Araştırma / *Original article*

An adaptation of Leymann Inventory of Psychological Terror to health sciences programs in Turkey*

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ABSTRACT

Objective: The aim of this study was to adapt the Leymann Inventory of Psychological Terror (LIPT) to health sciences programs in Turkey and examine its psychometric qualities. Methods: A sample of 270 health sciences employees from Turkey was given a modified version of LIPT. Scale reliability of the modified LIPT was assessed using Cronbach's alpha. Exploratory and confirmatory factor analyses were conducted to examine the factor structure of the modified LIPT in Mplus 6. Results: The modified LIPT indicated high reliability (Cronbach's alpha >0.80). A six-factor model was chosen to explain the modified LIPT scale based on the satisfactory fit indices from exploratory factor analyses. The model fit of the same model was also tested using confirmatory factor analysis and the results were again satisfactory in terms of model-data fit. The Tucker-Lewis Index and comparative fit index indices are both greater than 0.90 for both exploratory and confirmatory models. The factors indicated the relationship among different types of bullying acts. Conclusion: The modified LIPT scale is a reliable measurement tool that can be used with confidence determining the reasons and types of bullying in health sciences programs. (Anatolian Journal of Psychiatry 2014; 15:335-343)

Key words: academic bullying, health sciences, modified Leymann Inventory of Psychological Terror, psychological terror, psychometric test

Leymann Psikolojik Yılgınlık Ölçeğinin Türkiye'deki sağlık bilimleri programlarına uyarlanması

ÖZET

Amaç: Bu çalışmanın amacı, Leymann'ın Uyarlanmış Psikolojik Yılgınlık Ölçeğinin (LUPTÖ) faktör yapısını ve psikometrik özelliklerini incelemektir. Yöntem: Sağlık bilimleri alanında çalışan 270 akademisyene uyarlanmış LUPTÖ uygulanmıştır. Alt boyutların iç geçerliliği Cronbach alfa katsayısı ile saptanmıştır. Uyarlanmış LUPTÖ'nün alt boyutların yapısını değerlendirmek için Mplus6 programı kullanılarak doğrulayıcı ve açıklayıcı faktör analizi yapılmıştır. Bulgular: Uyarlanmış LUPTÖ ölçeği yüksek güvenirliğe sahiptir (Cronbach's alpha>0.80). Açıklayıcı faktör analizi sonucu uyarlanan LUPTÖ ölçeğinin memnun edici uyum sonuçlarını açıklamak için altı-faktörlü model seçilmiştir. Ayrıca, aynı model doğrulayıcı faktör analiziyle de test edilmiş ve modelin verilerle memnun edici şekilde uyumlu olduğu görülmüştür. The Tucker-Lewis Index ve comparative fit index hem açıklayıcı, hem de doğrulayıcı faktör analizinde 0.90'ın üzerindedir. Faktörler farklı zorbalık davranışı çeşitleri ile ilişkili bulunmuştur. Tartışma: Uyarlanan LUPTÖ ölçeği sağlık bilimleri alanındaki zorbalık davranışlarının nedenlerini ve çeşitlerini belirlemede kullanılabilecek olan güvenilir bir ölçektir. (Anadolu Psikiyatri Derg 2014; 15:335-343)

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INTRODUCTION

The phenomenon of the physical, moral, and psychological violence in a work environment has been described using various terms in the literature, such as workplace bullying, workplace harassment, or mobbing.[1-4] As many workplaces, higher education institutions are not immune to the prowl of bullies.[5] Several aspects of the academic world lend themselves to the practice and discourage its reporting and mitigation. Its leadership is usually drawn from the ranks of faculty, most of who have not received the management training that could enable an effective response to such situations.[5] Also, conflict of interests between academic employees and extreme ambition of particular faculty members may result in serious arguments and bullying behaviors among colleagues.

Bullying in academia is a type of workplace bullying among scholars and staff in academia, especially higher education institutions such as colleges and universities. Bullying in academic environments can occur as a form of harassment in which members of a department gang up to isolate or humiliate a colleague. Fogg[6] listed common bullying activities in academia such as interrupting the victim during meetings, eye rolling, undermining credibility, and excluding the victim from social conversations. The perpetrators may possess a high-status or a protected position, or the victims may belong to the increasing number of adjunct professors, who are often part-time employees. The 2007 survey of workplace bullying conducted by the Workplace Bullying Institute (WBI) indicated that 72% of workplace bullying incidences involved a harasser that was ranked higher than his or her victims.[7]

Bullying behaviors in academic environments are difficult to identify because they are mostly psychological rather than physical.[8] Academic employees who have been exposed to bullying may have some problems such as insufficient job satisfaction and low motivation, high stress levels, anxiety, blood pressure problems, depression, sleep disorders, occupational fatigue, burnout, firing, resignation and sometimes suicide.[8-10] In order to identify reasons and consequences of bullying in workplaces including universities and colleges, researchers have developed several instruments, such as the Leymann Inventory of Psychological Terror[11], Workplace Bullying Survey,[12] Workplace Psychologically Violence Behaviors Instrument,[13,14] Workplace Relationships Questionnaire,[15] and Workplace Violence Questionnaire.[16]

The Leymann Inventory of Psychological Terror[11] (LIPT) has been the most popular instrument to investigate the reasons of bullying and categorize bullying behaviors. The LIPT scale is a reliable instrument to measure several types of workplace bullying.[11,17-20] Previous studies with the LIPT scale in European countries (e.g., Germany and Austria) have indicated that there are seven types of bullying behaviors: Bullying by organizational measures, social isolation, attacking the victim's private life, attacking the victim's attitudes, physical violence, verbal aggression, and rumors.[17,18] However, it should be noted that these bullying activities are not necessarily cross-cultural. While some of the bullying activities that the LIPT scale refers to may not appear, other bullying behaviors may arise depending on the culture and type of workplace. Therefore, it is important to investigate bullying behaviors considering cultural and workplace norms.

Surprisingly, bullying in academia has not received as much attention from researchers as bullying in some other contexts.[21] A number of studies have focused on workplace bullying in business and finance programs of universities.[10-13,22-25] However, comparing to other university programs, health sciences is the most fragile field against bullying due to its hierarchical organizational structure. Yildirim et al.[13] described health sciences as a high-risk job because both academic employees in health sciences and healthcare professionals are usually exposed to physical and emotional violence at their workplace. Challenges that academic employees in health sciences may need to cope with include work overload, responsibility of dealing with increasing number of students in health sciences programs, and extreme competition between colleagues. These types of challenges may drain academic employees and healthcare professionals emotionally and physiccally, and cause additional issues, such as lack of motivation and poor performance at work.

Given the need for more research on elaborating reasons and outcomes of bullying in health programs, this study aims to provide an adaptation of the LIPT Scale to detect reasons and outcomes of bullying in health sciences programs. Psychometric qualities of the adapted instrument, such as reliability and validity, were examined based on the responses to the instrument from a sample of academic employees in health sciences programs in Turkey. Implications for the use of the instrument for health sciences programs were discussed.

METHODS

Instrument

To develop an adapted version of the LIPT scale, the questions in the original LIPT scale were reviewed and the relevant questions for health sciences programs were selected. The selected items were translated from English to Turkish, and back translated from Turkish to English. To validate the translation process, the following steps were carried out. First, the translated questions were reviewed by three specialists from the Department of Medical History and Ethics. Also, Ethic Committee of Scientific Research checked the adequacy of the translated questions for health sciences programs. The instrument was modified based on the feedback received from the language and content specialists. In the second stage, the adapted instrument was compared with another adaptation of the LIPT scale by Aktop[26] who translated the original LIPT items into Turkish and developed additional items to improve the clarity of the translated LIPT scale in the Turkish context.

The final version of the adapted LIPT scale in this study included fifty-one Likert-type questions including the forty-five items from the original LIPT and the six items suggested by Aktop.[26] All Likert-type questions were based on a five-point scale (strongly disagree, disagree, neutral, agree, and strongly agree). The modified LIPT consists of six subscales (bullying against self-presentation and communication, bullying against social relationships, bullying against dignity, bullying against quality of life and occupational status, bullying against health, bullying against emotions). In addition to the fifty-one LIPT items, eight questions about frequency and duration of bullying and other demographics variables (e.g., gender, age, marital status, job title) were presented at the end of the instrument.

Participants and study setting

The sample of this study included 270 academic employees in health sciences programs of a public university in Turkey. The academic degrees of participants were professors, associate and assistant professors, graduate assistants, and other academic staff. Although a probabilistic survey sampling method was used to determine the participants of this study, participation rates were still dependent on the availability and willingness of the participants due to the highly sensitive nature of bullying in academic contexts.

Ethical approval

Permission to conduct this study was obtained from the directors of health sciences programs. The participants were assured about the confidentiality, protection, and anonymity of data. Ethical committee approval from Ethic Committee of Scientific Research of the university was obtained by the researchers.

Data analysis

Data analysis of this study consists of three sections. In the first section, demographic information from the sample was obtained to define the participants' characteristics (e.g., gender, age). Also, duration and frequency of the participants' exposure to bullying were examined using the last items in the scale. Then, the internal consistency (reliability) coefficient and item-total correlations were calculated for the 51 items that ask participants' opinions about bullying in certain situations.

In the second section, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted to identify the factor structure of the modified LIPT Scale. First, several EFA models (one- to six-factor solutions) were run to identify the underlying structure of the modified LIPT Scale. Then, the EFA model with the best model-data fit was determined and CFA was run for the selected model. All factor analyses were conducted in Mplus 6.[27] The weighted least squares method (WLSMV) was used for estimating the factorial models derived from the modified LIPT Scale. Goodness-of-fit criteria, including root mean square error of approximation (RMSEA), Tucker-Lewis Index (TLI), and comparative fit index (CFI), were used to evaluate model-data fit for EFA and CFA models. The literature contains different recommendations about the type, number, and cut-off values for goodness-of-fit required to be reported.[28] TLI and CFI values greater than

Table 1. Description of the sample used in the study

	Men (n=66)		Women (n=204)		Total (n=270)	
	n	%	n	%	n	%
Age (years)						
< 25	9	4.4	0	0	9	3.3
26-30	58	28.8	13	19.7	71	26.3
31-35	61	29.9	13	19.7	74	27.4
36-40	44	21.6	14	21.2	58	21.5
41-45	10	4.9	10	15.2	20	7.4
46-50	7	3.4	12	18.2	19	7.0
> 51	15	7.4	4	6.1	19	7.0
Marital status						
Single	79	38.7	21	31.8	100	37.0
Married	99	48.5	43	65.2	142	52.6
Divorced	19	9.3	0	0	19	7.0
Widowed	7	3.4	2	3.0	9	3.3
Academic title						
Professor	15	7.4	24	36.4	39	14.4
Associate Professor	19	9.3	1	1.5	20	7.4
Assistant Professor	40	19.6	8	12.1	48	17.8
Teaching Assistant	19	9.3	0	0	19	7.0
Research Assistant	100	49.0	33	50	133	49.3
Lecturer/Specialist	11	5.4	0	0	11	4.1
Department/faculty						
FM	182	89.2	65	98.5	247	91.5
SH	17	8.3	0	0	17	6.3
SVHS	5	2.5	1	1.5	6	2.2
Exposure to bullying						
Current exposure	0	0	33	16.2	33	12.2
In last 6 months	0	0	11	5.4	11	4.1
In last 3 years	2	3.0	15	7.4	17	6.3
First years of work	24	36.4	31	15.2	55	20.4
Most productive times in work	4	6.1	23	11.3	27	10.0
No exposure	36	54.5	91	44.6	127	47.0
Frequency of exposure to bullying						
Very often	5	7.6	22	10.8	27	10.0
Often	0	0	17	8.3	17	6.3
Sometimes	25	37.9	61	29.9	86	31.9
Never	36	54.5	91	44.6	127	47.0
Don't know	0	0	13	6.4	3	4.8
Duration of exposure to bullying						
No exposure	40	60.6	93	45.6	133	49.3
6 months	14	21.2	21	10.3	35	13.0
1 year	0	0	21	10.3	21	7.8
2 years	2	3	32	15.7	34	12.6
≥ 3 years	10	15.2	37	18.1	47	17.4

FM: Faculty of Medicine; SH: School of Health; VSHS: Vocational School of Health Services

0.90 are considered acceptable, and values greater than 0.95 are considered a good fit.[29-31] RMSEA values smaller than 0.05 are usually considered a close fit, values equal or greater than 0.10 a poor fit.[29,30] In addition to these fit indices, the chi-square test of model fit was provided as an indicator of model-data fit.

In the last section, factor scores were estimated for the modified LIPT Scale using the Rasch Partial Credit Model (RPCM).[32] This measure-
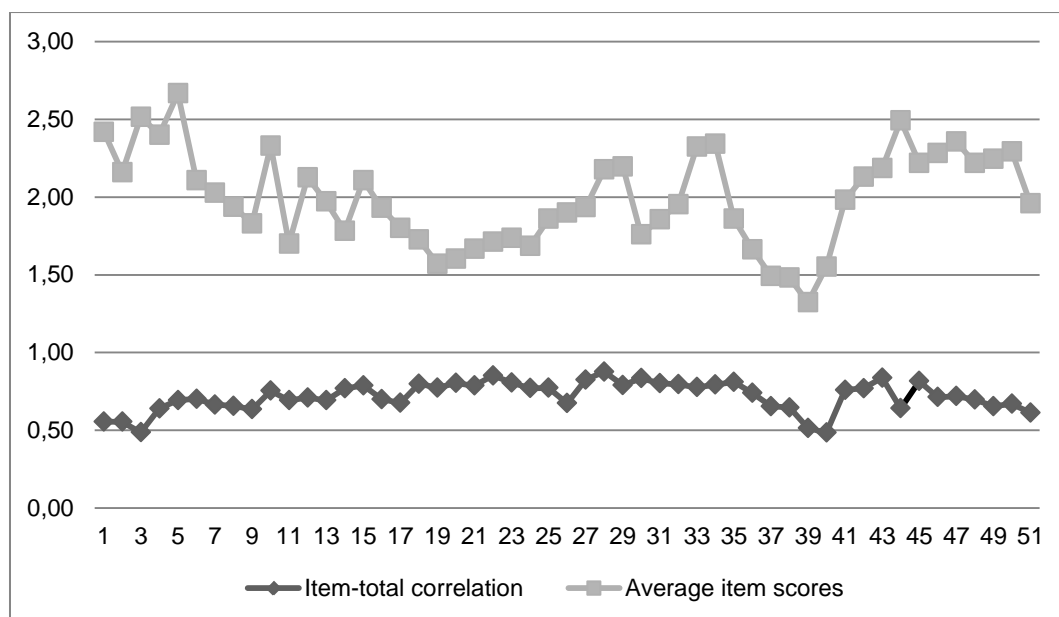
Figure 1. Average item scores and item-total correlations from the modified LIPT Scale

Table 2. Goodness of fit indices for the EFA models

Model	χ^2	CFI	TLI	RMSEA
3-factor model	2872.024	0.94	0.94	0.077
4-factor model	2582.367	0.95	0.94	0.072
5-factor model	2388.852	0.96	0.95	0.070
6-factor model	2253.911	0.97	0.96	0.066

CFI: Comparative fit index; TLI: Tucker-Lewis; RMSEA: Root mean square error of approximation

ment model allows scoring ordinal and ordered categorical items (e.g., Likert scales, rating scales) and provides the probability of selecting a response option (e.g., Strongly agree) on a given item as a function of the person's competence. Because RPCM provides factor scores in a logistic scoring metric (typically ranging from -4 to 4) rather than scale scores, the estimated factor scores were placed on a score metric from 0 to 100 using a linear transformation. Descriptive statistics and correlations among the factor scores were presented.

RESULTS

Description of the sample

Table 1 shows a summary of demographic information for the sample of this study. The participants were 270 academic employees (204 female, 66 male) ranging in age from 22 to 61 years. Almost half of the participants were graduate research assistants (49.3%) and married (48.5%). Age of the participants ranged from 23 to 60 with a mean of 36. The results also show that the amount and frequency of exposure to bullying was different for male and female academic employees. Over 50% of the male participants reported not being exposed to bullying while almost half of the female participants reported being exposed to bullying currently or in the past. Similarly, duration and frequency of exposure to bullying was higher for the female participants in the study.

Reliability

The Cronbach's alpha value for the modified.

Table 3. Factor loadings of the six factor model from the modified LIPT Scale

Factor/item	λ	Factor/item	λ
Bullying against self-presentation & communication		51. Desire to change work if possible	0.69
1. Being inhibited from showing skills/knowledge	0.71	*Bullying against dignity*	
2. Being interrupted at meetings	0.72	16. Hearing bad things about himself/herself	0.76
3. Others ignores my success/exaggerates my failures	0.67	17. Being gossiped about	0.78
4. Getting scolded and yelled	0.76	18. Being ridiculed	0.93
5. Getting criticized for no reason	0.85	19. Being said to have a mental illness	0.90
6. Private life being criticized by others	0.85	20. Getting pushed to have psychiatric exams	0.95
7. Being terrorized by means of phone calls	0.88	21. Being ridiculed for his/her mistakes	0.92
8. Receiving verbal threats	0.89	22. Gestures are imitated to tease by others	0.98
9. Receiving written threats	0.83	23. Way of moving is imitated to tease	0.96
10. Getting exposed to irritating gestures/looks	0.93	24. Voice is imitated to tease	0.91
		25. Suffering verbal attacks regarding political and religious beliefs	0.90
Bullying against social relationships		26. Being teased due to ethnic background	0.78
11. Not being talked by people in faculty/department	0.83	27. Being forced to do humiliating jobs	0.90
12. Being criticized due to conversations with some people	0.79	30. Being called with humiliating nicknames	0.94
13. Being known as someone's minion	0.82	*Bullying against quality of life*	
14. Conversation with colleagues is prevented	0.88	28. Efforts are treated scornfully by others	0.94
15. My presence is ignored among other people	0.87	29. Behaviors are questioned by others	0.83
		31. Never being given any special duty	0.88
Bullying against emotions		32. Being forced to lose work	0.89
41. Feeling alone in faculty/department	0.89	33. Being given meaningless work assignments	0.83
42. Struggling with focusing on work	0.90	34. Being given work assignments far below capacity	0.87
43. Feeling worthless in faculty/department	0.92	35. Being given humiliating work assignments	0.88
44. Not wanting to go to work in the morning	0.80	36. Workplace/home is damaged by others	0.32
45. Feeling uneasy in faculty/department	0.95	*Bullying against health*	
46. Having sleep problems	0.84	37. Being psychically threatened	0.95
47. Decrease in work efficiency and strength	0.86	38. Being psychically attacked	0.92
48. Feeling inadequate in faculty/department	0.80	39. Being psychically harmed	0.85
49. Feeling intensively anxious in faculty/department	0.78	40. Being sexually attacked	0.77
50. Having headaches or stomachaches at work	0.80		

λ: Factor loadings

Table 4. Correlations among the factor scores from the six-factor CFA model

Bullying factors	F1	F2	F3	F4	F5	F6
F1 (Self-presentation & communication)	1.00					
F2 (Social relationships)	0.83	1.00				
F3 (Dignity)	0.76	0.94	1.00			
F4 (Quality of life)	0.91	0.95	0.94	1.00		
F5 (Health)	0.48	0.85	0.87	0.69	1.00	
F6 (Emotions)	0.82	0.86	0.83	0.92	0.52	1.00

LIPT scale was 0.97, suggesting high reliability for the translated and modified LIPT items. Figure 1 shows the distributions of corrected item-total correlations and average scores across all items on the scale. None of the items had an item-to-total correlation below the acceptable level of 0.30.[33] The average score for the items ranged from 1.32 to 2.67.

Exploratory and confirmatory factor analyses

EFA models with one-factor to six-factor solutions were run. Table 2 shows a summary of model-fit indices from the EFA models used in this study. Because one-factor and two-factor solutions indicated poor model-data fit with some convergence issues, the results for those models were not presented. Three-, four-, five-, and six-dimensional EFA models provided acceptable levels of model-data fit in terms of CFI and TLI indices. However, the six-dimensional provided the smallest RMSEA among the four models. Because all items indicated high loadings on the particular factors, none of the items were needed to be removed. The six factors derived from the modified LIPT scale are bullying against self-presentation and communication, bullying against social relationships, bullying against emotions, dignity, quality of life, and health.

After determining the EFA model with the best model-data fit, CFA was run for the six-factor solution to confirm the six-factor structure of the modified LIPT Scale. The results of CFA showed that the six-factor model had an adequate model-data fit (CFI=0.95, TLI=0.95, RMSEA=0.067). The factor loadings of the items from the six-factor CFA model were presented in Table 3. All standardized factor loadings for were high, ranging from 0.32 to 0.98. The high loadings of the items indicate that there is a strong relationship between each of the factors and their corresponding items. Table 4 shows the correlations among the factor scores from the six factors of the modified LIPT. The correlations were moderate to high (0.48 to 0.95). Especially the factor scores from bullying against the quality of life were highly correlated with the first three factors that are also related to inter-personal and intra-personal impacts of bullying in academia. This suggests that if a person is exposed to bullying against his/her dignity, social relationships, and self-presentation in an academic environment, the quality of his/her life is highly affected by those bullying acts. Similarly, bullying against emotions is highly correlated with the first three-factors, indicating that academic employees are emotionally affected by hostile bullying attacks in their academic environments.

DISCUSSION

Health sciences programs are built upon a certain hierarchy that employees are likely to feel under pressure because of their rigorous relationship with the superiors.[34-37] To investigate the underlying reasons of bullying among academic employees in health sciences programs, reliable and informative measurement tools are needed. In this study, the LIPT scale was modified for academic employees in health sciences programs in Turkey, and the psychometric qualities of this tool were thoroughly examined.

The results of this study indicated that the modified LIPT Scale is highly reliable and all items in the scale are positively related to each other. To examine the factor structure of the modified LIPT, exploratory and confirmatory factor analyses were conducted. The results from EFA runs indicated that a six-factor structure explained the response data from the modified LIPT better than the other alternative models. The model-data fit of this model was also tested within a CFA model. As in the EFA model, the model-fit results in the CFA model were acceptable, suggesting that the six-factor structure is appropriate for the modified LIPT scale. Correlations among the factor scores from the six factors provide information about the relationship between the factors of the modified LIPT. These correlations suggest that being exposed to bullying influence victims in several way (e.g., emotionally, health, quality of life). Bullying seems to have a negative impact on both inter-personal and intra-personal characteristics of academic employees.

The psychometric examination of the modified LIPT scale indicated that LIPT is a reliable measurement tool for identifying bullying behaviors in workplaces, as also suggested by previous studies.[38,39] Also, higher prevalence of bullying against women is another cross-cultural finding of this study that is consistent with previous studies.[40] Although the original LIPT Scale and its variants have been commonly used in the literature, none of those studies have focused on the factorial structure of the scale. Considering the increasing interest in understanding bullying in academic environments, the factors described in this study will be particularly useful for researchers who aim to use LIPT for evaluating workplace bullying. However, it should be noted that the meaning of the factors may change depending on the cultural norms and participant characteristics in different populations.

Although this study achieved to make a thorough psychometric analysis of the modified

LIPT Scale, some limitations of the study should be considered when using this version of the scale. First, the sample size of the study was not large. Because of the sensitive nature of the topic and lack of an online network among academic employees in Turkey, it was difficult to reach to a larger group of participants. Second, this study could not provide any evidence on the concurrent validity of the modified LIPT Scale because there is no other scale or questionnaire in the literature that specifically examines bullying in health sciences programs. Future studies can focus on examining the modified LIPT Scale in a larger sample of academic employees or expand the scale by adding more items to identify other bullying factors.

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