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Research Article

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The Impact of Hand-on Training in the Implementation of Verbal De-Escalation Techniques to Manage Trauma Related Aggressive Behaviors in a Forensic Psychiatric Facility

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Abstract

In forensic psychiatric arena, nurses deal with agitated patients more frequently than any other healthcare providers. To equip nursing staff with self-efficacy to best manage aggressive behavior, the paper sought to present on the one hand the benefits of hands-on experience in a forensic psychiatric unit, and on the other the increase of nurses' self-efficacy needed in the implementation of verbal de-escalation techniques. In a mixed analytic method, the paper interviewed 9 nurses to inquire about their pre-training and post-training confidence in dealing with agitated patients, and conducted a 10-question survey of concerned 9 (N=9) nurses. An intervention was performed to achieve nurses' self-efficacy. It was determined that theoretical training coupled with on-site experience increased nurses' self-efficacy in handling patient aggression and agitation, and that there was a higher understanding of de-escalation techniques among nurses, with a decrease of agitation-related injuries in the unit.

Keywords: Forensic; Nursing; Verbal de-escalation; Hands-on training; Restraints; Seclusion; Efficacy; Aggression; Agitation

Introduction

Nurses at the frontline of forensic psychiatric healthcare are exposed to one of the most dangerous places of modern workforce. This is compounded by the fact that the risk of patients committing violence implies major challenges throughout the care process in forensic psychiatry. A large part of the challenges is in the effectiveness of the training afforded to nurses to handle agitated patients. For example, research has been done to "investigate transition programmes for New Graduate Nurses (NGN) into mental health care, and their experiences of role transition and evaluations of participation in transition programmes" [1]. By the same token, research on programs giving nurses hands-on skills of de-escalation is lacking. This paper was intended to fill this gap.

Background

This study was conducted in a 33-bed admission unit of Napa State Hospital, a state-sponsored forensic psychiatric hospital located in Napa Valley, CA. The facility champions the use of less restrictive interventions in the management of aggressive behavior as recommended by health regulatory agencies such as Joint Commission (JC) (www.jointcommission.org) and Centers for Medicare and Medicaid Services (CMS) (www.cms.gov). Indeed, the Agency for Health and Quality (AHRQ) (AHRQ, 2015) data collected in the United States and Europe reveal that 10% to 30% of agitated patients admitted to acute psychiatric hospitals were managed through restraint and seclusion. Napa State Hospital is not an exception.

The hospital statistics from 2010 to 2017 shows an increase in the use of restraint and seclusion in the management of aggressive behavior, although nursing staff members are constantly trained to use less restrictive techniques to handle such behaviors. Meanwhile mental health policy stipulates "seclusion should only be used as an intervention of last resort and for the minimum possible duration" [2]. The statistics confirms the difficulty facing nursing staff in forensic setting. Also worthy of note here are studies suggesting less than significant effectiveness of chemical restraint in managing agitation in healthcare facilities [3]. This paper emphasized nurses' self-efficacy to seamlessly address aggression and agitation of forensic psychiatric patients.

Population

The population sample of this paper includes 9 permanent nursing staff members, comprised of Registered Nurses (RN's), Psychiatric Technicians (PTs), and Psychiatric Technician Assistants (PTA's) working in an admission unit from 14:30 to 23:15. In fact, in a forensic psychiatric environment, a holistic and individualized patient's approach encourages teamwork and inter-disciplinary collaboration to yield expected outcomes, which is imperative in reducing the use of restraint and seclusion in management of aggressive behavior. However, it appears that this nursing cohort has members trained at different academic levels.

This research was undertaken in a unit that treats patients with criminal backgrounds but for various reasons these patients were sent by the judge to the hospital for adequate treatment to gain their competency in order to stand trial. Their diagnosis encompasses a plethora of psychiatric diseases including schizophrenia, schizoaffective, bipolar disorder, depression, alcohol and drug-induced psychosis, personality disorders, poor impulse control disorders, etc.

Question of interest

This paper's question of interest is: how do nurses handle an agitated patient? The question aims to capture the ways in which nurses resolve aggressive behavior seen among forensic psychiatric patients. The answers received will help assess how to improve nurses' self-efficacy in an admission unit.

Study

While there is in psychiatry a vast body of literature on simulation [4] and theoretical training and intervention [5-8], little to no attention is given to the field of forensic psychiatry. One immediate

consequence is the lack of research on coupling theoretical training with hands-on experience in forensic psychiatric facilities.

The first phase of this paper research consisted of educating RNs, PTs, and PTAs on one-on-one de-escalation technique. The educational content was divided into three modules, based on the seven elements of English Modified De-escalation Aggressive Behavior Scale (EMDAS) [9]. Nonetheless, these elements were adapted to suit forensic psychiatric patients and hospital requirements. The three modules mentioned above encompass: (1) Safety, (2) Therapeutic communication/patient's approach, and (3) Verbal de-escalation. The modules aim to help nursing staff members to acquire social and emotional skills needed to psychologically de-escalate aggressive behavior.

The safety module enhanced the staff assessment of patients' environment and behavior as well as staff support. The safety module helped nursing staff to avoid being victimized or becoming an easy target of aggressive patients. Therapeutic communication aimed to establish or initiate mutual trust between an aggressive patient and staff. It was through therapeutic communication that nursing staff worked on patients' fear and anger, and provided them guidance and support.

The de-escalation module emphasized the aim of verbal de-escalation technique and its evaluation. It also stressed the fact that verbal de-escalation does not mean that an agitated patient will totally agree with a staff's proposal, but rather, it consists of preventing any opportunity that can lead to the use of coercive technique [10].

Methods

Data collection was completed through a mixed methodology comprised of qualitative and quantitative methods.

Qualitative research

Qualitative research was chosen to yield an in-depth inquiry. Indeed, "qualitative methods are used to provide a 'thick description' or depth of understanding to complement breadth of understanding elicit the perspective of those being studied, explore issues that have not been well studied" [11]. This paper looked at agitation among forensic psychiatric patients, a phenomenon largely under-studied. Thus, qualitative interview was undertaken with open-ended or semi-structured questions asked to 9 nurses to probe how they felt about pre-training and post-training confidence. Qualitative data were collected using the Confidence in Coping with Patient Aggression (CCWPA) [12]. Qualitative data came from after event- debriefing and other fields data collected during discussion. In short, qualitative research results strengthened the validity of the intervention while the field notes analysis helped to deepen the application of the intervention because the field notes were generated by every nursing staff who participated in de-escalation of the agitation episode [13].

Quantitative research

As Smith and Hasan explained, "quantitative methods are especially important to explore the extent and variation of change (within and across units)" (2020, p.2). The paper sought to see change in nurses' ability to handle aggressive behavior [14].

Quantitative Data Analysis: Repeated Measure ANOVA (RM ANOVA) test was used to measure participants' self-efficacy [15]. The survey was made of 10 questions sent to 9 nurses. RM ANOVA is a parametric statistical method used to measure related, not independent groups. Data from pre- and post- training tests were recorded and analyzed using RM ANOVA. The ratio between successful interventions versus unsuccessful interventions enabled to evaluate the outcomes of the intervention.

RM ANOVA helped to explore a correlation between training on verbal de-escalation, nurses' self-efficacy, and nurses' skills and knowledge impact on quality of care (reduction in the use of restraint/ seclusion). The study aimed to increase nurses' self-efficacy to avoid the use of restraint and seclusion. Therefore, the RM ANNOVA was appropriate tool for statistical measure of the results collected.

The CCWPA survey data were entered into SPSS software for analysis. The ten survey questions were graded on a 11-point Likert scale with 1 referring to: most uncomfortable, very uncomfortable, a little uncomfortable, uncomfortable, neutral, comfortable, very comfortable, a little comfortable, most comfortable according to the topic of the questions posed (e.g., safe, able, self-assured, effective, etc.).

An example of question asked: How comfortable were you?

- Most uncomfortable
- Very very uncomfortable
- Very uncomfortable
- A little uncomfortable
- Uncomfortable
- Neutral
- Comfortable
- A little comfortable
- Very comfortable
- Very very comfortable
- Most comfortable

Findings

The results gathered from the paper display a wide array of insights into ways in which nurses handled aggression before and after the intervention training.

Quantitative data

The SPSS tool helped to elaborate the descriptive statistics of the data. The mean values were generated to summarize the central tendency for each survey question for both the pre- and post-intervention questionnaires (Figure 1).

Descriptive Statistics

	Question	Mean	Std. Deviation	N
Pre	1	7.00	1.414	9
	2	6.11	1.054	9
	3	5.11	1.537	9
	4	6.67	1.732	9
	5	6.22	.833	9
	6	6.11	1.364	9
	7	6.00	2.398	9
	8	6.44	1.014	9
	9	6.56	1.424	9
	10	6.22	1.641	9
	Total	6.24	1.501	90
Post	1	9.33	1.225	9
	2	10.00	.707	9
	3	7.00	1.803	9
	4	8.89	.928	9
	5	10.22	.667	9
	6	8.78	1.641	9
	7	8.56	1.810	9
	8	9.89	.601	9
	9	8.44	1.130	9
	10	7.33	1.732	9
	Total	8.84	1.614	90

Figure 1: Descriptive statistics.

Descriptive statistics shows that before the survey, on average, participants' efficiency level was at 6.24. The lowest value, which is 5.11, comes from question 3 and the highest value, which is 7, comes from question 1. After both theoretical and hands-on training, the survey scores' average level went up to 8.84. Question 3 had the lowest increased value of 7, and question 5 the highest increased value of 10.22. The percent change (delta Δ) was then calculated to summarize the pre-post change in mean score values. Standard deviation (df) for each question pre- and post-training, mean squared, Sphericity (F), P-value (Sig), and Eta Squared were generated (Figure 2).

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
factor1	Sphericity Assumed	304.200	1	304.200	596.796	.000	.882
	Greenhouse-Geisser	304.200	1.000	304.200	596.796	.000	.882
	Huynh-Feldt	304.200	1.000	304.200	596.796	.000	.882
	Lower-bound	304.200	1.000	304.200	596.796	.000	.882
factor1 * Question	Sphericity Assumed	35.022	9	3.891	7.634	.000	.462
	Greenhouse-Geisser	35.022	9.000	3.891	7.634	.000	.462
	Huynh-Feldt	35.022	9.000	3.891	7.634	.000	.462
	Lower-bound	35.022	9.000	3.891	7.634	.000	.462
Error(factor1)	Sphericity Assumed	40.778	80	.510			
	Greenhouse-Geisser	40.778	80.000	.510			
	Huynh-Feldt	40.778	80.000	.510			
	Lower-bound	40.778	80.000	.510			

Figure 2: Tests of within-subjects effects.

Since there were only two scores levels (pre and post) within participants, sphericity F can be inferred. Looking at our Tests of Within-Subjects Effects: $F_{(1, 80)}=596.796$; p-value (Sig.)=0.000 (<0.05); and Partial Eta Squared=0.882. The conclusion at 5% level of significance is that there is a significant difference before and after the training. In other words, there was an improvement or increase in the efficiency of participants after the training (Figure 3).

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	10245.356	1	10245.356	2961.323	.000	.974
Question	79.867	9	8.874	2.565	.012	.224
Error	276.778	80	3.460			

Figure 3: Tests of between-subjects effects.

For the interaction between the training and the participants, sphericity was inferred. The output shows: $F_{(9, 80)}=7.634$; p-value (Sig.) is 0.000 (<0.05); and Partial Eta Squared=0.462. That is to say, at 5% significance level, there was an interaction between the training and the participants. The training had an effect on the participants' performance. The Levene's test of Equality of error variances and tests of between-subjects' effects were run to verify the dependent variable across groups and to confirm the main effects of training on participants (Figure 4).

Levene's Test of Equality of Error Variances^a

		Levene Statistic	df1	df2	Sig.
Pre	Based on Mean	1.529	9	80	.152
	Based on Median	.938	9	80	.497
	Based on Median and with adjusted df	.938	9	52.313	.501
	Based on trimmed mean	1.513	9	80	.158
Post	Based on Mean	1.803	9	80	.081
	Based on Median	.750	9	80	.662
	Based on Median and with adjusted df	.750	9	50.489	.662
	Based on trimmed mean	1.581	9	80	.135

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Question
Within Subjects Design: factor1

Figure 4: Levene's test of equality of error variances.

The profile plot helped to visualize the difference between pre and post-training (Figure 5).
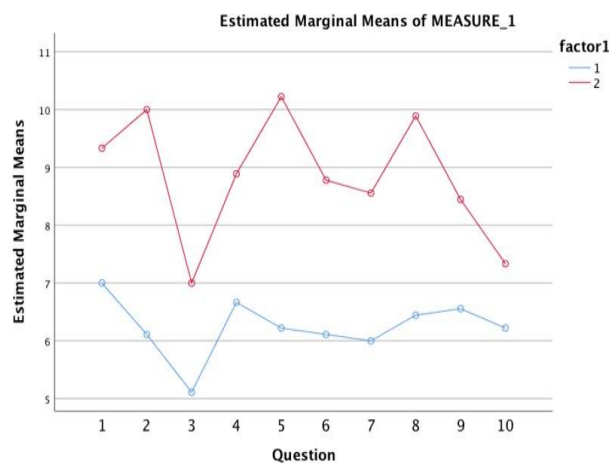

Figure 5: Estimated marginal means of measure-1.

For further analysis of the impact on patient's quality of care and nurse culture change, the comparison between nurse's intervention outcomes to verbally de-escalate agitated patients was initiated. Therefore, the hands-on training was used to enhance nurse's capacity to implement the verbal de-escalation when dealing with aggressive patients. The intervention that yielded positive outcomes versus intervention that did not help to de-escalate agitated patients reflected the outcomes of nurse's assimilation of the training content and their capacity to implement it, which was an indication of culture shift. The percent of positive or ratio of positive outcomes versus percent of negative outcomes illustrated the impact of training on patient quality of care and nursing culture shift from the use of coercive techniques to less restrictive techniques. Nursing staff intervention to deal with agitation or aggression counted for 16 incidents between 12 patients. The nursing verbal de-escalation interventions yielded 11 positive outcomes, 3 negative outcomes, and 2 interventions were not counted because the verbal de-escalation processes were interrupted for various factors, one of which being schedule in the unit. This means the project had 78.5% ((11/14) × 100) of successful interventions and 21.5% ((3/14) × 100) of unsuccessful interventions with agitated patients (Figure 6).
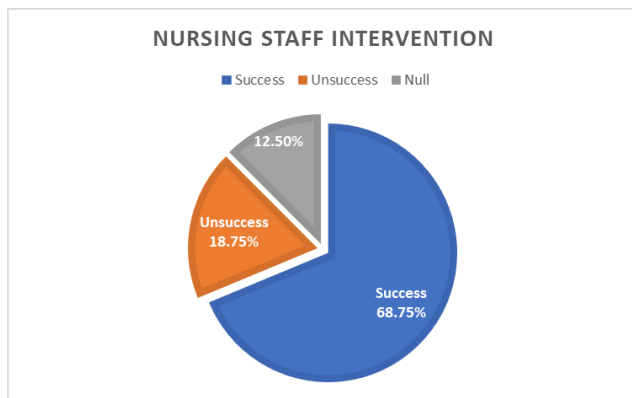
Figure 6: Nursing staff intervention.

One point worth-noting is that 4 newly admitted patients were at the center of all these incidents although the intervention involved 12 patients. These four patients presented a combination of psychosis and impulsiveness. The patients concerned in three unsuccessful interventions were very psychotic. Staff requested help from hospital police to give them the needed psychotropic medications to decrease their level of aggressiveness. The crux of the matter is that nurses showed understanding and empathy in dealing with them although their situations were challenging and frightening.

Qualitative data

Qualitative data were analyzed using coding, categories, and themes [16]. To explore participants' insights and experienced emotions during their interventions to verbally de-escalate agitated patients, a collection of qualitative data during the after-event debriefing was held because this was the best time to collect participants' insights and experiences. The debriefing was an oriented discussion exploring participants' visions, emotions experienced, and self-reflections on how they might handle similar aggressive patients in the future, for example: what worked or did not work, why did it work or it did not work? How did it look like? what do you think? etc. were some of the questions asked during the debriefing. Participants were also asked some questions from the checklist containing the ten domains of verbal de-escalation to reinforce their skills and knowledge. For instance, was the incident area well scanned for possible weapons? How was the leader's language, inviting or non-inviting? How was the support system? What was missing? From debriefing discussions, the focused group observation and field notes were collected and selected in the unit of analysis later. In the first stage the primary concepts (29 codes) were derived from the data. From the 29 codes 13 categories were extracted and grouped into two categories higher and lower categories, according to properties, dimensions, and similarities of each concept/code. From the higher and lower categories seven main conceptual categories were generated. For in-depth and rigor of findings, re-checking with and re-interviewing the participants on the main concepts to extract themes or categories were performed and four themes were generated: (a) Evidence-based technique as a turning point, (b) Inadequacy of past violence intervention techniques, (c) Need for individualized treatment, and (d) Incident care as time consuming and scary intervention.

As explained earlier, the analysis of field group focused notes helped to undertake a qualitative analysis of the findings through codes, categories and themes. In addition to the number of nursing staff interventions during the implementation, the hospital incident management in the Wellness and Recovery Model Support system (WARMSS) was used to allow for a broad view on the number of restraints and seclusions used across the hospital in different admission units to manage aggressive patients. Although such a comparison was not directly related to this paper, it showed the impact of the study intervention in its setting and the extent to which incidents of restraint and seclusion were used across the hospital in the management of agitated patients during the period of the study implementation.

The CCWPA survey scores showed 41.2% overall increase in nurses' confidence in dealing with aggressive behaviors. The pre- and post- training standard deviations of 1.225 and 1.614 respectively yielded a Coefficient of Variation (CV) of .241 for pre-training values and .182 for post-training values. The Coefficient of Variance (CV) demonstrated that the score values were close to each other. This result aligns with evidence that championed verbal de-escalation training to improve participants' confidence [17,18]. One key contribution of this project, however, was for nurses to be self-efficient in dealing first-hand with aggression or agitation. Most research on de-escalation looks at nurses in general, leaving aside frontline nurses in psychiatric arena.

The greatest areas of improvement were questions 5, 2, and 8 with mean values increase of 4.0, 3.9, and 3.4 respectively. It appeared that participants had great confidence to psychologically de-escalate agitated/aggressive patients. The hands-on interventions encouraged participants to implement psychological interventions while the situations faced were quite challenging. During the implementation period, the total number of interventions that yielded positive outcomes (78.5%) superseded negative intervention outcomes (21.4%). This implies that a main objective of both segments of the theoretical training and hands-on training were successfully accomplished. The finding corroborates prior research that noted successful outcomes in challenging situations, increasing staff listening and empathy [19]. However, one contribution of this project worth-mentioning was to propose detailed policies about de-escalation techniques, which would enable a clear and precise understanding of nursing staff, without which confidence will be insufficient if not inefficient.

Discussion

The results of the CCWPA survey data analysis revealed that verbal de-escalation educational intervention has increased nurses' self-efficiency and their capacity to utilize verbal de-escalation when interacting with aggressive or agitated patients. This paper's finding verifies prior inquiry observing that "staff education and skills training programmes should emphasize the importance of interpersonal styles which could help to promote and enhance positive interactions" [20]. Interactions between nursing staff and belligerent patients are an essential tool in foiling aggression and agitation.

As demonstrated by participants' survey results and nurses' insights, verbal de-escalation training is key in the care of aggressive patients. This observation matches with the one made in prior nursing studies that "staff should be educated on a diverse range of de-escalation techniques" [21]. However, this paper went further by combining theoretical training with hands-on training about de-escalation. The success observed with the implementation outcomes of

this project highlights the importance of combining both verbal de-escalation theoretical and hands-on training in the working environment rather than relying on out-of-the unit training. This is because "many healthcare providers have been victims of verbal aggressions and physical aggressions as well as injuries at the hands of patients" [22]. The same holds true for agitated patients and their peers.

Health regulatory agencies recommend less restriction, except for safety reasons. Contrary to the simulation training on communication techniques recommended in healthcare by Hayden et al, hands-on or on-site training empowers nurses with more skills and knowledge in handling aggressive behavior [23]. The training helps nurses to use their strengths in implementing the intervention and improve their strategies for future interventions. The unpredictability of patients' behaviors that characterized psychiatric patients was well assessed during one-on-one intervention between agitated patients and health providers in the unit. One reason might "use of higher risk restrictive practices persists. This indicates de-escalation techniques are not used at optimum frequency and/or there are important factors limiting their use and effect". Interventions and hands-on experiences within the Napa State admission unit enabled nurses to gain greater confidence in dismantling violent behaviors.

Engaging agitated patients to get them to accomplish required tasks is a challenging experience due to the unpredictability of aggression. Nursing staff along with other healthcare providers should acquire skills that enable them to safely interact with frustrated patients. Therefore, acquiring social skills helps nursing staff to assess patient's daily baseline, while emotional skills allow nursing staff members to find strategies to interact with patient in a way that diffuses patient frustration, fear, and anger. This goal is attained by implementing hands-on training and de-escalation technique in the management of agitated patient as a standard of care in forensic psychiatric organizations [24-27].

Strengths and limitations

The strengths of this project consist of providing the organization with training modules on verbal de-escalation in tandem with evidence-based practice. The practice responds to national and international guidelines recommendations on verbal de-escalation while being located in an admission unit at Napa State Hospital. The hands-on training as a tool of theoretical and practical training helped nurses to individually face the reality of aggression and learn from it.

The limitations lie in two main factors. The first factor is that interventions were conducted with a limited number of participants and aggressive incidents in the unit. The aggressive incident episodes of behavioral issues that necessitated verbal de-escalation intervention by nurses came from a limited number of patients 12 over 32. More implementation time was needed to allow participants to face diverse patients with various aggressive behavioral problems.

The other factor resides in the fact that the organization management style did not favor a smooth and timely implementation of the project to reach the final goal which is providing the organization with a verbal de-escalation technique as a standard of care in the management of aggressive behaviors. To attain this goal, more data from different admission units with different populations such as female and adult patients are needed, although this project was successful in all young male adult unit. Bureaucratic management style and culture of state-sponsored hospital in the care of aggressive

behaviors were some of the barriers faced in providing the researcher with required tools for a smooth conduct of the project.

Conclusion

In forensic psychiatric health, nurses constantly face aggressive, agitated behavior that renders the working environment unsafe for staff and patients. However, responding to such behavior requires skills and knowledge that empower nurses to comply with regulatory agencies recommendation and that limit the use of restraint or seclusion in admission units. To enhance nurses' skills and knowledge in handling agitated or aggressive patients, nursing staff need to be clearly and precisely aware of how to apply verbal de-escalation techniques with agitated patients. Theoretical training alongside hands-on training in the real working environment help nursing staff members to learn and apply theory by capturing their limits and strengths. Nurses are thus equipped with social and emotional skills needed to psychologically de-escalate agitation.

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