



EXPOSURE TO VIOLENCE OF NURSES IN TURKEY: A META-ANALYSIS RESEARCH

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Abstract

Violence against nurses is one of the most important problems in health care institutions. Among healthcare workers, nurses are the most exposed to verbal and physical violence. This study aimed to determine the level of exposure of nurses to physical and verbal violence in Turkey. The research data obtained by a systematic review method and quality evaluation were made. The level of exposure of nurses to physical and verbal violence was determined by the meta-analysis method. In meta-analysis, random effects model was chosen and event rate statistics were used in the effect type. Heterogeneity between the studies was evaluated using I^2 test. To determine publication bias, the funnel graph, Egger's linear regression, and Begg and Mazumdar sequence correlation tests were conducted. According to the findings obtained from meta-analysis, the nurses' exposure to physical violence score was 0.19 (CI; 0.12-0.28; $p < 0.05$), and verbal violence exposure score was 0.79 (CI; 0.71-0.85; $p < 0.05$) and it was determined that there was no publication bias in the research. It was determined that the level of exposure of nurses to verbal violence is higher than physical violence. Hospital management should take measures to prevent nurses from being exposed to physical and verbal violence and necessary sanctions should be applied within the framework of legislation for those who commit violence.

Key Words: Workplace Violence, Nurse, Meta-Analysis, Hospital



INTRODUCTION

Healthcare workers may work with clients whose behaviors are risks for both infectious disease and violence. Healthcare workers had ever experienced verbal threats, weapon threats, physical attacks, and rape, and risk factors associated with those outcomes (Schulte et al., 1998:439). Health workers have a high risk of attack (Pinar et al. 2017:2345). According to the World Health Organization (WHO, 2020), health professionals are at risk of violence all over the world. More is threatened or subjected to verbal aggression. Most violence is practiced by patients and visitors. The most at-risk categories of health workers include nurses and other staff directly related to patient care, emergency staff, and paramedics.

Healthcare workers are a major target or victim of workplace violence. Healthcare workers are subjected to 16 times more violence than other sector workers (Kingma, 2001:129-130) and more than 50% of health workers have already experienced verbal and physical violence (Hahn et al., 2012:2687). 8% to 38% of healthcare workers are exposed to physical violence at some point in their careers (WHO, 2020).

Although workplace violence is widespread in healthcare settings, it is an underreported problem that is largely ignored. Violence against healthcare workers can have a negative impact on performance outcomes and therefore affect the health and satisfaction of patients (Alsalem et al., 2018:188). Workplace violence against nurses is a major problem and managerial issues globally, particularly in developing countries.

Nurses working in the health sector in every region of the world constitute one of the groups most exposed to violence such as sexual harassment, verbal abuse and physical abuse (Kısa, 2008:200). Health care workers, especially nurses, are considered as high-risk occupational groups in terms of violence. Violence against nurses is a universal problem (Günaydın and Kutlu, 2012:1). Most nurses in the health sector do not feel safe at work and work with the fear of being exposed to violence (Pınar and Uçmak, 2011:516).

Violence is a major problem in the health sector in Turkey and other countries and attracts more and more attention to public health research. However, it is not possible to give a real prevalence of violence against healthcare staff since there is no nationwide study. In recent years, violence against physicians, nurses, and other health personnel have been reported in newspapers and televisions (Sönmez et al., 2013:26). Among healthcare workers, nurses are the most exposed to verbal and physical violence in Turkey. Thus, verbal and physical violence is a critical issue in hospital.

Healthcare providers are concerned about the increasing frequency of verbal and physical violence for healthcare workers in Turkey. The main factors affecting this situation are waiting in the polyclinics and clinics for a long time and not receiving the required health services immediately. However, these events may cause enormous psychological and physical harm among healthcare workers. (Erkol et al., 2007:424-425). In order to improve workplace-working conditions in hospitals, it is very important to determine the situation of violence, frequency of violence and risk of violence in these institutions Health workers who are most exposed to violence are emergency department workers, especially nurses. Nurses who are exposed to violence experience emotional, physiological, psychiatric problems and their work performance and social relationships are damaged (Yeniocak et al., 2012:115). This situation negatively affects health quality and patient safety.

MATERIALS AND METHOD

Systematic reviews and meta-analysis methods were used in the research. Systematic review is a comprehensive summary of all available evidence that meets predefined eligibility criteria to address a specific research question (Cook et al., 1997: 376; Oxman et al. 1994: 1367). Meta-analysis is a statistical method that quantitatively combines results from different studies (Lau et al. 1997: 820). In the study, Preferred Reporting Items of Systematic reviews and Meta-Analyses (PRISMA) was used to minimize the risk of bias of systematic screening results. Systematic reviews and meta-analyses are required to accurately and reliably summarize the evidence of scientific studies in the field of healthcare. In addition, meta-regression analysis was conducted in the research. In meta-analysis, regression using variables of the studies (moderator) is called meta regression (Şen, 2019:37). The results of the research were measured by the effect size. The effect size is the value that indicates the magnitude of the relationship between the variables in a study and it is also used as a basic unit in meta-analysis (Şen, 2019:21).

In this research, studies examining the physical and verbal violence against nurses enrolled in Turkey. In determining the studies to be included in the research, a literature review strategy was developed according to the acceptance and exclusion criteria specified in Table 1. In this study, coding form was used in Excel. This coding form included information such as authors, study year, sample group, sample size, type of violence, and exposure to physical and verbal violence, and research area. Quality evaluation was performed in the research by taking the Critical Appraisal Skills Program (CASP) checklist as reference (CASP, 2020). The analysis of the data was done with the meta-analysis program. In meta-analysis, random effects model was selected and event rate statistics were used in the effect type. In the study, I^2 statistics were calculated to determine heterogeneity. Funnel plot, Egger's linear regression, and Begg and Mazumdar rank correlation tests were performed to detect publication bias. Since the data used in the research do not directly affect humans or animals, there is no need for an ethical committee decision. No funds have been received for this study.

Table 1: Systematic Review and Meta-Analysis Strategy

Strategy	Inclusion Criteria	Exclusion Criteria
Language	Turkish and English	Other languages than Turkish and English
Evidence Level	Research using the best evidence approach and Critical Appraisal Skills Program checklist	-
Date	01.01. 2000-31.12 .2019	-
Data Sources	Ulakbim National Database, Google Scholar, Scopus, Web of Science , Pubmed, Cochrane review databases	Researches that cannot be identified in the sources
Keywords	(TITLE-ABS-KEY (violence) OR TITLE-ABS-KEY (workplace AND violence) OR TITLE-ABS-KEY (physical AND violence) AND TITLE-ABS-KEY (verbal AND violence) OR TITLE-ABS-KEY (nurse) AND TITLE-ABS-KEY (healthcare AND institutions AND hospital) OR TITLE-ABS-KEY (Turkey))	Other healthcare workers, other types of violence
Research Area	Health sector, Hospital	All sectors except the health sector
Method	Survey Method	
Statistical Data	To know of the number of nurses subjected to physical or verbal violence required for meta-analysis	It does not have quantitative data

RESULTS

In the research, 250 scientific studies suitable for systematic screening strategies were determined. As a result of the examination, 99 of these studies were excluded due to duplication. The summary of the remaining 151 articles was evaluated the exclusion and acceptance criteria and 50 studies that did not comply with the determined strategy were not included in the study. In the last stage (among 26 studies), the content of 21 scientific studies for physical violence and 24 for verbal violence was transferred to the coding form (Table 2). PRISMA Flow Chart was presented in the flow diagram in Figure 1. According to the research findings, 26 studies related to the level of exposure of nurses to physical and verbal violence were determined (Table 2). In these studies, 8966 nurses in physical violence and 9672 in verbal violence were taken as samples.

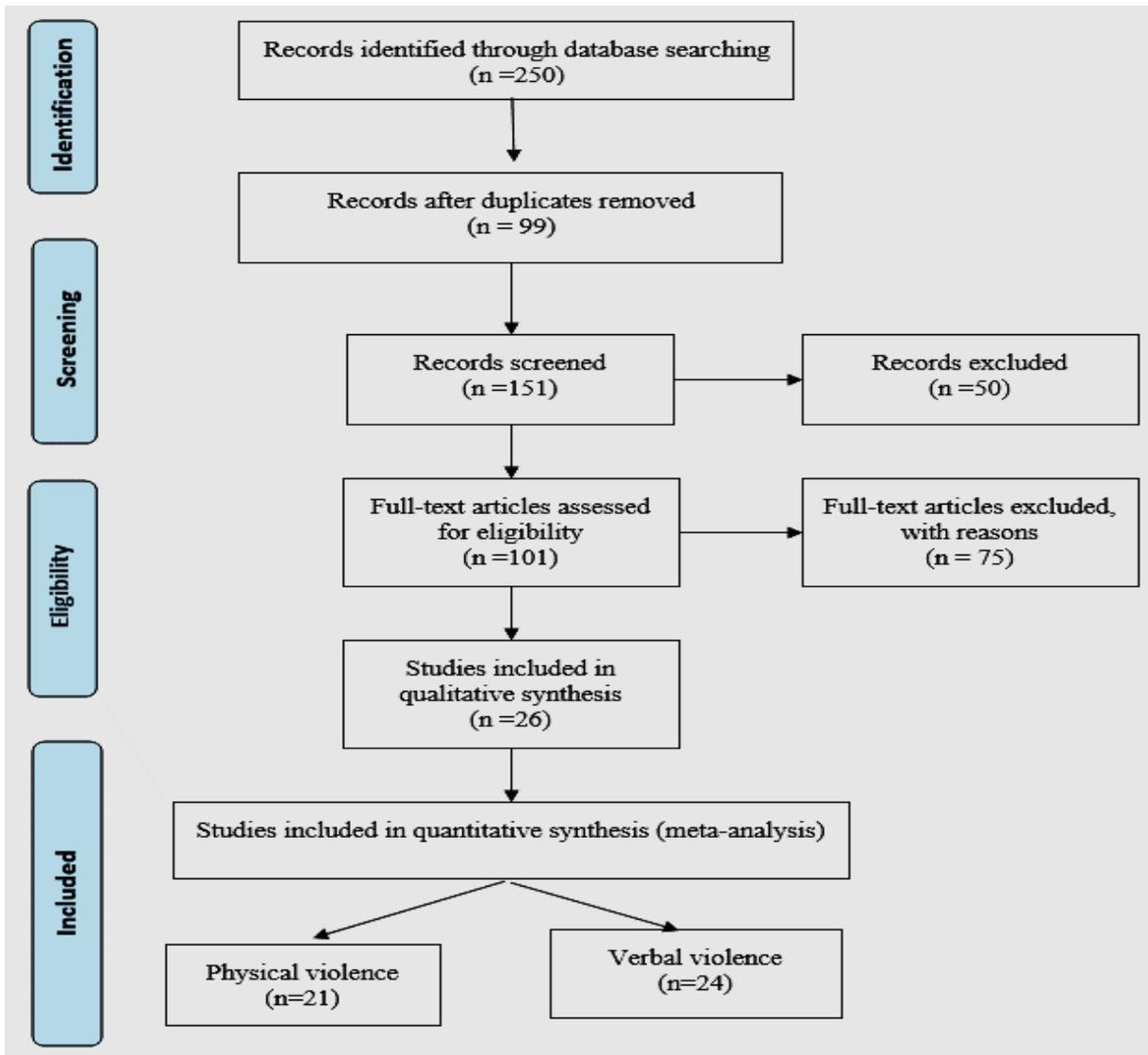


Figure 1: PRISMA Flow Chart
Source: Moher et al. (2015).

Table 2. Scientific research included in the scope of meta-analysis

No	First Author	Verbal	Physical	No	First Author	Verbal	Physical
1	Aksakal et al., 2015	x	x	14	Gunaydin and Kutlu, 2012	x	x
2	Alçelik et al., 2005	x	x	15	Kahriman, 2014	x	x
3	Ayakdaş, 2017	-	x	16	Karakas,etal., 2015	x	-
4	Bahar et al, 2015	x	x	17	Kısa, 2008	x	-
5	Bilgin and Buzlu, 2006	x	x	18	Oztunç, 2006	x	-
6	Boz et al., 2006	x	x	19	Pınar et al., 2017	x	x
7	Canbaz et al., 2008	x	x	20	Pınar, 2011	x	x
8	Cerit et al., 2017	x	x	21	Sönmez et al., 2013	-	x
9	Coşkun and Tuna 2010	x	x	22	Şenuzun and Karadakovan, 2005	x	x
10	Çamcı and Kutlu, 2011	x	-	23	Taş and Çevik, 2006	x	x
11	Çelik et al., 2007	x	x	24	Talas et al., 2011	x	x
12	Dikmen et al., 2016	x	x	25	Tekin and Bulut, 2014	x	x
13	Kavak and Ekinci, 2013	x	x	26	Uzun, 2003	x	-

The results of the heterogeneity test for physical and verbal violence are given in Table 3. The I^2 statistical value used to determine the level of heterogeneity was calculated as 98.54 for physical violence and 98.10 for verbal violence. As a result of the calculations, the effect size distribution was analyzed according to the random effects model instead of the fixed-effects model.

Tablo 3. Heterogeneity Test

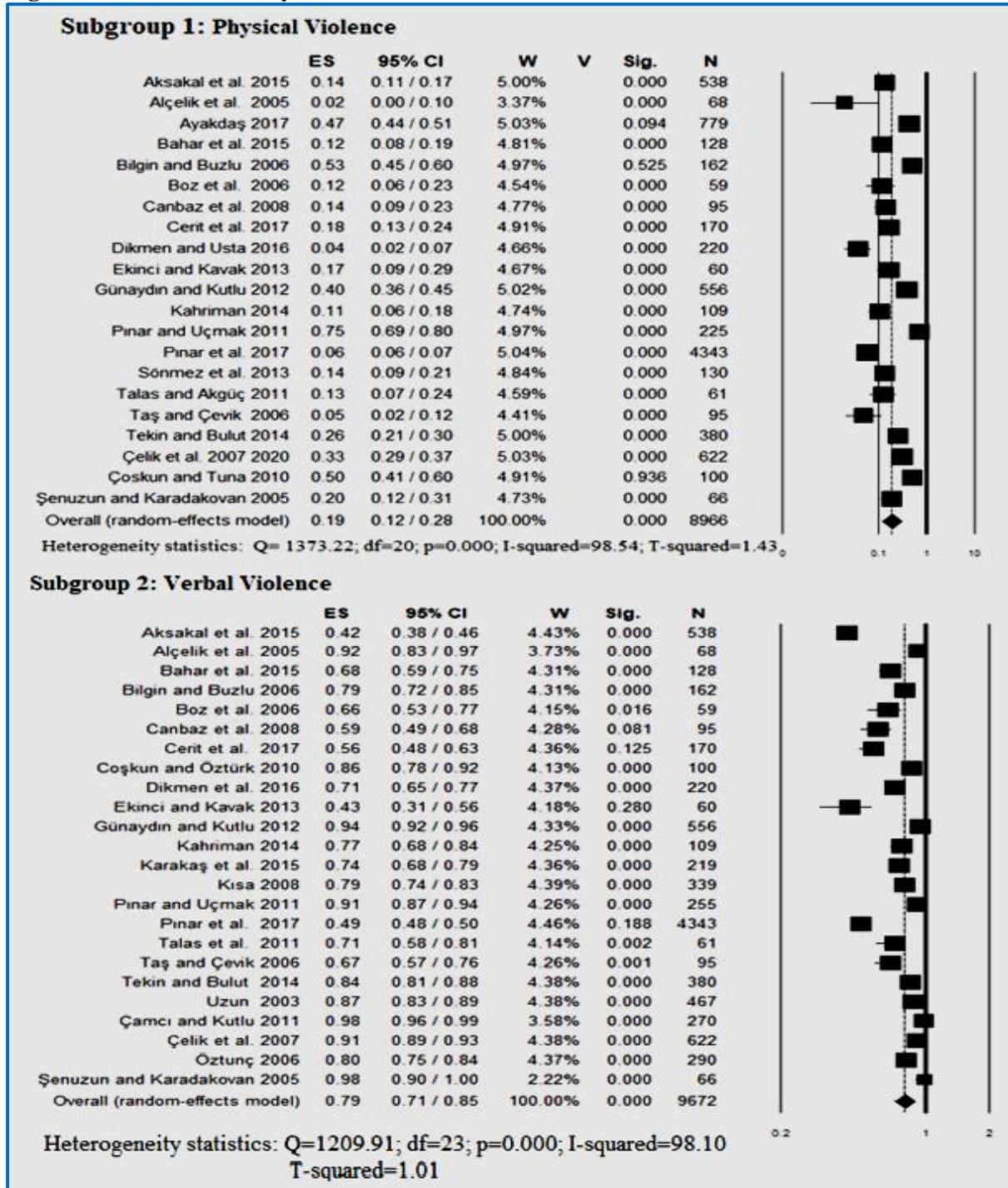
Type of Violence	Q	df	p	I^2	T^2
Physical Violence	1373,22	20	0,000	98.54	1.43
Verbal Violence	1209,91	23	0,000	98.10	1.01

In the study, the level of meta-analysis of nurses' exposure to physical and verbal violence was shown with forest plot (Figure 2). According to the findings obtained as a result of meta-analysis, the level of exposure of nurses to physical violence was determined. Consequently, meta-analysis made using the random-effects model, it was determined that the level of exposure to physical violence has a statistically significant, positive and low effect with a value of 0.19 (GA; 0.12-0.28; $p < 0.05$). The level of exposure to physical violence was found to be statistically significant, positive and high-level with a value of 0.79 (GA; 0.71-0.85; $p < 0.05$).

The results of the funnel scatter plot, which are considered as a visual summary of the studies included in the meta-analysis and which indicate the possibility of publication bias, are given in Figure 3. As can be seen in Figure 3, the majority of the studies included in the research are located towards the top of the figure and very close to the combined effect size.

Abbreviations: ES: effect size, CI: confidence interval, W: weight, Sig: significance (P-value), N: total sample size, P: P-value, df: degree of freedom

Figure 2. Forest Plots of Physical and Verbal Violence



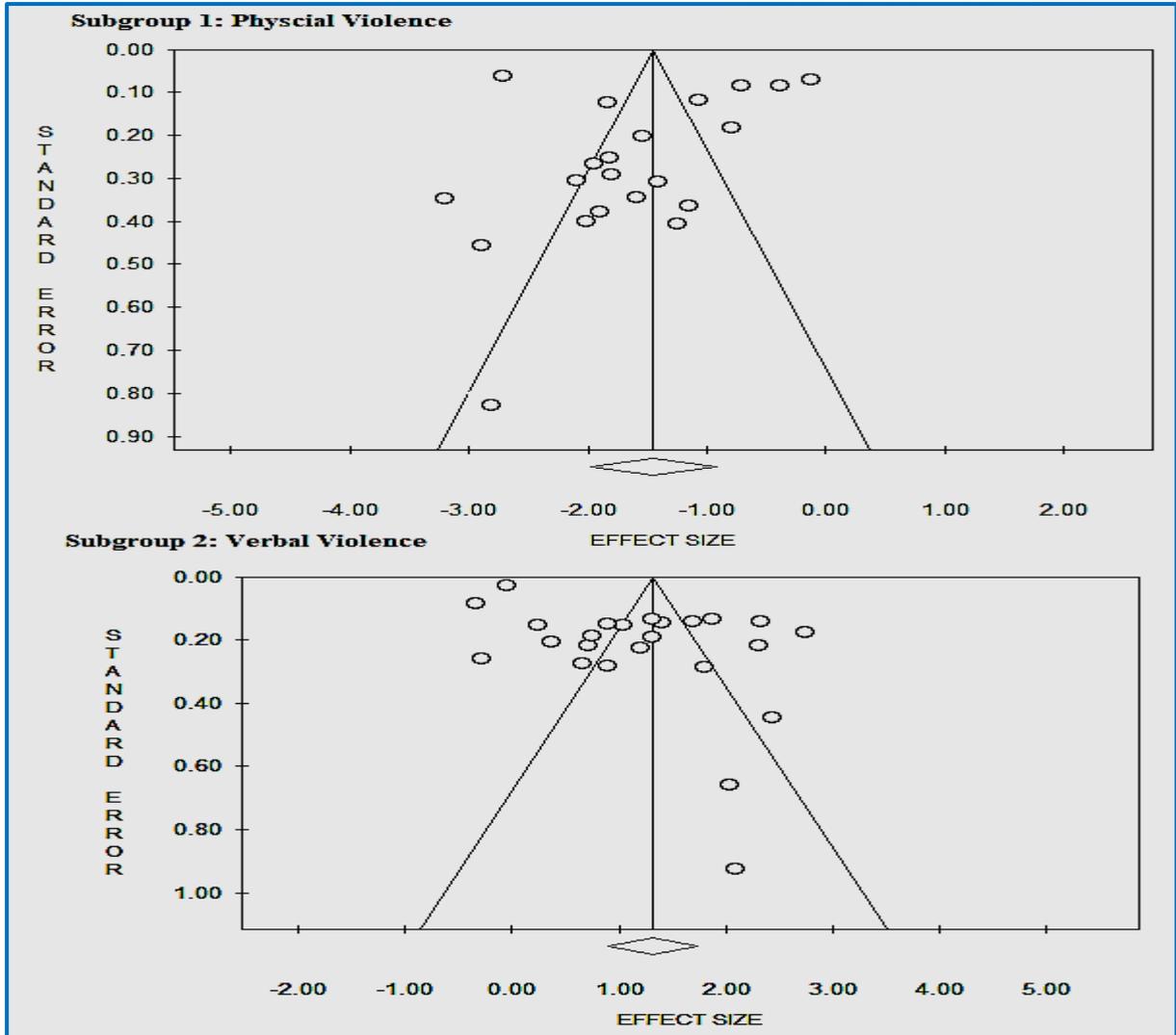


Figure 3. Funnel Plots

There are different methods to determine whether there is publication bias in meta-analysis. In the study, Egger's linear regression, and Begg and Mazumdar rank correlation tests were performed to detect publication bias analysis (Table 4). As a result of this analysis, it was determined that there was no publication bias.

Table 4. Publication Bias Analysis

Type of Violence	Egger's Regression Test		Linear	Begg and Mazumdar Rank Correlation		Classic Statistics	Fail-Safe	N
	Intercept	t	p	Kendall's tau b	p	The value is above Rosenhal's rule of thumb		
Physical	7.51	4.85	0,000	-0.35	0.728		5993	
Verbal	-0.86	-0.26	0.795	-2,23	0.025		5664	

To analyze multiple variables in meta-analysis, weighted regression method was used in this research. As shown in Figure 4, meta-regression moderator analysis results showed that there was no significant relationship between physical violence ($p = 0.575$) and verbal violence ($p = 0.052$) between effect sizes and publication year.

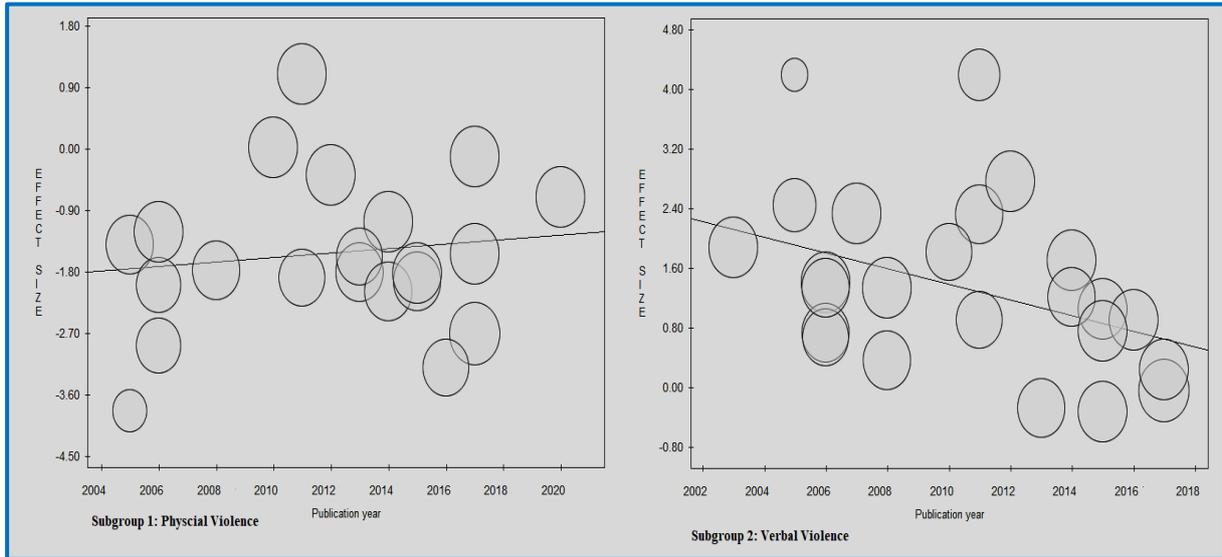


Figure 4. Meta-Regression Moderator Analysis

DISCUSSION

This study is one of Turkey on nurses' physical and verbal exposure to systematic violence, which estimates the first comprehensive review and meta-analysis. Özcan and Bilgin (2011: 6) by the written studies, it was determined that the violence against healthcare workers was high and that the violence was carried out mostly by the relatives of the patients in Turkey. Some research results that determine the physical and verbal level of nurses are discussed below.

Akascal et al. (2015:1360) determined the prevalence of violence in a university hospital as 13.9% and 41.8%, respectively. Besides, most of the nurses who experience verbal violence state that they are more willing to change their work, institutions, and professions if given the opportunity. The research conducted by Çelik et al. (2007: 359) found that the prevalence of verbal and physical abuse against nurses was 91.1% and 33.0%, respectively. According to Ayaktaş and Aslantaş (2017:42), approximately half of the participant nurses reported that they were exposed to at least one colleague violence. They cited the causes of this exposure as jealousy, a higher level of education, competition, newcomers in the clinic, differences in political views, workload and patient density, and physical appearance. Bahar et al. (2015: 57), they found that the nurses exposed to violence in their studies reduced their job satisfaction. Can and Beydağ (2013: 419), the majority of emergency room nurses in Turkey (70.7%) are exposed to violence. 42.1% of the nurses found that they encountered violence several times a day, 42.1% did not know the existence of the procedure to be applied after the violence, and 28.6% did not attempt for the situation after the violence.

Cerit et al. (2017: 231), 60.6% of nurses were exposed to any type of violence during their professional life and verbal violence was the most common form of violence. It was determined that the nurses were exposed to violence mostly by patients and their relatives, and that the incidents of violence mostly occurred in the patient's room and within the working hours of 08-16, and 7.8% of the nurses reported the violence. Coşkun and Öztürk (2010: 16), the rate of exposure of nurses to verbal violence was 86%, and the rate of exposure to physical violence was 50.4%. 82% of those who are exposed to physical violence state that they are exposed to violence while working in psychiatric clinics. 22.3% slap, 28.9% push, 15.7% kick, 21.5% item throw, 19.8% punch, 9% bite, 6.6% sexual harassment were defined as physical violence. It has been determined that 77% of physical violence incidents are carried out by patients.

Çamcı and Kutlu (2011: 9), on the other hand, found that the most exposed type of violence was verbal violence with 98.5%, and that violence was most frequently practiced by patient' relatives and men. Kahrıman (2014: 77), 77.0% of nurses were exposed to verbal violence and 11.0% to physical violence. It was determined that 10.5% of the nurses "wanted to quit the profession" and 40.4% of the violence they suffered was "affected by the job performance". As the education level of nurses increases, the rate of violence is decreasing (Kavak ve Ekinci, 2013:290).

According to Tekin and Bulut (2014: 85), verbal and physical violence percentages of nurses were 84.5% and 25.5%, respectively. Nurses who were ill-treated stated that the abuse they experienced affected their relationship with that person, decreased their job performance and led to the thought of quitting nursing.

CONCLUSIONS

In this meta-analysis study, the level of violence against nurses was 19% for physical violence and 79% for verbal violence in Turkey. It was determined that the level of exposure of nurses to verbal violence is higher than physical violence. This type of violence has the potential to severely influence nurses, patients, and patients' relatives. According to this result, both physical and verbal violence constitute the most important employee safety problem in hospitals. Physical and verbal violence causes nurses' burnout and job inefficiency Also, physical and verbal violence against nurses is a common occupational hazard n Turkey. Healthcare provider needs to determine which situations; patients and departments pose a risk of violence against nurses and take precautions against these risks. Another way of preventing violence in hospitals needs of training programs aimed at developing communication and violence management skills for nurses. In addition, many legal arrangements were made in 2020 in order to prevent violence at health institutions in Turkey. Hospital management should take measures to prevent nurses from being exposed to physical and verbal violence and necessary sanctions should be applied within the framework of legislation for those who commit violence. If the nurses do not want to report violence incidents to the hospital management, they should be informed that they can report via the White Code, SABİM and CİMER.

A common type of violence in hospitals is that nurses who experience intense work stress or suffer violence tend to apply violence to their colleagues or other healthcare professionals in the institution. To solve this situation, it can be suggested to ease the workload of nurses, to offer psychological support and to create a safe working environment. However, despite the warnings, trainings and support provided, it may be recommended to punish employees who are still using violence, to be assigned in other department or to terminate their duties.

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