

# Violence towards workers in hospital emergency services and in emergency medical care units in Samsun: an epidemiological study

Samsun'da hastane acil servisleri ve 112 acil çalışanlarına karşı şiddet: Epidemiyolojik bir çalışma

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## BACKGROUND

The aim of this study was to determine the frequency of exposure to some form of violence during the previous 12 months and the State-Trait Anxiety levels of emergency medical care (EMC) and emergency service (ES) workers in Samsun.

## METHODS

A cross-sectional study was conducted in all EMC (5) units and ES (4) in Samsun, between April 1 and April 30, 2004. A self-administered questionnaire was sent to all of the workers (n=320).

## RESULTS

Of the workers, 280 (87.5%) completed the survey. A total of 202 (72.1%) participants reported that they had witnessed some form of violence. ES workers (75.9%) were more often exposed to violence than EMC workers (62.3%) ( $\chi^2=5.08$ ,  $p<0.05$ ). The multivariate analysis demonstrated that age, gender and anxiety regarding repetition of exposure to violence were related with higher state anxiety point, while anxiety regarding repetition of exposure to violence was related with higher trait anxiety point.

## CONCLUSION

This evidence clearly indicates that violence in ES and EMC units is a common concern. The necessary framework for the reduction and elimination of violence in the workplace should be provided.

**Key Words:** Emergency service workers; state-trait anxiety inventory; verbal behavior; violence/statistics & numerical data; violence.

## AMAÇ

Bu çalışmada, Samsun'da hastane acil servisleri ve 112 acil çalışanlarının son 12 ay içinde şiddete maruziyeti ve durumluk-sürekli kaygı düzeylerinin değerlendirilmesi amaçlandı.

## GEREÇ VE YÖNTEM

1-30 Nisan 2004 tarihleri arasında, Samsun il merkezindeki beş acil yardım istasyonu ve dört hastane acillerinin tümünde, kesitsel tipte bir araştırma planlandı. Anket formunu katılımcıların tamamının (n=320) kendi kendilerine doldurmasını istendi.

## BULGULAR

Katılımcıların 280'i (%87,5) araştırmaya katıldı. Araştırmaya katılanların toplam 202'si (%72,1) herhangi bir formdaki şiddete maruz kaldığını bildirdi. Hastane acil servis çalışanlarının (%75,9), 112 acil çalışanlarına (%62,3) göre daha fazla şiddete maruz kaldığı bulundu ( $\chi^2=5,08$ ,  $p<0,05$ ). Çok değişkenli analiz sonuçlarına göre yaş, cinsiyet ve tekrar şiddete maruz kalma kaygısının yüksek durumluk kaygı puanı ile, tekrar şiddete maruz kalma kaygısının yüksek sürekli kaygı puanı ile ilişkili olduğu saptandı.

## SONUÇ

Bu sonuçlar hastane acilleri ve 112 acillerinde, şiddetin yaygın olduğunu açıkça göstermektedir. İşyerindeki şiddetin azaltılması ve yok edilmesi için gerekli çalışmalar yapılmalıdır.

**Anahtar Sözcükler:** Acil çalışanları; durumluk-sürekli kaygı; şiddet; sözlü tavır; şiddet/istatistik ile sayısal veri.

The World Health Organization defines workplace violence as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, in work-related circumstances, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation.<sup>[1,2]</sup> The National Institute for Occupational Safety and Health (NIOSH) defines workplace violence as violent acts (including physical assaults and threats of assaults) directed toward persons at work or on duty.<sup>[3]</sup>

Workplace violence has become an alarming phenomenon worldwide. The real magnitude of the problem is largely unknown, and recent information shows that the current knowledge is only the tip of the iceberg.<sup>[4]</sup> While workplace violence affects practically all sectors and all categories of workers, the health sector is at major risk. Violence in this sector may constitute almost a quarter of all violence at work.<sup>[5]</sup> Violence in the emergency department is a common concern as well.<sup>[3,6,7]</sup> It is a well-recognized concern for health care workers, with most perpetrated by patients and, to a lesser extent, visitors.<sup>[8]</sup> The true incidence of violence in the health-care setting is difficult to estimate, given the different definitions of workplace violence that may be adopted by different agencies, different data collection systems for different types of violence, and significant under-reporting of violence incidents by health-care workers.<sup>[2,7-10]</sup>

Although anyone working in a hospital may become a victim of violence, nurses and aides, who have the most direct contact with patients, are at higher risk. Other hospital personnel at increased risk of violence include emergency response personnel, hospital safety officers, and all health care providers.<sup>[2,3,11]</sup> The effects of violence can range in intensity and include the following: Minor physical injuries, serious physical injuries, temporary and permanent physical disability, psychological trauma, and death. Violence may also have negative organizational outcomes in the form of low worker morale, increased job stress, increased worker turnover, reduced trust of management and coworkers, and a hostile working environment.<sup>[3,8]</sup>

Emergency medical care (EMC) is a service that may be achieved by calling "112" in any emergency in Turkey. This is the telephone number to

call from anywhere in Turkey to receive immediate, skilled medical attention. Ambulance attendants or paramedics transport the patients to the emergency services (ES) at the hospitals.<sup>[12]</sup>

The aim of this study was to determine the frequency of exposure to some form of violence during the last 12 months and the State-Trait Anxiety levels of the EMC and ES workers in Samsun, Turkey.

## MATERIALS AND METHODS

### Subjects and method of data collection

A cross-sectional study was conducted in all EMC (5) units and ES (4) in Samsun, Turkey, between April 1 and April 30, 2004. A self-administered questionnaire was sent to all of the workers (n=320). Of the workers, 280 (87.5%) completed the survey.

### Questionnaire

The questionnaire was designed in a self-administered format. Demographic variables such as gender, age, occupation and working years were assessed. The survey questionnaire includes team accordancy and administrator support, anxiety regarding repetition of exposure to violence, the type of violence (verbal abuse, verbal threat and physical assault), and with respect to the physical assault, which device was used.

Team accordancy was measured using a single-item question asking, "On the whole, how in accordancy are you with your team?", with response options including: (1) good, (2) moderate, or (3) bad. Administrator support was measured as with team accordancy.

We asked participants to indicate if they had experienced any of the three types of violence (verbal abuse, verbal threat or physical assault) within the last 12 months they worked. Limiting responses to the last 12 months worked was done to ensure accurate recall. Aggression, raising of voices (screaming) and name calling were defined as verbal abuse; the raising of fists and attempts at physical violence as verbal threats; and slapping, kicking, throwing any item or object, biting, hitting, slapping, pulling, pushing, pinching, grabbing, scratching and punching as physical assault.

After the questionnaire was completed, *State-*

**Table 1.** Type and number of violent events in the last 12 months by occupational group

Occupational group of victim	Persons		Verbal abuse		Verbal threat		Physical assault		Total separate events		Average events per person
	Number	%	Number	%	Number	%	Number	%	Number	%	
Doctor	151	95.0	115	72.3	80	50.3	28	17.6	159	100.0	1.1
Nurse	95	90.5	62	59.0	66	62.9	15	14.3	105	100.0	1.1
Ambulance staff	23	95.8	13	54.2	10	41.7	7	29.2	24	100.0	1.0
Ancillary staff members	11	100.0	11	100.0	11	100.0	5	45.5	11	100.0	0.8
<i>Total</i>	280	93.6	201	67.2	167	55.9	55	18.4	299	100.0	1.1

*Trait Anxiety Inventory* (STAI) was applied to all participants. It is a self-report assessment device, which includes separate measures of state and trait anxiety. It is comprised of 40 multiple-choice questions written on a 4-point Likert scale, classified as always, often, sometimes, and rarely, and can be completed in ten minutes or less. The score ranges between 20 and 80 points for each scale. Validity of STAI was confirmed in Turkey. Validity is between 0.83-0.87 and 0.94-0.96 according to state anxiety and trait anxiety, respectively.<sup>[13]</sup> The essential qualities evaluated by the STAI scale are feelings of apprehension, tension, nervousness, and worry. Scores on the STAI scale increase in response to psychological stress, and decrease as a result of relaxation training.<sup>[14,15]</sup>

### Analyses

Data were given as mean  $\pm$  standard deviation (SD) and percentage. Analysis of data was performed by using chi-square, chi-square for trend and Student's t tests. The effect of the independent variables such as age, gender, occupation, team accordance, administrator support and anxiety regarding repetition of exposure to violence on the state anxiety point (SAP) and trait anxiety point (TAP) were evaluated by using multivariate regression analysis.

## RESULTS

The mean age and working years of the participants were 31.0 $\pm$ 5.9 years old and 83.3 $\pm$ 65.9 months, respectively. Of the participants, 126 (45.0%) were women. A total of 202 (72.1%) ES or EMC workers had been exposed to a form of violence, of which 112 (88.9%) and 90 (58.4%) were women and men, respectively. Women (88.9%)

were exposed to more violence than men (58.4%) ( $\chi^2=31.97$ ,  $p<0.001$ ).

Of the participants, 201 (71.8%), 167 (59.6%) and 55 (19.6%) stated that they witnessed verbal abuse, verbal threat and physical assault, respectively. Fifteen (27.3%) of the attackers used an instrument during the physical assault such as cudgel (40.0%), bottle of serum (26.7%), razor and knife (20.0%) and weapon (13.3%). Experiences of violence varied significantly between the different health occupational groups, although verbal abuse appears to be an endemic risk (Table 1).

It was found that there was a statistically significant difference between the participants exposed to violence (90.4%) and not exposed to violence (9.4%) with respect to anxiety regarding repetition of exposure to violence ( $\chi^2=67.34$ ,  $p<0.001$ , OR=11.18, 5.69<OR<22.21). The frequency of exposure to violence was higher in participants with a lack of team accordance and administrator support. It was found that the risk of exposure to violence was increased approximately ten-fold in participants reporting bad team accordance. Similarly, the risk of exposure to violence was increased approximately five-fold in participants reporting bad administrator support (Table 2).

There was a statistically significant difference between the participants exposed to some form of violence or not with respect to both mean SAP (45.3 $\pm$ 5.5 and 39.4 $\pm$ 4.1,  $t=9.90$ ,  $p<0.001$ ) and TAP (47.4 $\pm$ 3.9 and 46.3 $\pm$ 3.9,  $t=2.15$ ,  $p<0.05$ ).

The multivariate analysis demonstrated that age, gender and anxiety regarding repetition of exposure to violence were related with higher SAP, while anxiety regarding repetition of exposure to violence was related with higher TAP (Table 3).

**Table 2.** Exposure to some form of violence according to particular characteristics of work conditions

The characteristics of work conditions	Exposure to violence				$\chi^2$ *, [ p ]	OR
	Yes		No			
	Number	%	Number	%		
<b>Team accordance</b>						
Good (n=166)	105	63.3	61	36.7		1.00
Moderate (n=95)	79	83.2	16	16.8	16.69,	2.87
Bad (n=19)	18	94.7	1	5.3	[ <0.001 ]	10.46
<b>Administrator support</b>						
Good (n=125)	79	63.2	46	36.8		1.00
Moderate (n=118)	90	76.3	28	23.7	11.28,	1.87
Bad (n=37)	33	89.2	4	10.8	[ <0.001 ]	4.80

\*Chi-square for trend.

**Table 3.** Multivariate regression analysis results for SAP and TAP

Variables	SAP*		TAP**	
	B	p	B	p
Constant	50.02	<0.001	52.54	<0.001
Age	0.12	<0.05	0.05	>0.05
Gender	-1.72	<0.05	0.04	>0.05
Occupation	-0.56	>0.05	-0.35	>0.05
Team accordance	0.87	>0.05	0.59	>0.05
Administrator's support	-0.24	>0.05	-0.41	>0.05
Anxiety regarding repetition of exposure to violence	-4.29	<0.001	-0.98	<0.05

SAP: State anxiety point, TAP: Trait anxiety point; SAP model:  $y=50.02 + 0.12$  (age) + (-1.72) (gender) + (-4.29) (anxiety regarding repetition of exposure to violence), TAB model:  $y= 52.54 + (-0.98)$  (anxiety regarding repetition of exposure to violence); \* R2=0.19, p<0.001; \*\* R2=0.06, p<0.05.

## DISCUSSION

The variety of behaviors that may be covered under the general rubric of violence at work is so large, the borderline with acceptable behaviors often so vague, and the perception in different contexts and cultures of what constitutes violence so diverse, that it becomes a significant challenge to both describe and define this phenomenon.<sup>[16]</sup> On the other hand, there is an international epidemic of violence at work, particularly in the ES and EMC units.<sup>[4,8,11,16,17]</sup> Emergency departments, ES and EMC act as the door to a hospital and, consequently, staff members encounter many different types of individuals.<sup>[2,4,5,16,17]</sup> The prevalence of verbal or physical

violence directed towards the workers in EMC and ES in Turkey is not known. According to the present study, 72.1% of the participants reported some form of violence and 19.6% had been physically assaulted. These results are supported by NIOSH. A total of 84.0% of the participants reported that they witnessed some form of violence in the last 12 months before the survey and 18.6% had been physically assaulted according to the NIOSH publication.<sup>[11]</sup>

It was found that the ES workers were exposed to violence more often than the EMC workers. The risk factors for violence vary from hospital to hospital depending on location, size, and type of care. Common risk factors for health sector violence include: working when understaffed; transporting patients; working alone; and lack of staff training and policies for preventing and managing crises with potentially volatile patients.<sup>[2,5]</sup>

It was shown in this study that women were more often exposed to violence than men. On the other hand, female gender was found to be related with higher SAP according to multivariate regression results (Table 3). The gender dimension should be given special consideration when tackling stress and violence in the workplace.<sup>[18]</sup> Women and men are both affected by violence at work, although in different ways, but female gender may heighten the risk of violence to health care workers.<sup>[2,5,18,19]</sup>

The sample of 280 health workers experienced 299 separate events that involved verbal abuse,

threats and physical assault. By implication, on average, each health worker personally experienced around 1.1 events. Experiences of violence varied significantly between occupational groups. Physicians and nurses cited proportionally more violent events than did the other groups, and ancillary staff the least. Client-initiated violence was found to be a relatively common experience, particularly for those health care workers who had extensive face-to-face contact with clients who were distressed, frightened, inebriated, ill or angry.<sup>[17]</sup> The international research studies have also suggested that the health workers most at risk are those in emergency departments, the ambulance service, mental health units, and drug and alcohol clinics.<sup>[3,5-8]</sup> Again, this pattern was replicated in this study.

Verbal abuse was almost endemic, with 201 separate events reported in the last 12 months before the survey. This rather high ratio of verbal abuse means that health care workers perceive the violence as part of their job. Physical assaults were experienced less commonly, with 55 events reported by all of the participants. The lower rate of physical assaults suggests that individuals might show restraint because of laws.

It was found that anxiety regarding repetition of exposure to violence was increased approximately ten-fold in participants who reported having been exposed to violence. On the other hand, anxiety regarding repetition of exposure to violence was found to be related with higher SAP and TAP (Table 3). Violence was found to have a negative influence on participants' conditions. Violence may also have negative organizational outcomes in the form of low worker morale, increased job stress, increased worker turnover, reduced trust of management and coworkers, and a hostile working environment.<sup>[3,8]</sup>

There were statistically significant differences in team accordance and administrator support between participants exposed to some form of violence or not in this study. However, no effect of team accordance and administrator support on the SAP and TAP was found in regression analysis. Workplace stressors, such as low administrator support or poor workgroup relationships, may also increase the risk of violence in the workplace. Health-care settings are embedded in communities, which may influence the type or level of workplace violence experienced.<sup>[1,5,11,20]</sup> Management is a natu-

ral point of reference within organizations. When the management exemplifies positive attitudes and behaviors at the workplace, the entire organization is likely to follow suit. A management style based on openness, communication and dialogue, in which caring attitudes and respect for the dignity of individuals are priorities, can greatly contribute to the diffusion and elimination of workplace violence.<sup>[5,20]</sup>

Under the strain of reforms, growing work pressure and stress, social instability, and the deterioration of personal interrelationships, workplace violence is rapidly spreading in the health sector.<sup>[5]</sup> Violence and stress costs in terms of disruption, bad image, absenteeism, turnover, anxiety, accidents at work, burnout and compensation are increasingly becoming apparent. Most important, these threats negatively affect the overall capacity of organizations to perform and be competitive.<sup>[16]</sup>

This study clearly indicates that violence in the ES and EMC is a common concern. However, violence at work increases anxiety. Stress and violence at work are not isolated, individual problems, but structural, strategic issues rooted in wider social, economic, organizational and cultural factors. Efforts should concentrate on the adoption of preventive, systematic and participative interventions. Further research is essential to identify specific risk factors and to describe the epidemiology of aggression and violence toward health care workers that will enable the development of appropriate prevention strategies. This includes:

- Making the reduction / elimination of workplace violence in the health sector an essential part of national / regional / local policies and plans on occupational health and safety;
- Actively promoting awareness of the risks and destructive impact of workplace violence;
- Providing adequate reporting systems;
- Encouraging workers to report minor violence;
- Providing psychological support to persons exposed to violence.

Our study has two limitations. First, owing to recall bias, the number of incidents of violence may have been over-reported. Second, there may have been a nonresponse bias, in that the 40 people who did not respond may have been more or less likely to experience violence.

## REFERENCES

1. Dahlberg LL, Krug EG. Violence, a global public health problem. In: Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, editors. World report on violence and health. Geneva: World Health Organization; 2002. p. 1-22.
2. Cooper CL, Swanson N. Workplace violence in the health sector. State of the art. International Council of Nurses [Socio-economic Welfare- Workplace Violence in the Health Sector]. URL: <http://www.icn.ch/seworkplace.htm>. Available at: 09.06.2004.
3. CDC. Violence, occupational hazards in hospitals. Department of Health and Human Services. CDC, NIOSH Publication No. 2002-101.
4. Di Martino V, editor. Workplace violence in the health sector country case studies. The International Labour Office (ILO), The International Council of Nurses (ICN), The World Health Organization (WHO) and Public Services International (PSI); 2002.
5. Health care workers. URL: <http://www.cdc.gov/niosh/topics/healthcare/#violence>. Available at: 12.11.2004.
6. Lavoie FW, Carter GL, Danzl DF, Berg RL. Emergency department violence in United States teaching hospitals. *Ann Emerg Med* 1988;17:1227-33.
7. Fernandes CMB, Bouthillette F, Raboud JM, Bullock L, Moore CF, Christenson JM, et al. Violence in the emergency department: a survey of health care workers. *CMAJ* 1999;161:1245-8.
8. Mahoney BS. The extent, nature, and response to victimization of emergency nurses in Pennsylvania. *J Emerg Nurs* 1991;17:282-94.
9. Keep N, Glibert P. California Emergency Nurses Association's informal survey of violence in California emergency departments. 1990-1991 California ENA Government Affairs Committee. *J Emerg Nurs* 1992;18:433-9.
10. Rosenstock L, editor. Violence in the workplace, risk factors and prevention strategies. *Current Intelligence Bulletin* 57; 1996: DHHS (NIOSH) Publication No. 96-100.
11. Speilberger CD, Gorsuch RL, Lushene RE. The state trait anxiety inventory manual. Palo Alto, Consulting Psychologists Press; 1969.
12. The republic of Turkey, Ministry of Health. URL: <http://www.saglik.gov.tr/eng/icerik.htm>. Available at: 15.05.2005.
13. Öner N, Le Compte A. Süreksiz durumluk/Sürekli kaygı envanteri el kitabı. 1. baskı, İstanbul: Boğaziçi Üniversitesi Yayınları; 1983. s. 1-26.
14. State Trait Anxiety Inventory (STAI). URL: <http://dlibrary.acu.edu.au/staffhome/stburke/su02p43.htm>. Available at: 05.10.2004.
15. Cole LL, Grubb PL, Sauter SL, Swanson NG, Lawless P. Psychosocial correlates of harassment, threats and fear of violence in the workplace. *Scand J Work Environ Health* 1997;23:450-7.
16. Di Martino V, Musri M. Guidance for the prevention of stress and violence at the workplace. Department of Occupational Safety and Health Malaysia, ILO, 2001.
17. Mayhew C, Chappel D. The occupational violence experiences of 400 Australian health workers: an exploratory study. *J Occup Health Saf* 2003;19:5-45.
18. Introduction to the preparation of Manuals on Occupational Stress. URL: <http://www.ilo.org/public/English/protection/safework/stress/prepman.htm>. Available at: 31.12.2004.
19. Framework Guidelines for adressing, workplace violence in the health sector. Joint Programme on Workplace Violence in the Health Sector. Geneva: ILO, ICN, WHO, PSI publishers; 2002.
20. Crilly J, Chaboyer W, Creedy D. Violence towards emergency department nurses by patients. *Accid Emerg Nurs* 2004;12:67-73.