giving an opinion (AGO), (2) agreeing with the prevailing view (APV) and (3) fear of isolation (FOI) When we analysed means and standard deviations of responses for the items, we found that item 4 received the highest mean score (3.87±1.04) and item 6 had the lowest mean score (1.95±1.12) (Table 2).

Construct Validity

We performed the EFA to detect the construct validity of the TSSS, and calculated cronbach's alpha coefficients to determine the reliability of the TSSS. The Kaiser-Meyer-Olkin (KMO) analysis was carried out to determine whether the data were suitable for factor analysis. The results of Bartlett's test of sphericity provided evidence for correlation among the variables. As the KMO was found over 0.60 and Bartlett's test was found significant, the data were considered suitable for factor analysis (Ozdemir, 2009). Table 2 shows distribution of the TSSS scores according to factors.

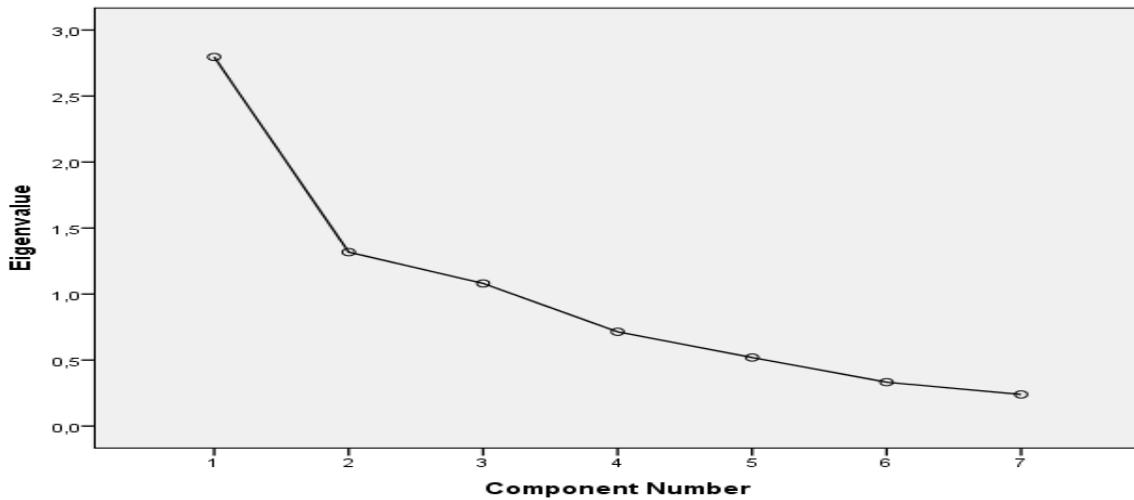
Table 2. Distribution of the TSSS scores according to factors and the factor loads

Items	$\bar{X} \pm Ss$	First Factor	Second Factor	Third Faktör	Cronbach alpha
1.Say you agree with their opinion on the issue even if it is different from yours.	3.25±1.28	0.777			0.654
2.Give neutral comments without revealing your own opinion on the issue.	3.23±1.19	0.812			
3.Discuss with these people your opinions about the issue.	3.76±0.98		0.817		0.635
4.Give your own view about the issue.	3.87±1.04		0.859		
5.I worry about being isolated if people disagree with me.	2.12±1.19			0.869	0.877
6.I avoid telling other people what I think when there's a risk they'll avoid me if they knew my opinion.	1.95±1.12			0.904	
7.I'm concerned that people might act differently toward me somehow if they disagree with me.	1.98±1.19			0.879	
Coefficient		2.398	1.472	1.325	
Explain % of Variance		34.251	21.022	18.934	
Cumulative % of Variance		34.251	55.274	74.207	
KMO:0.727; Barlett X ² =892.250; df= 21					

Results for the KMO and Bartlett's tests of the TSSS: The KMO and Bartlett's test were carried out to determine whether the scale was suitable for factor analysis. According to the results, the KMO was over 0.600 (0.727), and Bartlett's χ^2 test was significant ($p=0.000<0.05$). These results shows that the scale is suitable for factor analysis (Unubol & Zorlu, 2018).

Results for the reliability analysis and factor distribution of the TSSS items: According to the results of the factor analysis, the TSSS was determined as consisting of 7 items and three subscales. We found that the scale explained 74.207% of total variance, and the reliability coefficient was 0.641. These results suggest that the Turkish version of the scale is highly reliable (Kayis, 2010). We found that the first factor consisted of two items loading at 0.817 and 0.859; and it accounted for 21.022% of the total variance. The first factor's reliability value and reliability coefficient were 2.398 and 0.635, respectively. These results suggest that the reliability of the first factor is well. The second factor was also found to consist of two items loading at 0.777 and 0.812. It accounted for 34.251% of the total variance. The second factor's reliability value and reliability coefficient were 1.472 and 0.654, respectively. According to these results, the reliability of the second factor is well. The third factor consisted of three items loading at 0.869; 0.904 and 0.879. It accounted for 18.934% of the total variance. The third factor's reliability value and reliability coefficient were 1.325 and 0.877, respectively. According to these results, the third factor is highly reliable. The scree plot of the study is presented in Figure 1.

Figure 1. Scree plot



When the scree plot was examined to validate the 3-factor structure of the scale established in the study, we found that this 3-factor structure was validated.

Results for the CFA of the TSSS: Confirmatory factor analysis (CFA) is used to test how well a model of observable factors (latent variables) fits a set of observed data. We performed the CFA in order to evaluate the validity of the three-factor model of the 7-item TSSS. Table 3 demonstrates the results of the CFA.

Table 3. Goodness-of-fit indices for the three-factor model of the TSSS

Compliance Index	Good Compliance	Accepted	Model	Compliance
X^2/sd (23,524/11)	$0 \leq x^2/sd \leq 3$	$3 \leq x^2/sd \leq 5$	2,139	Good Compliance
REMSEA	$0 \leq REMSEA \leq 0,05$	$0,05 \leq REMSEA \leq 0,08$	0,052	Acceptable
GFI	$0,95 \leq GFI \leq 1,00$	$0,90 \leq GFI \leq 0,95$	0,984	Good Compliance
AGFI	$0,90 \leq AGFI \leq 1,00$	$0,85 \leq AGFI \leq 0,90$	0,960	Good Compliance
RMR	$RMR \leq 0,05$	$0,05 \leq RMR \leq 0,80$	0,036	Good Compliance
CFI	$0,95 \leq CFI \leq 1,00$	$0,90 \leq CFI \leq 0,95$	0,986	Good Compliance
CAIC	Comparison smaller than CAIC		$143,249 < 948,326$	Acceptable
ECVI	Comparison smaller than ECVI		$0,137 < 2,174$	Acceptable
AIC	Comparison smaller than AIC		$57,524 < 913,028$	Acceptable

Returning the Table 3, the X^2/sd ratio and the values of GFI, AGFI, RMR and CFI indicate good fit, and the value of RMSEA indicate acceptable fit. The results for CAIC, ECVI and AIC demonstrate that the model which serves best as an approximation to reality is selected. The results of the CFA can be interpreted as that the three-factor structure of the scale comply with Turkish culture (Cekic, Akbas & Hamamci, 2018). Table 4 demonstrates correlation values between the TSSS and the subscales.

Table 4. Correlation values between the TSSS and the subscales (n=421)

	$\bar{X}\pm Ss$	(1)	(2)	(3)	(4)
(1) Spiral of Silence	2,87±0,51	1	0.515*	0.303*	0.640*
(2) Opinion Expression: Avoidance	3,23±0,99		1	0.189*	-0.151*
(3) Opinion Expression: Engagement	3,81±0,86			1	-0.326*
(4) Fear of Isolation	2,01±1,05				1

*p<0.05. ** \bar{X} = Mean, Ss= Standart Deviation

Correlation coefficients were calculated to examine the relationship between mean scores on the subscales and on the TSSS. We found that the correlation coefficients between the mean scores on the TSSS and on the three subscales (the AGO, the APV & the FOI) were statistically significant. The correlation coefficients between the subscale AGO and the other subscales were statistically significant. The correlation coefficient between the subscale APV and the subscale FOI was statistically significant as well.

Conclusion

In this paper, the spiral of silence scale developed by Lee et al. (2014) was adapted into Turkish, and the validity and reliability study of the Turkish version of the scale was presented. According to our results, Cronbach's alpha reliability coefficients are acceptable for the Turkish version of the scale and the subscales. The results on the EFA and the CFA performed for the construct validity support the three-factor model as the model of the original scale. Additionally, according to the correlation analysis, there are significant relationships among the scale and the subscales. The significance of correlation coefficient values found among the scale and the subscales is interpreted as that the subscales measure similar constructs. At the end of the statistical analysis, it is concluded that the three-dimensional structure of the original scale is appropriate for Turkish culture. The results of this study for the structure of the TSSS are the same as those of the study conducted in America to develop the structure of the original SSS (Lee, Oshita, Oh & Hove, 2014). In conclusion, the Turkish version of the SSS is a valid and reliable scale as the results of this study have supported.

In this study the SSS is adapted for health professionals. We recommend that further studies with different groups of individuals should be carried out to perform analysis for validity and reliability of the TSSS. It is considered that studies with different samples such as academicians who deal with information would make great contributions to broaden the scope of the scale.

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Ek-1. Suskunluk Sarmalı Ölçeği'nin Türkçe Formu

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1.Eğer sizin görüşünüzden farklı bir görüşte olsa dahi konuyla ilgili genel görüşe katılırım.					
2.Konuyla ilgili kendi görüşümü belirtmeden tarafsız yorumlar yaparım.					
3.İnsanlarla konu hakkındaki görüşlerim üzerine tartışırım.					
4.Bir konu hakkındaki görüşlerimi belirtirim.					
5.İnsanlarla aynı görüşte olmadımda dışlanma korkusu yaşarım.					
6.Farklı düşüncelerim nedeniyle insanların beni dışlama riskinden dolayı düşüncelerimi söylemekten kaçınırım.					
7.Eğer insanlar benimle aynı fikirde değillerse bana karşı farklı davranacaklarından dolayı endişe yaşarım.					