

***Investigation of the Effect of ACT-SMART on Nurses' Perceived Level of Violence
Management in Emergency Section***

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Abstract

Background: Violence in the workplace is a complicated phenomenon, while being a global intricacy which is constantly growing. Upward growth in violence and the acute dangers, are to the extent that the Center of Disease Control and Prevention considers violence in the working environment as an epidemic and the nursing staff have problems in managing violent events because of improper attitude towards violence.

Objectives: This study tries to examine effect of an educational program on the perceptions on management and reduction of violence and aggression in the emergency section.

Methods: In this interventionist study, 90 nurses, engaged in the emergency sections of selected medication centers in Khorramabad city were selected on simple randomized selection basis and were assigned into two control and experimental groups. The education program, whose content were effective communication, patient's expected response, peace, impatience, proper relationship and exchange of opinions and controlling behavior in reaction to violence, was implemented and offered to the experimental group every other day for a month and in 16 one-hour sessions. The data were collected through a questionnaire, whose validity and reliability were estimated one month before and after implementation of the educational program through test-retest method and the content validity checking method.

Results: Results of this study showed mean score of attitude for the experimental group standing at 36.79 prior and 35.83 after the educational intervention ($P=0.402$), while the figures for the control group were 36.79 before and 35.52 after the educational intervention ($P=0.181$). No statistically significance difference was observed in the mean scores of perception improvement in the control and experimental group before and after the educational program.

Conclusion: Results of this study showed that implementation of educational program in connection with violence and the way of controlling and encountering violence in the emergency sections cannot affect attitude of nurses towards management of violence alone.

Keywords: Perception, Nurse, Emergency, Violence

Introduction

Violence in the workplace is a complicated phenomenon and a global intricacy, constangly growing [1]. Escalation of violence and serious dangers, that it causes, are so much to the extent that the Centers for Disease Control and Prevention (CDC) consider violence in the workplace as an epidemic [2]. Work related violence is among the types of violence which put

person(s) in abuse in working environments and conditions [3]. Results of studies show that psychological violence is in the form of verbal aggression, sexual abuse or mobbing times more than physical assaults [4-5].

Therefore, this issue has over recent years made scholars and also the society pay more attention to it. There are different and and diversified definitions available in social sciences on

violence. Meanwhile, the emergency section is one of the more stressful working environments, overwhelmed with unnatural behaviors like violent behaviors [6].

Due to their improper attitude towards violence, the nursing staff have problems in managing the violent events [7]. Nursing is among the professions exposed to highest danger of getting subjected to violence, and nurses are the main targets of all aggressions [8]. Multidimensional conceptual attitude includes cognitive, emotional and behavioral elements. The most acceptable attitude shows the cognitive and emotional effect left over from personal experience of a covert social issue or object and it is an interest in responding to the thing. There is a hidden mechanism in the concept which guides the behavior [9]. Education plays an effective role in changing attitude. Education helps the nurse to understand factors, involving personal bias which affects his/her attitude and the effect of such a negative attitude which leads to accusing the patient and isolating him/her. Negative attitude of the nurse also negatively affects the quality of caring the patient, patient's safety and the safety of the nursing personnel [10].

Studies have shown that controlling violence needs preparedness of the emergency personnel. To guarantee such a readiness, offering educational program for prevention of violence and aggression is important and inevitable. Educational program is a phenomenon which helps people gain new knowledge, change attitude and adapt themselves with behavioral change through acquiring practical skills [11]. ACT-SMART program enjoys such distinctive features as exclusiveness, measurability, practicality, repeatability, and time-based implementation; furthermore, the instructor is responsible for the pattern adopted for content of the educational program. That's a practical method in many educational programs for the adult [12].

Content of the educational planning pattern are effective communication, giving the response expected by the patient, restoration of peace, impatience, proper relationship and exchange of opinions and controlling behavior in response to violence [13]. Though emergency section is an environment for offering better round-the-clock services to the patients and those suffering mental and psychological problems, a great deal of

financial and human resources need to be spent on curbing violence in the working environment. Expectations of the medication centers are still extremely high. The expectations along with the staff shortage and inability to meet all the needs of patients and their families lead to violence in the medication centers and that poses threat to nurses. On the other hand, such an important issue will negatively affect the clinical performance and professional perception of nurses busy in the emergency section [14].

Now, regarding the fact that there are rare related research available on the effect of educational program in attitudinal level of those busy in the emergency section and the research, thus far conducted, mostly focus on the axis, nature and spread and type of the personnel's dealing with violence, this study is going to explore the effect of a comprehensive educational program on the perception of the nurses of emergency section in preventing violence and aggression in the emergency section.

Methods

This clinical trial research involved as its samples a population of 90 out of 170 nurses, who were engaged in the emergency sections of selected medication centers in Khorramabad city in 2013. To determine the sample size the formula of compare two means, which is

$$n = \frac{(Z_{(1-\beta)} + Z_{(1-\alpha/2)})^2 (\sigma_1^2 + \sigma_2^2)}{(\mu_1 - \mu_2)^2}$$

was used. In the formula $\alpha = 0.05$ and $\beta = 0.2$ and based on similar former results (Kahil, Denis), $\mu_1 = 2.8$, $\sigma_1 = 0.57$, $\mu_2 = 2.4$ and $\sigma_2 = 0.59$ were taken into consideration. The samples were selected on simple randomized sampling method from the working shift list, prepared by head of the section. They were assigned into experimental and control groups on block randomized (blocks were decided on the basis of sex). The criterion for inclusion in this research were as follows: Engagement of nurses in the emergency section, having at least six months working experience, the record of experiencing at least three to four cases of violence, falling within the age range of 22 to 55 years, not being in critical condition when answering questions. Furthermore, the criteria for leaving the study were being

disinterested in participation in the educational classes and taking leave of absence for more than one week during intervention. Having obtained the ethics code of Ajums.REC.1392.250 and the clinical trial code of IRCT201411309302N3 and necessary permissions and license for study in selected medication centers, the researcher referred to the emergency sections of selected hospitals to collect data.

The researcher selected the intended samples on simple randomized sampling method and assigned them into the control and experimental groups on the block randomized sampling method. The experimental group received an educational program, which comprised three sections. Contents of the first section were expression of the strategy of human resources being professional in the emergency section, cultural and local issues of the region, strategy of communication between patient and his/her family and those offering medication, teaching key concepts of the procedure of aggressive behaviors and violence, explanation of personal problems of people and methods of self-protection and using understanding the reasons behind aggression and awareness of factors influencing communication. The second section also comprised of techniques of confronting violence to tranquilize patients and the companions (*détente* which is a method to respond to the participants). The third part also consisted of arguments on the behaviors making aggression inevitable, self-defense, threat-free environment with the goal of self-protection and assistance and avoiding violence. The education was offered in 16 one-hour month-long workshops, held once in two days. The program also featured active speech, small group discussions, dialogue, role plays by the researcher and a member of the emergency staff.

The questionnaire included three sections: The first part was the questionnaire of the personnel's demographic features like age, sex, marital status, educational status, working experience in the medication centers, working experience in the emergency section. The second part was related to the tool of facing aggression and violence, used for the first ever by Denis (2003). The third part focused on the personnel's perception on facing the aggressive and angry patients in the working environment, measuring the attitude of the nurses

on safety, responsiveness and security in the working environment in dealing with violence and aggression in the working environment [15]. Bodagh et al. (2019) had also pointed to the issue in their research [16]. To use the questionnaire in this research, it was translated and re-translated by a team of qualified bilingual (Persian and English) translators, who were experts in psychology and sociology. The validity and reliability of the instrument was also checked in order to be used. To estimate the reliability, content validity estimation tools were used: The translated versions of the main questionnaire were given to 10 members of the board of instructors of Jondi-Shapur University of Medical Sciences and also to two psychology experts, whose specialization fall within the scope of aggression.

The content validity estimated for violence was found to be 0.87 and the tool for perception 0.98. After corrections based on the recommendations, the content of the questionnaire was re-investigated and brought to final verification (in terms of validity). To estimate the reliability of the instrument, the test-retest method was used: The questionnaires were given to 20 nurses of the emergency sections and they were asked to fill up the questionnaires again after a one week interval. Internal consistency of all the three questionnaires was estimated through Cronbach's alpha. The Cronbach's alpha for the questionnaire of dealing with aggression was 0.88 and for the questionnaire of attitude towards aggression was 0.71, which show acceptable reliability for the above-mentioned instruments. Furthermore, using the split-half method, internal consistency of different sections of the questionnaire was estimated (0.76). Regarding limitations of the samples, the questionnaires were given to the emergency nurses again after 15 days. After collection of the data, the perception level of the nurses was measured quantitatively through the mean score, gained from the questionnaire, in order to compare the groups before and after the intervention.

Then, descriptive statistical methods, including tables of frequency distribution, diagrams and figure indices like means and standard deviation, were used for analysis of the data and description of the variables under study. Kolmogorov-Smirnov test was used to check whether the data are normal. Then, Independent Samples t-test and

Paired sample t-test were used for inter- and intra-group comparisons (before and after the intervention). Furthermore, with respect to other variables, chi-squared test was used. The level of significance of the said tests was taken to be 0.05 and the data were analyzed using the SPSS 20.

Results

In this study 90 nurses, engaged in selected centers in Khorramabad city, were selected on simple random selection method and were assigned into experimental and control groups on

block random basis as findings of an article, entitled "Presentation of an ACT-SMART Educational Planning Pattern for Violence in the Overriding Division," by Bodagh et al. (2019) had referred to [16]. All the research samples in the experimental and control groups reported that had not previously taken part in the educational programs for changing perception towards violence and anger control. Table 1 shows distribution of the scores of the questionnaire of perception before and after the educational program were normal for both groups.

Table 1: Normal Distribution of the Experimental and Control Groups' Scores on the Perceived Level Questionnaire before and after the ACT-Smart Program (Kolmogorov-Smirnov Test)

Group	Variable	Frequency	Mean Score from 40	Standard Deviation	KS Test	Probability Level	Result
Experimental Group	Perception after Treatment	44	35.85	3.21	0.751	0.625	Normal Distribution
	Perception before Treatment	44	36.31	2.58	1.083	0.192	Normal Distribution
Control Group	Perception after Treatment	44	35.52	4.52	0.873	0.431	Normal Distribution
	Perception before Treatment	45	36.79	5.06	0.936	0.345	Normal Distribution

Table 2 shows that per the Student's t-test no major difference was observed in the mean score of the control group's self-confidence before and after the intervention (p=0.228). Moreover, no

difference of statistical significance (p=0.181) was observed in the mean score of perception before and after the intervention.

Table 2: Mean Score of the Perceived Level of the Control Group Participants Before and After the ACT-Smart Program

Index / Variable	Frequency	Mean Score	SD	Mean Promotion Score	T-Value	df	Probability Level	95% Confidence Interval		
								Low Level	High Level	
Control Group's Perception on Violence	Before Intervention	44	36.79	5.06	-1.31	1.359	40	0.181	-0.61	3.16
	After Intervention	44	35.52	4.52						

Table 3 shows that based on the Student's t-test, major difference is observed in the mean score of the experimental group's self-confidence before and after the intervention and the self-confidence

score grew by more than five points (p=0.000). This is while no difference of significance is observed before and after the intervention (p=0.402).

Table 3: Mean Score of Perceived Level of the Experimental Group Participants Before and After the ACT-Smart Program

Index / Variable	Frequency	Mean Score	SD	Mean Promotion Score	T-Value	df	Probability Level	95% Confidence Interval		
								Low Level	High Level	
Perceived Violence	Before Intervention	44	36.31	2.58	-0.46	0.848	40	0.402	-0.64	1.56
	After Intervention	41	35.85	3.21						

Table 4 shows that per the Student's t-test no difference of significance is observed in the mean

scores of the two groups' perception promotion after the intervention (p=0.466).

Table 4: Compared Means of Promotion of the Scores of Perception of the Experimental and Control Groups' Nurses after Treatment

Variable	Group	Frequency	Mean Score Promotion	SD	T-Test Value	df	Probability Level
Perception	Control	44	-1.27	6.20	-0.733	83	0.466
	Test	41	-0.46	3.50			

Discussion

The goal of this study was to examine the effect of ACT-SMART on perception of nurses on dealing with violence in the emergency section of the educational hospitals in Khorramabad city. The results of this study showed no significant improvement in the score of perception on violence management before and after the intervention. The finding is in accordance with results of a study by Kahil with the goal of investigating the effect of eight-hour ACT-SMART, using the self-report form given to the emergency section nurses, and also determining the extent of nurses' dealing with aggression and violence in the working environment. The results showed that verbal violence was extremely in a high level. Furthermore, the Attitudes and Communication Techniques for Scripps Mercy Aggression Reduction Training (ACT-SMART) managed to effectively improve nurses' self-confidence in having the ability to manage patients' aggression; however, it failed to make any change in their perception on management of violence [17]. The result contradicts the findings of a study by Kontio on "Impact of eLearning Course on Nurses' Professional Competence in Seclusion and Restraint Practices: A Randomised Controlled

Study [18]. That may have been resulted from the type of (content and method of) training intervention and the difference in the instruments for investigation of the perception. Moreover, Needlham et al. showed that five-day training failed to change perception of nurses on violence and their attitude towards aggression of the patients. The tool used in the study was brief copy of the Perception of Aggression Scale (POAS), which had been used for the first ever. Results of this study failed to observe any significant change between the control and experimental groups, which is in agreement with the findings of the above-mentioned article.

The result might have been justified on several grounds: Firstly, 51% of the respondents had answered which does not seem to be proper. Secondly, the summarized copy served as the tool for the study and was used for the first ever and it might not have been sensitive enough to identify miniature differences. Thirdly, the average age of the nurses in the study was about 38 years with average nine years of experience in a psychological nursing environment, whereas the mean age of the participants in this study was 30 years and all had records of working in the emergency section. A factor of change might have had the most effect on a young group [19].

Hahn et al. used a pre-test and post-test study to investigate the effect of a five-day violence management ACT-SMART on perception of the psychological hospital nurses on reasons of violence and aggression. The results showed that ACT-SMART failed to make any change in the nurses' perception on reasons of violence and aggression. Results of this study are only consistent with results of the above-mentioned study in terms of the effect on the external and internal and conditional dimensions. The reasons for the controversy might be as follows: Firstly, the difference might have been due to the structure, content and method of implementation of the education program. Secondly, the reason for the disagreement might be assessment of attitude in the two studies. This study collected the data one month after training, while in the above-mentioned study, the questionnaire of perception was filled up three months after the intervention [20].

Deans studied effect of an education program, organized for emergency section nurses, to investigate management of the violent conditions. The one-day education program, repeated for three days, aimed to study its effect on knowledge, attitude and skill of the emergency section nurses to prevent and manage violence. The results showed that the participants showed more self-confidence and tranquility after the violent event and played the role of a team member in managing the aggressive conditions. This study in fact concluded that growing knowledge of the emergency section nurses towards nature of the problem lead to promotion of their skills in controlling the aggressive behaviors in the working environment [15]. Therefore, results of the study, that education program had very positive effects in upgrading the ability of nurses in positively managing the aggressive behaviors, are not in agreement with this study because this study also showed that emergency section nurses, receiving basic trainings, can get well prepared for management of the violent conditions and anger.

Furthermore, Gerdtz et al. conducted a study in 18 emergency sections in Australia to investigate the effect of short-term education program on the attitude of the staff towards prevention of violence. A total of 471 emergency section nurses took part in 45-hour education program, entitled

'The Management of Clinical Aggression: Rapid Emergency Department Intervention (MOCA-REDI)'. Alike this study, the instrument used in the research was Management of Aggression and Violence Attitude Scale (MAVAS). Results of the study are not similar to findings of this study in terms of the dimension of management because short-term education could make significant improvement in attitude of the staff towards prevention of the patient's violence. However, the results are in agreement with this study in terms of the external-internal dimensions and conditions [21]. The reason might be perhaps: Firstly, the content of education because the issues arising in the course covered management of tension, anger management and problem solving, self-confidence, which only could make significant change in violence from managerial point of view. Secondly, data for this study were collected one month before the training, while the above-mentioned study collected the data three months after the intervention.

It seems that obviously success of a nurse in easing tension of an aggressive patient could affect his/her attitude gradually. Raising personal ability would positive change the attitude. Therefore, it seems that to make changes in the attitude more time is needed and also increase in content of education and investigation of the level of attitude in different times would be necessary. Results of this study showed that there was not much change in the perception level of the personnel, though reduction in violence was not so much high and education might not have been so accountable for the downward movement of violence; however, growing awareness of the emergency nurse on the nature of the problem and promotion of her knowledge and skills and attitude in managing the aggressive behaviors might not be ineffective in this respect. Moreover, compiled educational program leads to people's more awareness of the cycle of aggression and violence, trainings on specific communication skills and the techniques of diagnosis and adequate intervention in violence, the nurse's respect for the dignity of the patient and his/her family and eventually managing to keep the aggressive patient tranquil and checking violent events. This study was done in Shohadaye Ashayer Hospital of the city of Khorramabad and since a control group was involved in the process,

the results can be generalized to other hospitals and emergency sections. With regards to results of this study, it is suggested to take more sample sizes and spend longer time for this study and launch more comprehensive interventions for changing the perception level.

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Conflict of interest

The author declares no conflicts of interest.

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