ORIGINAL RESEARCH

Increasing self-efficacy: Lateral violence response training for nursing students

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ABSTRACT

The purpose of this study was to determine the effect a cognitive behavioral rehearsal intervention had on nursing students' self-efficacy to respond to lateral violence. This experimental, randomized cluster design study collected longitudinal data from 88 consented nursing students. Study data consisted of responses on the SADBS-R, a 10-item Likert-response scale which assesses self-efficacy specifically to lateral violence. Results determined there was a statistically significant increase in self-efficacy for each item on the SADBS-R. This increase was statistically significant for the intervention group at both data collection intervals (p = .000) when compared to responses from the control group. Grouping, then comparing, the summed responses into quartiles demonstrated a sustained improvement in responses, over time, demonstrating clinical significance. These results indicate that a cognitive behavioral rehearsal intervention can increase nursing students' self-efficacy to respond to lateral violence prior to entry to the nursing workplace, where it is likely to be encountered.

Key Words: Lateral violence, Nursing students, Cognitive behavioral rehearsal, Self-efficacy, Quantitative statistical analysis, Experimental

1. INTRODUCTION

Lateral violence, a form of workplace bullying occurring between nurses, is a prevalent and serious problem in modern health care. Characteristic behaviors are intended to belittle, demean, or otherwise undermine specific individual. Lateral violence and other forms of workplace bullying can result in deleterious consequences for targeted individuals[1–3] and negative consequences for institutions due to increased staff turnover rates.[4,5] Newly licensed nurses are at a particular disadvantage when faced with lateral violence.[6,7] Thus, it is imperative to provide newly licensed nurses with the tools necessary to effectively respond to lateral violence, prior to entering the workplace where it is likely to occur.

1.1 Background

Workplace bullying first gained attention in the 1960's when Swedish psychologist Heinz Leymann's work indicated alarming consequences for targets, including post-traumatic stress disorder and, in extreme cases, suicide.[8,9] Since Leymann's initial work, workplace bullying has been studied in numerous work settings, including nursing. Estimates of the prevalence of lateral violence range from 31%-85%.[10,11] Factors contributing to lateral violence include personal characteristics such as coping mechanisms or personality traits, organizational structure and culture, and environmental influences such as departmental or unit cultures and management styles. Lateral violence may take the forms of gossiping, bickering and clique formation, sabotage, undermining, ver-

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bal affronts (shouting, persistent criticism), non-verbal innuendo (eye rolling, sighing), scapegoating (blaming others for things that were not their fault), failure to respect privacy, breaking confidences, and withholding information needed to perform one's job.[12, 13] Negative consequences for targets of lateral violence commonly include depression, anxiety, obsessing about the bully, and loss of self-esteem[3] and can lead to burnout.[14] Institutions also bear the burden of lateral violence due to costs associated with increased absences, and staff turnover.[15] The Joint Commission's 2008 position statement called for an end to disruptive behaviors in health care settings, including lateral violence, which contribute to a decrease in the safety and quality of patient care.[16]

Employees who are dissatisfied with their work environment may eventually leave an institution if strategies such as ignoring the problem and voicing their concerns fail to resolve the situation.[17] Health care facilities have implemented zero-tolerance policies in response to TJC's call for action for reporting and managing instances of lateral violence and bullying. Despite these policies and the widely-know and far reaching consequences of the problem, the incidence of lateral violence persists. Fear of retribution by the bully(ies), known as the "whistleblower effect", continues to deter reporting[18, 19] and managers contribute to the cycle through lack of support for targets and failure to foster respectful unit cultures.[20, 21]

1.2 Newly graduated nurses

Newly graduated nurses are at particular risk for experiencing lateral violence and subsequent negative consequences.[6, 22–24] Burnout and increased staff turnover among newly graduated nurses have been positively linked to lateral violence,[7] in addition to negative psychological consequences, and perceived compromise to patient care delivery.[6]

Retaining newly graduated nurses will be essential in maintaining a sustainable nursing workforce. Job attrition among this population is estimated between 13%-60% within the first six months to one year of professional practice.[25, 26] Hostile work environment and lateral violence are consistently cited as leading contributors for this alarmingly high attrition rate.[10, 14, 25] The impending nursing shortage is predicted to reach 1.05 million by 2022[27] but this estimation does not take into account additional nurses needed as a result of increased attrition.

Previous research identifies the potential for students to be exposed to lateral violence during the course of their nursing education but unfortunately a lack of nursing curricula addressing the problem.[7, 14, 28–31] This scenario places newly graduates nurses at a disadvantage and may result in the development of maladaptive response formation prior to entering professional practice. Thus, in order to retain newly graduated nurses in the profession it is vital to equip them with effective response strategies to lateral violence prior to entry to the workplace where it is likely to be encountered.

1.3 Theoretical underpinnings

Social Cognitive Theory (SCT)[32] was used to guide the research presented in this paper. This theory describes a triadic reciprocalism between the constructs of person, behavior, and environment, allowing change in one construct to exert an influence over the other two.[33] Within the construct of person, self-efficacy occupies an influential role. Self-efficacy, or confidence in one's abilities, is subsequently impacted by its constructs of affect, motivation, cognitions, and behaviors. These constructs also exert reciprocal influence on one another, making it theoretically possible to impact all four constructs by operationalizing one.

2. METHODS

2.1 Purpose, aims, and variables

The purpose of this study was to determine the effect of a cognitive behavioral rehearsal intervention on nursing students' perceived self-efficacy to respond to lateral violence. The specific aims of this study were to determine the effectiveness of this type of intervention as applied to the concept of lateral violence and the effectiveness of this intervention among the specific population of nursing students. The research question associated with this study was: "What is the impact of a cognitive behavioral rehearsal intervention on nursing students' perceived self-efficacy in responding effectively to lateral violence?" The dependent variable in this research was perceived self-efficacy; the independent variable was the intervention group.

2.2 Research design

This research utilized an experimental, single-blinded, time-series, randomized-cluster design. Two private, pre-licensure, baccalaureate nursing programs within the same urban setting were selected by the Principal Investigator (PI). Each of the two programs served as a cluster, one receiving the intervention, the other serving as an equivalent control group. Clusters were assigned randomly to either the intervention or control group by a coin toss.

2.3 Participants and sampling

Participants within each cluster were recruited during their normally scheduled class time using convenience sampling techniques. Recruitment occurred two weeks before the intervention was scheduled. At the time of recruitment, the study

description, participants' role in the study, and participant rights were explained both verbally and by Informed Consent. Inclusion criteria for participation included enrollment in the final academic year of one of the nursing programs selected by the PI, ability to read and write in in English, and attendance in class on the day of the intervention. The exclusion criterion included enrollment in an Advanced Track (AT) baccalaureate nursing program. These programs allow students holding prior baccalaureate degrees to complete nursing studies in a condensed amount of time. It was thought that these students could have unique personal characteristics related to their prior education which could influence their responses on the study instrument.

Sample size

A priori power analysis indicated that 32 participants per cluster were needed to achieve a power of 0.80 and a moderate effect size of 0.35.[34] The study instrument contains 10 items with 10 participants per item needed for instrument validation. Each cluster completed the instrument at least twice, on the pre-test and post-test. Thus, 25 participants were needed per cluster in order to validate the instrument. Recruitment resulted in a total of N = 88, n = 41 from the intervention group and n = 47 from the control group. This recruitment exceeded the requirements to achieve the desired power and effect size and to validate the instrument.

2.4 Human subjects considerations

Institutional Review Board (IRB) approval was obtained at the PI's institution and at both study sites. Participants were provided a copy of the Informed Consent at the time of recruitment and given the option to wait the two weeks before the intervention before choosing whether to participate. The Informed Consent included a description of the study, the role of participants, rights to choose not to participate and right to withdraw without penalty, and PI contact information. Participants were given the opportunity to ask questions at the time of recruitment and on the day of the intervention. Participants also created their own individual identification codes according to a specified formula. This allowed pre-test data to be linked to post-test data, eliminated the need to collect any identifying information, and provided a method for participants to recall their identifiers.

2.5 Data collection

The instrument was completed with pen and paper. Pre-test and post-test data were collected on the day of the intervention. Follow-up post-test data were collected again three months later. Data were entered into an SPSS© file within 24 hours of collection. The electronic file was stored on the PI's password-protected computer and paper copies were stored in a secure, locked file cabinet in a private, locked office. Once collection was complete, data were cleaned multiple times to ensure completeness and accuracy. There were no missing data on any completed instruments.

2.6 Instrument

An adaptation of the Scale To Address Disruptive Physician Behavior© (SADBS)[35] was used to collect data and measure the dependent variable. Permission was obtained to adapt the SADBS© for this research. This instrument was selected for adaptation due to its measurement of self-efficacy as the outcome variable, closely related conceptual content, and previous psychometric evaluation. Reliability of the SADBS© revealed a Cronbach's α = 0.904, indicating high instrument reliability.[35] (Saxton, 2010). The SADBS© is a 10-item instrument, utilizing 0-10 Likert-type scaling. Participants are asked to rate their self-efficacy in responding to 10 prevalent disruptive physician behaviors. The SADBS-Revised©[36] utilized in this research retains the outcome variable measured and the 0–10 Likert-type scaling response formatting but replaces item stems of disruptive physician behaviors with 10 prevalent lateral violence behaviors, as indicated by the literature review. The SADBS-R© asks participants to rate their self-efficacy in responding to verbal abuses, non-verbal innuendo, gossiping, scapegoating, undermining, refusal to help, sabotage, failure to respect privacy, broken confidences, and withholding information needed to perform one's job.

The SADBS-R© also includes a social desirability item to determine whether participants had responded to items on the instrument truthfully. "I have never purposefully said or done anything to hurt someone's feelings" was selected from a list by Crowne and Marlowe,[37] for its conceptual link to lateral violence and ability to blend in with the 10 core instrument items.

2.7 Intervention

Cognitive Behavior Therapy (CBT) is a group of interventions linked to the constructs of SCT, operationalizing cognitions and behaviors as constructs of self-efficacy. Social Skills Training (SST),[38] a form of CBT, was adapted to the content of lateral violence for this research. SST teaches situational responses through a series of five essential steps: (1) education, (2) demonstration, (3) rehearsal, (4) feedback, and (5) debriefing/discussion.

Participants in the intervention group received a one-hour cognitive-behavioral training session on effective responses to lateral violence behaviors. This intervention was held during their normally scheduled class time, as arranged through the institution. Conducting the intervention during a time

when students would normally be engaged in academics on campus accomplished the dual goals of minimizing participant burden and maximizing participation. The development of this intervention was closely guided by SCT and included the salient five steps of SST: education, demonstration, behavioral rehearsal, feedback, and debriefing. During the first step, participants received education on the types of behaviors which constitute lateral violence and the negative consequences for targets. Next, the PI and research assistant (RA) engaged in role-play to demonstrate both ineffective and effective responses to common lateral violence scenarios. Third, handouts were distributed to the participants, containing scripted scenarios with lateral violence phrases and effective responses (see Table 1). Participants engaged in role-play with one another in pairs, allowing them to practice the behaviors demonstrated in the second step. The fourth step of SST is to provide feedback on behavior demonstration. The PI and RA observed the participants during role-play and provided feedback about their interactions. Feedback also occurred through the scripted interactions; effective responses were followed by a desirable outcome and stop of lateral violence behaviors, while ineffective responses were followed by undesirable outcomes and a continuation of the lateral violence behaviors. This step also allowed confirmation of the third assumption that participants would participate and engage in the intervention appropriately. The fifth and final step in SST implemented in this intervention was debriefing. During this last step, the PI led a guided discussion of the participants' experiences with the intervention. The importance of remaining calm, establishing mutual goals such as patient safety, and non-threatening phrasing of responses were among the guided topics during the discussion. Generalizability is an important function of the debriefing step, since no two situations encountered will be identical. Participants were also asked to share ideas about other situations in which the principles of the scripted responses could be useful and/or appropriate. However, discussions also evolve organically and useful information can be gathered in this way. Participants were asked to share their thoughts about lateral violence in general, impressions of the intervention experience and role-play, and ask any questions.

Table 1. Examples of scripted scenarios

Examples of Scripted Scenarios
(1) Verbal affronts
Bully: I don't know why you never get this right. We've gone over this a million times!!
New Nurse: I'm sensing that you are frustrated. I am frustrated too because I want to learn this. I feel like I learn best from people who give me really clear and constructive feedback. Can you explain this differently?
(2) Undermining
New Nurse: Can you please help me with this new procedure with my patient? I haven't done it before.
Bully: I'm busy right now (playing on cell phone, clearly not busy). You'll need to find someone else.
New Nurse: I want to make sure I deliver my patient care safely. When do you think you will be available to help?

2.8 Control group intervention

The control group received a one-hour exercise on stress reduction through time-management. This placebo intervention was also conducted during normally scheduled class time, as arranged by the site institution. The intent of this intervention was to provide the participants with a benefit in exchange for their time, while not addressing the issue of lateral violence. Participants were guided through a group discussion of common stressors in nursing school and stressors they anticipated encountering as newly graduated nurses. Next, a weekly planner was distributed with a list of common activities such as grocery shopping, studying, attending class, sleeping, and working. Participants were asked to assign each activity to a time slot within the weekly planner and encouraged to add any other activities they routinely performed. After participants had completed the time planning exercise, the PI led a brief discussion on obstacles they had encountered in fitting all activities into the planner and how they had been able to creatively manage time in order to schedule all necessary activities.

3. Results

SPSS version 20.0 was used to analyze data in this research. Multiple statistical techniques were utilized to describe the study population and answer the research question, including descriptive statistics, linear regression, and paired samples *t*-tests.

3.1 Descriptive statistics

Descriptive statistical techniques were used to describe the study population. Among the intervention group (n = 41), all participants were female; 80.5% (n = 33) were between the ages of 20-25 years; 12.2% (n = 5) were between the ages of 26-30 years, 4.9% (n = 2) were between the ages of

31-35 years; none were between the ages of 36-40 years; and 2.4% (n = 1) were 40 years or older. Previous experience with workplace bullying was reported by 80.5% (n = 33) of participants yet only 1.5% (n = 7) reported having received training on workplace bullying.

Age and gender distribution among the control group (n = 47) were similar to the intervention group. Females accounted for 91.5% (n = 43); 8.5% were male (n = 4); 78.7% of participants between the ages of 20-25 years (n = 37); 8.5% between the ages of 26-30 years (n = 4); 4.3% between the ages of 31-35 years (n = 2); none between the ages of 36-40 years; and 8.5% of 41 years or older (n = 4). In contrast to the intervention group however, 40.4% (n = 19) reported previous exposure to workplace bullying, while the remaining 59.6% (n = 28) had not, and 61.7% (n = 29) reported having received previous training about workplace bullying, while the remaining 38.3% (n = 18) had not.

No significant differences between the groups were found with respect to age (p = .594) or previous training (p = .083). However, the groups differed significantly with respect to gender and previous experience with workplace bullying (p = .000).

3.2 Instrument reliability

Reliability of the SADBS-R was first analyzed to determine whether social desirability had influenced participants' responses. Including the social desirability item, the Cronbach's $\alpha = 0.927$; without it, the Cronbach's $\alpha = 0.947$. Thus, it was concluded that the participants had not responded in a socially desirable manner. Next, pre-test and post-test reliability were examined separately, excluding the social desirability item. Pre-test reliability among the intervention group revealed a Cronbach's $\alpha = 0.925$; post-test reliability revealed a Cronbach's $\alpha = 0.937$. Overall, reliability of the SABDS-R among the intervention group was Cronbach's $\alpha = 0.947$.

Among the control group, pre-test data revealed a Cronbach's $\alpha = 0.950$, including the social desirability item. Excluding the social desirability item, reliability revealed a Cronbach's $\alpha = 0.963$. Thus, it was concluded that this group also had not responded in a socially desirable manner. Pre-test reliability revealed a Cronbach's $\alpha = 0.922$ and post-test reliability revealed a Cronbach's $\alpha = 0.939$. Overall reliability among this group revealed a Cronbach's $\alpha = 0.963$. The high overall reliability among both groups suggests conceptual overlap between two or more of the SADBS-R items.

3.3 Linear regression

Age, gender, previous exposure, and workplace bullying were thought to have possible impact on participants' responses on the instrument. Thus, linear regression was utilized to determine whether any of these variables were possible covariates. For all calculations, the cut off significance value was set at p = .001, in order to minimize the possibility of a Type I error. Among the intervention group, age regressed onto responses on the SADBS-R© at p = .027 on the pre-test and p = .288 on the post-test; previous exposure to workplace bullying at p = .239 on the pre-test and p = .323 on the post-test; and previous training on workplace bullying at p = .823 on the pre-test and p = .874 on the post-test. Gender was not regressed onto instrument responses for this group, since all participants were female. Among the control group, age regressed onto responses on the SADBS-R© at p = .024 on the pre-test and p = .072; gender at p = .104 on the pre-test and p = .209 on the post-test; previous exposure to workplace bullying at p = .183 on the pre-test and p = .054 on the post-test; and previous training on workplace bullying at p = .158 on the pre-test and p = .170 on the post-test. It was also hypothesized that age and previous exposure to workplace bullying could be positively correlated to one another. However, age regressed onto previous exposure at p = .203 among the intervention group and p = .283 among the control group, indicating no significant relationship. These results indicated that none of these variables were covariates.

3.4 Measures of central tendency

Among the intervention group, mean responses on the pre-test items scaled between 4.09-5.17 on the instrument scale and 6.70-7.69 on the post-test, demonstrating an overall increase in mean instrument scores. Standard deviations on the pre-test ranged from 2.35-3.51 points and 1.80-2.23 points on the post-test, indicating less variability in scores after the intervention. Among the control group, mean responses on the pre-test scaled between 6.10-8.10 points and 6.44 and 9.12 points on the post-test, indicating very little fluctuation in scores. Standard deviations on the pre-test ranged between 2.39-3.32 points and 2.04 and 2.67 points on the post-test, also not demonstrating noteworthy changes.

3.5 Paired samples *t*-tests

The research question associated with this study was "What is the effect of a cognitive behavior therapy intervention on perceived self-efficacy to respond to lateral violence among nursing students?" Paired Samples *t*-tests were performed to detect change between pre-test and post-test responses and answer the research question. Statistical analyses were performed using both individual and aggregate data.

Among the intervention group, the paired samples *t*-test analysis indicated a statistically significant increase between pre-test and post-test responses on all 10 instrument items at the

p = .000 level (see Table 2), with a high power of 0.95 and moderate effect size of 0.40. Next, both pre-test and post-test responses were compared to follow-up responses (see Tables 3 and 4). A statistically significant increase between pre-test and follow-up scores was indicated on all instrument items at the p = .000 level but there was no significant difference between post-test and 3-month follow-up scores on any instrument item (p = .790), indicating a sustained effect of the intervention.

Among the control group, paired samples t-test analysis indicated no statistical difference between pre-test and post-test scores, pre-test and follow-up scores, or post-test and follow-up scores at p = .000 (see Tables 5-7). The overall lack of change among the attention control group provides further support for the efficacy of the intervention and indicates absence of a placebo effect.

Table 2. Pre-test/post-test intervention group (n = 41)

Pairs		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
Pair 1	Pretest 1 - Posttest 1	-2.53659	1.55077	.24219	-3.02607	-2.04710	-10.474	40	.000
Pair 2	Pretest 2 - Posttest 2	-2.86585	1.89415	.29582	-3.46372	-2.26799	-9.688	40	.000
Pair 3	Pretest 3 - Posttest 3	-2.53659	2.96730	.46341	-3.47318	-1.59999	-5.474	40	.000
Pair 4	Pretest 4 - Posttest 4	-2.64634	2.15709	.33688	-3.32720	-1.96548	-7.855	40	.000
Pair 5	Pretest 5 - Posttest 5	-2.39024	2.48876	.35134	-3.17579	-1.60470	-6.150	40	.000
Pair 6	Pretest 6 - Posttest 6	-3.19512	2.24966	.38868	-3.90520	-2.48504	-9.094	40	.000
Pair 7	Pretest 7 - Posttest 7	-2.26829	2.32405	.36296	-3.00185	-1.53473	-6.249	40	.000
Pair 8	Pretest 8 - Posttest 8	-3.28049	2.34000	.36545	-4.01908	-2.54189	-8.977	40	.000
Pair 9	Pretest 9 - Posttest 9	-2.21951	2.19673	.34307	-2.90506	-1.52614	-6.470	40	.000
Pair 10	Pretest 10 - Posttest 10	-2.14634	2.40376	.37540	-2.91288	-1.38762	-5.717	40	.000

Table 3. Pre-test/follow-up intervention group (n = 41; n = 34)

Pairs		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
Pair 1	Pretest 1 - Follow Up 1	-2.74286	1.93030	.32628	-3.40594	-2.07978	-6.579	34	.000
Pair 2	Pretest 2 - Follow Up 2	-2.87143	2.58202	.43644	-3.75838	-1.98448	-8.406	34	.000
Pair 3	Pretest 3 - Follow Up 3	-2.94286	2.24844	.38005	-3.71522	-2.17049	-7.743	34	.000
Pair 4	Pretest 4 - Follow Up 4	-2.80000	2.51817	.42565	-3.66502	-1.93498	-6.578	34	.000
Pair 5	Pretest 5 - Follow Up 5	-2.80000	2.56446	.43347	-3.68092	-1.55285	-6.459	34	.000
Pair 6	Pretest 6 - Follow Up 6	-2.62857	2.34001	.39553	-3.43239	-1.46965	-6.646	34	.000
Pair 7	Pretest 7 - Follow Up 7	-2.51429	2.94430	.49768	-3.52569	-2.39508	-5.052	34	.000
Pair 8	Pretest 8 - Follow Up 8	-3.22857	2.42640	.41014	-4.06207	-1.50288	-7.872	34	.000
Pair 9	Pretest 9 - Follow Up 9	-2.25714	2.29248	.38750	-3.04464	-1.82475	-5.825	34	.000
Pair 10	Pretest 10 - Follow Up 10	-2.48571	2.71566	.45903	-3.41857	-1.91908	-5.415	34	.000

Table 4. Post-test/follow-up intervention group (n = 41; n = 34)

Pairs		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
Pair 1	Posttest 1 - Follow Up 1	-.05714	1.58936	.26865	-.60311	.48882	-.213	34	.833
Pair 2	Posttest 2 - Follow Up 2	.02857	1.91719	.32406	-.63001	.68715	.088	34	.930
Pair 3	Posttest 3 - Follow Up 3	-.11429	2.04035	.34488	-.81517	.58660	-.331	34	.742
Pair 4	Posttest 4 - Follow Up 4	-.30000	1.77482	.30000	-.90967	.30967	-1.000	34	.324
Pair 5	Posttest 5 - Follow Up 5	-.31429	1.71106	.28922	-.90206	.27348	-1.087	34	.285
Pair 6	Posttest 6 - Follow Up 6	.57143	1.61401	.27282	.01700	1.12586	2.095	34	.044
Pair 7	Posttest 7 - Follow Up 7	-.25714	1.83660	.31044	-.88804	.37375	-.828	34	.413
Pair 8	Posttest 8 - Follow Up 8	.24286	1.88013	.31780	-.40299	.88870	.764	34	.450
Pair 9	Posttest 9 - Follow Up 9	-.25714	1.86836	.31581	-.89895	.38466	-.814	34	.421
Pair 10	Posttest 10 - Follow Up 10	-.08571	1.93073	.32635	-.74894	.57752	-.263	34	.794

Table 5. Pre-test/post-test control group (n = 47)

Pairs		Paired Differences					*t*	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
Pair 1	Pretest 1 - Posttest 1	-.34043	1.97018	.28738	-.91889	.23804	-1.185	46	.242
Pair 2	Pretest 2 - Posttest 2	-.27660	1.67724	.24465	-.76905	.21586	-1.131	46	.264
Pair 3	Pretest 3 - Posttest 3	-.85106	1.80553	.26336	-1.38119	-.32094	-3.232	46	.002
Pair 4	Pretest 4 - Posttest 4	-.21277	1.84080	.26851	-.75324	.32771	-.792	46	.432
Pair 5	Pretest 5 - Posttest 5	-.68085	1.70812	.24915	-1.18237	-.17933	-2.733	46	.009
Pair 6	Pretest 6 - Posttest 6	-.46809	1.95438	.28508	-1.04191	.10574	-1.642	46	.107
Pair 7	Pretest 7 - Posttest 7	.02128	1.68741	.24613	-.47417	.51672	.086	46	.931
Pair 8	Pretest 8 - Posttest 8	-.55319	1.48629	.21680	-.98958	-.00696	-2.552	46	.014
Pair 9	Pretest 9 - Posttest 9	-.42553	1.42561	.20795	-.84411	-.11680	-.733	46	.046
Pair 10	Pretest 10 - Posttest 10	-.17021	1.59236	.23227	-.63775	.29732	-2.046	46	.467

Table 6. Pre-test/follow-up control group (n = 47; n = 44)

Pairs		Paired Differences					*t*	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
Pair 1	Pretest 1 - Follow Up 1	-.86364	2.69876	.40685	-1.68413	-.04314	-2.123	43	.040
Pair 2	Pretest 2 - Follow Up 2	-.31818	2.51297	.37884	-1.08219	.44583	-.840	43	.406
Pair 3	Pretest 3 - Follow Up 3	-1.02273	2.34757	.35391	-1.73645	-.30900	-2.890	43	.006
Pair 4	Pretest 4 - Follow Up 4	-.43182	2.19299	.33061	-1.09855	.23491	-1.306	43	.198
Pair 5	Pretest 5 - Follow Up 5	-.90909	2.49481	.37611	-1.66758	-.15060	-2.417	43	.020
Pair 6	Pretest 6 - Follow Up 6	-.54545	2.58308	.38941	-1.33078	.23987	-1.401	43	.168
Pair 7	Pretest 7 - Follow Up 7	-.36364	2.12505	.32036	-1.00971	.28244	-1.135	43	.263
Pair 8	Pretest 8 - Follow Up 8	-.18182	2.52681	.38093	-.95004	.58640	-.477	43	.636
Pair 9	Pretest 9 - Follow Up 9	-.61364	2.02560	.30537	-1.22948	.00220	-2.009	43	.051
Pair 10	Pretest 10 - Follow Up 10	-.13636	2.37811	.35851	-.85937	.58665	-.380	43	.706

Table 7. Post-test/follow-up control group (n = 47; n = 44)

Pairs		Paired Differences					*t*	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
Pair 1	Posttest 1 - Follow Up 1	-.52273	2.27717	.34330	-1.21505	.16960	-1.523	43	.135
Pair 2	Posttest 2 - Follow Up 2	-.02273	1.86134	.28061	-.58863	.54317	-.081	43	.936
Pair 3	Posttest 3 - Follow Up 3	-.20455	2.07510	.31283	-.83543	.42634	-.654	43	.517
Pair 4	Posttest 4 - Follow Up 4	-.22727	1.91522	.28873	-.80955	.35501	-.787	43	.436
Pair 5	Posttest 5 - Follow Up 5	-.18182	2.20225	.33200	-.85136	.48773	-.548	43	.587
Pair 6	Posttest 6 - Follow Up 6	.00000	2.04598	.30844	-.62204	.62204	.000	43	1.000
Pair 7	Posttest 7 - Follow Up 7	-.40909	2.30589	.34763	-1.11015	.29196	-1.177	43	.246
Pair 8	Posttest 8 - Follow Up 8	.43182	2.17168	32739	-.22843	1.09207	1.319	43	.194
Pair 9	Posttest 9 - Follow Up 9	-.15909	1.71102	.25795	-.67929	.36111	-.617	43	.541
Pair 10	Posttest 10 - Follow Up 10	.04545	2.05680	.31007	-.57987	.67078	.147	43	.884

3.6 Quartiling

Quartiling was performed to determine the distribution of positive impact of the intervention on participants' self-efficacy. Among the intervention group, instrument responses increased an average of 29.5 points among Quartile 1; 31 points among Quartile 2, 25.5 points among Quartile 3, and 12 points among Quartile 4 between the pre-test and post-test. Quartiling on instrument responses at the three-month follow-up revealed an overall increase of 31.5 points among Quartile 1; 31.5 points among Quartile 2; 22.5 points among Quartile 3; and 7 points among Quartile 4, as compared to the pre-test. In contrast, instrument responses demonstrated negligible increases between pre-test and post-test among the control group. Quartile 1 increased only an average of 2 points; Quartile 2 increased 4 points; Quartile 3 increased 1.5 points; and Quartile 4 increased 1.5 points. These findings lend further support to the impact of the intervention on the outcome variable of self-efficacy. Additionally, quar-

tiling from the intervention group demonstrated that the intervention increased self-efficacy among all participants but especially those reporting the least self-efficacy on the pre-test. Surprisingly, quartiling on the follow-up data among the control group indicated an overall increase of 14 points among Quartile 1; 7 points among Quartile 2; a decrease of 1 point among Quartile 3; and an increase of 0.5 points among Quartile 4. The surprising increases among Quartiles 1 and 2 are thought to be due to a maturation effect, since these students had gained considerable experience in clinical rotations during the three-month time lapse. Additionally, this may be accounted for by the attrition of three participants from the control group.

4. Discussion

The negative sequelae of lateral violence and workplace bullying, both psychological[1–3] and financial (Jones & Gates, 2007; Li & Jones, 2013) have been extensively studied; however the vast majority of current research is correlational and nursing students have not been included in experimental research. The growing body of literature on lateral violence recounting nursing students' experiences with lateral violence suggests that the younger generations may be less likely to tolerate these behaviors in the workplace. Given the increasing economic constraints of health care, it is crucial to find new and creative approaches to eradicating lateral violence among nurses.

The results of this research indicate that newly graduated nurses can be prepared to confidently manage lateral violence in the nursing workplace. Participants in this research reported an increase in self-efficacy to effectively respond to the lateral violence they are likely to encounter. Additionally, participants scoring the lowest in self-efficacy on the pre-test reported the highest and most sustained increases in self-efficacy on the post-test and three-month follow-up post-test. This indicates that the SST intervention utilized in this research is particularly useful to those who may need to increase their confidence the most.

The fifth and final step of SST, debriefing and generalizing, is crucial to the success of the intervention. Recent research found that the ability to generalize knowledge from the intervention was directly linked to improved scores on follow-up testing.[39] In this research, the anecdotal feedback shared during this step of the intervention supports the statistical and clinical results of data analysis. During the discussion, some participants shared their previous experiences with lateral violence, both in the workplace setting and during clinical rotations. They admitted that they either had not known how to respond to the bully, whether they were the intended target or had witnessed the bullying occurring to someone else.

4.1 Limitations

Attrition was the main limitation in this research. Of the 88 total participants who completed the initial study activities, 78 were present to complete the follow-up instrument. Reasons for attrition included non-attendance in their normally scheduled class time the day of follow-up data collection and lack of continued enrollment in their nursing programs.

4.2 Implications for future research

Future studies implementing the SST approach to increasing self-efficacy to respond to lateral violence should include repeated measures of self-efficacy at six months and one year on the SABDS-R©. Attrition from the first job and intent to leave should be included as variables measured in follow-up data, due to the high staff turnover rates among newly graduated nurses. Participants in future research should be expanded to include nursing students enrolled in Associate's Degree and Advanced Track programs, newly graduated nurses, and Schools of Nursing in varying geographic locations to increase generalizability of results.

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Conflicts of Interest Disclosure

The authors declare that there are no conflicts of interest.

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