ORIGINAL RESEARCH

The impact of vertical violence on nursing students' success and confidence

Amy Jackson, Jennifer Saylor*, Jennifer Graber

School of Nursing, University of Delaware, Newark, Delaware, United States

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ABSTRACT

Objective: This study aimed to explore the prevalence and impact of vertical violence on nursing students' academic outcomes and perceived self-confidence over a 12-month period.
Methods: A post hoc exploratory analysis of a cross-sectional descriptive study. Undergraduate student nurses (n = 70) between 18 and 25 years of age enrolled in traditional, 4-year baccalaureate programs in the United States. Participants completed the Incivility in Nursing Education-Revised survey and the Bullying Behaviors in Nursing Education tool. Bayesian data analysis was utilized to generate a predictive partition model to assess the probability of a relationship between vertical violence and student nurses' self-confidence.
Results: Roughly 42% of participants reported a lack of self-confidence related to incidents of incivility, yet their mean grade point average (GPA) was above 3.77. In the partition predictive model, 62% of the variation in confidence levels among student nurses could be attributed to incidences of bullying, incivility, and GPA. Of the 30 students who reported that their confidence was negatively impacted by one-on-one incidents of incivility, 73% reported that the incivility affected their confidence.
Conclusions: Vertical violence from nurse educators and clinical nursing staff negatively impacts student nurses' self-confidence.

Key Words: Bullying, Incivility, New graduate nurses, Self-confidence, Student nurses, Vertical violence

1. INTRODUCTION

Vertical violence, the phenomenon of incivility and bullying between those of varying hierarchical ranks, may impact student nurses' self-confidence.[1] Vertical violence can occur anywhere from clinical practice to higher education settings. Vertical violence towards student nurses during nursing school and the transition to professional practice has been a pervasive issue in nursing curricula across the United States, with estimates of up to 70% of student nurses and 60% of new graduates experiencing vertical violence.[2–4] However, this phenomenon is experienced worldwide among the nursing profession.

Many studies on vertical violence in nursing education employ qualitative approaches to describe students' experiences. Other studies propose interventions such as workshops to mitigate or prevent the problem. However, researchers have not yet examined the impact of vertical violence on undergraduate student nurses and its effects on academic achievement, learning outcomes, and professional preparedness. Although this phenomenon is common, its antecedents and consequences are not well understood. A potential consequence of vertical violence that is understudied is student nurses' self-confidence.

Across disciplines, student self-confidence is often linked to

*Correspondence: Jennifer Saylor; Email: jsaylor@udel.edu; Address: School of Nursing, University of Delaware, Newark, Delaware, United States.

elevated feelings of well-being.[5,6] However, student nurses may face challenges in fostering their self-confidence.[7] Self-confidence among student nurses has been acknowledged as a crucial factor in the successful completion of nursing curricula and transition to professional practice,[6,8] but it is not necessarily needed for the completion of nursing curricula. Therefore, this post hoc secondary analysis explored the relationship between vertical violence and self-confidence among undergraduate student nurses and offered considerations using self-confidence as a measure of academic success for student nurses.

1.1 Cultural and historical roots of vertical violence in nursing

Vertical violence is a pervasive issue in the nursing profession, affecting student nurses to nurse leaders.[9,10] For decades, it has been said that 'nurses eat their young.' While nurse educators and nurse scientists have attempted to pinpoint the root causes of incivility and bullying among student nurses, new nurse graduates, and experienced nurses, it is still unknown exactly why the nursing profession has long struggled with this issue.[11,12] Some have hypothesized that systematic gender and career oppression have contributed to incivility and bullying within the profession.[13,14] Considering society's views on the role of the nurse and the profession's predominantly female population, it is not surprising that incivility and bullying have manifested because of perceived and actual oppression. Unfortunately, nurses 'eating their young' may have profound individual and systemic ramifications for nurses accompanying stressful clinical settings and high rates of vertical violence.[15,16]

1.2 Individual impacts: The mental and physical toll on student nurses

At the individual level, incivility and bullying from nurse educators and clinical nursing staff also take a toll on student nurses' mental health as they face the same stressors as traditional college students.[17] Internationally, over 65% of college students screened positive for a mental health disorder, and over 57% screened positive for a mental health disorder lasting for at least 12 months.[18] In the United States, college students reported feeling lonely and stressed, which negatively impacted their academic performance.[19] During the 2023-2024 school year, over 65% of college students indicated that they needed help with a mental health problem, according to a national survey.[19,20]

Student nurses face the same stressors as traditional college students, in addition to the physical health and psychosocial repercussions that accompany the clinical setting and high rates of vertical violence.[15,17,21,22] The physical stress student nurses experience may manifest through insomnia, chest pain, panic attacks, and other physical ailments.[23] The clinical setting is an inherently overwhelming environment for nursing students. In all professions, students learn from the examples set by experienced professionals in the workplace. Uncivil actions from experienced nurses leave student nurses feeling powerless and worthless.[3,4] In extreme cases, student nurses have contemplated self-harm and reported suicidal ideations to avoid further acts of incivility and bullying from nurses in the clinical setting.[3,4]

1.3 Systemic ramifications: Workforce shortages, turnover, and patient safety

The individual-level consequences of vertical violence may further exacerbate ongoing systemic issues within the nursing profession as well. For decades, and now more than ever in the wake of the post-pandemic healthcare system, nurse staffing remains a global concern.[24] The retention and success of student nurses as they become registered nurses and the turnover rates of experienced nurses impact the strength of the already fragile nursing workforce.[24] Student nurses and new nurse graduates are especially susceptible to the negative effects of working conditions, such as vertical violence, during the transition period into professional practice. Nearly 60% of new graduate nurses leave their first job within 6 months due to incivility and bullying,[2] and nurse turnover costs hospitals on average $4 - $6 million annually.[25] This is especially alarming considering that the average age of bedside registered nurses is 46 years or older, with 25% of nurses planning to retire within the next five years.[26] This is a widespread global issue as well, with other countries reporting turnover ranging from 15% up to over 42%.[27]

Beyond the nurse-centered implications, the health and safety of patients may be jeopardized because of incivility and bullying impairing students' entry into the workforce.[28] While a variety of factors have contributed to the worsening global nursing shortage, the presence of bullying and incivility has led to increased turnover and burnout rates, decreasing the number of qualified nurses and resulting in the inadvertent harm to patient safety.[28] The nursing shortage has always been an impending issue for the profession, but the COVID-19 pandemic has worsened pre-existing issues such as difficult transitions to professional practice, low new graduate nurse retention, staffing shortages, and high turnover rates.[29–32]

It is important to note that nurses must feel a sense of purpose in their work, which stems from self-confidence in who they are, who they aspire to be, and who they help.[33] Student nurses' self-confidence is most fragile as they begin clinical rotations in their final year of nursing school.[6] However,

some studies suggest confidence may be the best predictor of achievement.[34,35] To provide safe, high-quality nursing care, student nurses must feel confident in their skills and feel empowered to seek help and guidance from educators and instructors as they navigate the transition to professional practice during a tired, post-pandemic healthcare system.[6]

1.4 Research questions

1) What is the frequency of uncivil action of nurse educators and faculty as perceived by nursing students over the last 12 months?
2) What is the frequency of bullying behaviors of nurse educators and faculty as experienced by student nurses over the last 12 months?
3) What is the relationship between vertical violence (i.e., uncivil actions and bullying behaviors) and nursing students' grade point average (GPA)?

2. METHOD

This was a cross-sectional, descriptive research study with a post hoc exploratory analysis of the relationships between perceived self-confidence, vertical violence (i.e., uncivil actions and bullying behaviors), and GPA among student nurses enrolled in baccalaureate programs in the United States. A large university's institutional review board approved this study. The authors of the Incivility in Nursing Education-Revised (INE-R) survey[36] and the Bullying Behaviors in Nursing Education (BBNE) tool[37] granted the research team permission to use and modify the instruments.

2.1 Sample and recruitment

Participants in this study were enrolled using convenience and snowball recruitment methods via email and a flyer with an encrypted link and QR code. The IRB-approved recruitment email and electronic flyer were sent to known colleagues and School of Nursing Chairs across the United States. Recruitment materials were also posted to the Sigma Theta Tau International Nursing Honor Society and Nurse Educator discussion boards. Participants were eligible if they were 18 to 25 years of age, enrolled full-time in a four-year baccalaureate program, obtaining their first college degree, enrolled in nursing courses, and in their second-, third-, or fourth-year in college.

2.2 Data collection

Using Research Electronic Data Capture (REDCap), participants completed an 8-item screening survey, followed by an electronic informed consent for those who met the eligibility criteria. Consented participants completed three surveys: (1) a sociodemographic and nursing educational environment questionnaire, (2) the INE-R survey, and (3) the BBNE tool. The surveys took approximately 10-20 minutes to complete. The sociodemographic and nursing education questionnaire included questions such as cumulative GPA from a previous college semester, college year, and self-confidence in transitioning to clinical practice. To increase the likelihood that participants were college students, an educational email address (i.e., ".edu") was required to complete the study and enter a raffle for a chance to receive compensation. All participants' information was de-identified before data analysis.

2.3 Measurements

Participants completed a demographic survey that included current cumulative GPA and the nursing educational environment questions about incivility, bullying, and confidence. The nursing educational environment section included definitions of incivility and bullying. Based on the provided definitions, participants were asked whether they had experienced incivility and/ or bullying from a nursing professor, nursing faculty/staff, clinical instructor, or staff nurse while in the clinical setting. If the participants responded yes, they were asked whether their experiences made them consider changing their major/leaving the nursing program at their college or university, followed by the impact on their confidence in becoming a competent nurse after graduation. Participants had the option to answer the confidence question.

2.3.1 *Incivility in INE-R survey*

Because vertical violence is defined as incivility and bullying, the INE-R was used to measure uncivil actions, while the BBNE was used to measure bullying behaviors. The INE-R survey is a psychometrically sound Likert-like scale instrument capable of measuring perceptions of incivility, as rated by student and faculty participants, as evidenced by Cronbach's alpha coefficients > 0.94.[36] The INE-R survey consists of 48 items: 24 focused on uncivil student behaviors and 24 on uncivil faculty behaviors, which were omitted because students were the only participants in this study. Lower levels of incivility include non-verbal gestures such as eye-rolling and sarcasm and are considered distracting, annoying, or irritating to victims.[36] Higher levels of incivility consist of intimidation, physical violence, and tragedy. Higher-level incivility is considered aggressive, threatening, or violent.[36] Student nurses were asked to rate the severity of each uncivil faculty behavior on a scale from not uncivil to highly uncivil and to indicate how often each behavior occurred over the last 12 months. For this study, faculty were defined as nurse educators, simulation instructors, nursing professors (adjunct instructors to full professors), nursing faculty (administrators, chairs, etc), and clinical nursing staff, nurses in the clinical setting, including clinical instructors and preceptors, and staff nurses. The INE-R has excellent

reliability with a Cronbach's alpha for the total score of > 0.98 for faculty behaviors.[36]

2.3.2 *BBNE*

The BBNE scale is a valid and reliable tool that measures bullying behaviors within the nursing education environment with a Cronbach's α coefficient of 0.88, and the structure reliability is 0.92.[37] This scale consists of 18 questions with frequency of behaviors rated as never experienced to experienced a few times a day. The BBNE is psychometrically sound and reliable in other languages such as Arabic. The BBNE assessed bullying behaviors for the last 12 months. It consists of four sections and collects data on the isolation of students in the education environment, nursing educators' and clinical nursing staff' attacks on student nurses' academic achievement and personalities, and direct negative behaviors towards student nurses. The direct negative behaviors consist of making practical jokes, exposure to verbal or sexual implications, mild violence used to intimidate (i.e., slamming a file, pushing with hands, etc.), and exposure to physical violence.

2.4 Data analysis

Data were analyzed using Statistical Package for the SPSS 26.0[38] and JMP (Version 14). Researchers recoded certain variables in the INE-R according to the published instructions from the author.[36] Due to the small sample, all data were analyzed using descriptive statistics. Further analysis of student nurses' self-confidence and vertical violence was conducted using exploratory Bayesian data analysis and a partition predictive model. A partition is a combination of attributes to predict outcomes, using multiple splits to explain the original variable.[39]

3. RESULTS

3.1 Demographics and nursing educational environment

The sample consisted of 70 student nurses enrolled in Bachelor of Science in Nursing (BSN) programs from seven colleges and universities across the United States. Participants were predominantly female (94.2%, n = 65) and Caucasian (85.5%, n = 59), with an average age of 20.35 (SD = 1.055) (see Table 1). The sample was evenly distributed among undergraduate class rankings: second-year 36.2% (n = 25), third-year 31.9% (n = 22), and fourth-year students 31.9% (n = 22). Participants (n = 70) in the sample had a mean cumulative GPA of 3.53 (SD = 0.328).

Among the 49 participants who answered the question, "Did the incivility or bullying you experienced affect your confidence that you will be a competent nurse after graduation?" 61% (n = 30) reported that their confidence was affected, while 39% (n = 19) reported that their confidence was not affected. All the student nurses whose confidence was negatively affected due to reports of vertical violence did not have GPAs below 3.77. Of the 30 students, 73% (22) reported that incivility or bullying behaviors negatively affected their confidence.

Table 1. Descriptive statistics of undergraduate student nurses (n = 70)

Variable	N (%)
Gender	
Female	94.2 (n = 65)
Male	4.3 (n = 3)
Prefer not to answer	1.4 (n = 1)
Race	
Asian	2.9 (n = 2)
Black or African American	4.3 (n = 3)
Caucasian	85.5 (n = 59)
Multiracial/multiethnic	2.9 (n = 2)
Other race	2.9 (n = 2)
Prefer not to answer	1.4 (n = 1)
Year in College	
Second-year	36.2 (n = 25)
Third-year	31.9 (n = 22)
Fourth-year	31.9(n = 22)

3.2 Incivility and bullying

Results from the INE-R revealed the perceived severity of each uncivil action and how often it has occurred to respondents in the current sample over the last 12 months, with the options of 'never', 'rarely', 'sometimes', and 'often'. Under the teaching category, student nurses reported how frequently they experience nurse educators performing uncivil behaviors. Of the 70 students, almost 43% (n = 30) and 9% (n = 6) reported that they had "ineffective or inefficient teaching methods (deviating from course syllabus, changing assignment or test dates)' occurring sometimes and often, respectively (see Table 2). 'Unfair grading' (37.1%, n = 22), 'refusing or reluctant to answer direct questions' (31.4%, n = 22), 'being unavailable outside of class (not returning calls or emails, not maintaining office hours)' (30%, n = 21) were uncivil behaviors that students reported occurring sometimes. Unfortunately, almost 3% (n = 2) of students reported 'threats of physical harm against others (implied or actual)'.

Table 2. Descriptive statistics of the incivility in nursing education-revised (INE-R) survey based on a sample of undergraduate student nurses in the United States (n = 70)

	How do you rate the level of incivility for each behavior below?				How often has each behavior occurred in the last 12 months?			
Question	**NU N (%)**	**SU N (%)**	**MU N (%)**	**HU N (%)**	**N N (%)**	**R N (%)**	**S N (%)**	**O N (%)**
Expressing disinterest, boredom, or apathy about course content or subject matter	13 (18.6)	34 (48.6)	19 (27.1)	4 (5.7)	30 (42.9)	27 (38.6)	12 (17.1)	1 (1.4)
Making rude gestures or non-verbal behaviors toward others (eye rolling, finger pointing, etc.)	8 (11.4)	3 (4.3)	16 (22.9)	43 (61.4)	34 (48.6)	19 (27.1)	16 (22.9)	1 (1.4)
Ineffective or inefficient teaching method (deviating from course syllabus, changing assignment or test dates)	15 (21.4)	30 (42.9)	16 (22.9)	9 (12.9)	18 (25.7)	16 (22.9)	30 (42.9)	6 (8.6)
Refusing or reluctant to answer direct questions	7 (10.0)	13 (18.6)	25 (35.7)	25 (35.7)	25 (35.7)	16 (22.9)	22 (31.4)	7 (10.0)
Using a computer, phone, or other media device during faculty meetings, committee meetings, other work activities for unrelated purposes	14 (20.0)	18 (25.7)	22 (31.4)	16 (22.9)	44 (62.9)	18)25.7)	7 (10.0)	1 (1.4)
Arriving late for class or other scheduled activities	15 (21.4)	24 (34.3)	26 (37.1)	5 (7.1)	21 (30.0)	41 (58.6)	8 (11.4)	0 (0.0)
Leaving class or other scheduled activities early	20 (28.6)	29 (41.4)	17 (24.3)	4 (5.7)	46 (65.7)	21 (30.0)	3 (4.3)	0 (0.0)
Being unprepared for class or other scheduled activities	13 (18.6)	25 (35.7)	25 (35.7)	7 (10.0)	38 (54.3)	25 (35.7)	6 (8.6)	1 (1.4)
Canceling class or other scheduled activities without warning	22 (31.4)	26 (37.1)	15 (21.4)	7 (10.0)	36 (51.4)	27 (38.6)	7 (10.0)	0 (0.0)
Being distant and cold toward others (unapproachable, rejecting student opinions)	6 (8.6)	9 (12.9)	13 (18.6)	42 (60.0)	31 (44.3)	19 (27.1)	11 (15.7)	9 (12.9)
Punishing the entire class for one student's misbehavior	10 (14.3)	2 (2.9)	14 (20.0)	22 (62.9)	48 (68.6)	12 (17.1)	8 (11.4)	2 (2.9)
Allowing side conversations by students that disrupt class	13 (18.6)	30 (42.9)	20 (28.6)	7 (10.0)	25 (35.7)	25 (35.7)	17 (24.3)	3 (4.3)
Unfair grading	7 (10.0)	5 (7.1)	17 (24.3)	41 (58.6)	21 (30.0)	19 (27.1)	26 (37.1)	4 (5.7)
Making condescending or rude remarks toward others	6 (8.6)	2 (2.9)	9 (12.9)	53 (75.7)	40 (57.1)	15 (21.4)	11 (15.7)	4 (5.7)
Refusing to discuss make-up exams, extensions, or grade changes	8 (11.4)	19 (27.1)	19 (27.1)	24 (34.3)	37 (52.9)	14 (20.0)	11 (15.7)	8 (11.4)
Ignoring, failing to address, or encouraging disruptive students' behaviors	11 (15.7)	12 (21.4)	26 (37.1)	18 (25.7)	35 (50.0)	26 (37.1)	8 (11.4)	1 (1.4)
Exerting superiority, abusing position, or rank over others (e.g. arbitrarily threatening to fail students)	8 (11.4)	3 (4.3)	12 (17.1)	47 (67.1)	47 (67.1)	10 (14.3)	9 (12.9)	4 (5.7)
Being unavailable outside of class (not returning calls or emails, not maintaining office hours)	8 (11.4)	17 (24.3)	23 (32.9)	22 (31.4)	26 (37.1)	20 (28.6)	21 (30.0)	3 (4.3)
Sending inappropriate or rude emails to others	9 (12.9)	3 (4.3)	11 (15.7)	47 (67.1)	52 (74.3)	12 (17.1)	6 (8.6)	0 (0.0)
Making discriminating comments (racial, ethnic, gender, etc.) directed towards others	11 (15.7)	0 (0.0)	6 (8.6)	53 (75.7)	59 (84.3)	8 (11.4)	3 (4.3)	0 (0.0)
Using profanity (swearing, cussing) directed towards others	10 (14.3)	8 (11.4)	14 (20.0)	38 (54.3)	63 (90.0)	7 (10.0)	0 (0.0)	0 (0.0)
Threats of physical harm against others (implied or actual)	11 (15.7)	0 (0.0)	3 (4.3)	56 (80.0)	68 (97.1)	2 (2.9)	0 (0.0)	0 (0.0)
Property damage	9 (12.9)	1 (1.4)	6)8.6)	54 (77.1)	69 (98.6)	1 (1.4)	0 (0.0)	0 (0.0)
Making threatening statements about weapons	9 (12.9)	1 (1.4)	1 (1.4)	59 (84.3)	70 (100)	0 (0.0)	0 (0.0)	0 (0.0)

Notes. NU = not uncivil, SC = somewhat uncivil, MU = moderately uncivil, HU = highly uncivil, N = never, R = rarely, S = sometimes, O = often.

3.3 Bullying

Student nurses reported experiencing bullying behaviors a few times per year, including 'being spoken to in a humiliating or degrading manner' (34.3%, n = 24) and 'being consistently assigned tasks beyond their capacity' (31.4%, n = 22) (see Table 3). For some, these behaviors occurred daily (12.85%, n = 9, and 7.14%, n = 5, respectively). 'Being left by themselves on breaks' was a common bullying behavior reported as a daily occurrence (12.85%, n = 9). Most of the participants reported not 'being exposed to verbal or behavioral sexual implications' (94.3%, n = 66) or 'physical violence' (98.6%, n = 69).

The partition model analysis of student nurses' confidence related to vertical violence from nursing educators and clinical nursing staff yielded an R^2 of 0.617, indicating that approximately 62% of the variation in confidence levels can be attributed to the incidence of bullying, incivility, as well as GPA. This finding suggests a moderately strong relationship between the explored factors and confidence among student nurses.

Table 3. Descriptive statistics of the Bullying Behaviors in Nursing Education (BBNE) tool based on a sample of undergraduate student nurses in the United States (n = 70)

How often have you experienced each behavior?						
	Never	**Few/ year**	**Few/ month**	**Few/ week**	**Daily**	**Few/day**
Question	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Not being wanted in the study group related to the school or internship	46 (65.7)	19 (27.1)	4 (5.7)	0 (0.0)	1 (1.4)	0 (0.0)
Not being accepted to the group of friends	31 (44.3)	29 (41.4)	7 (10.0)	0 (0.0)	3 (4.3)	0 (0.0)
Being left alone during breaks	29 (41.4)	21 (30.0)	11 (15.7)	0 (0.0)	7 (10.0)	2 (2.9)
Intentionally leaving the environment when you enter an environment	44 (62.9)	15 (21.4)	9 (12.9)	(0.0)	2 (2.9)	0 (0.0)
Limiting self-expression	32 (45.7)	24 (34.3)	10 (14.3)	0 (0.0)	3 (4.3)	1 (1.4)
Not being trusted in the competence related to lectures	42 (60.0)	19 (27.1)	8 (11.4)	0 (0.0)	1 (1.4)	0 (0.0)
Being forced to do a job that will negatively affect your self-confidence	50 (71.4)	14 (20.0)	6 (8.6)	0 (0.0)	0 (0.0)	0 (0.0)
Constantly assigning tasks over the capacity	29 (41.4)	22 (31.4)	10 (14.3)	0 (0.0)	5 (7.1)	4 (5.7)
Not making eye contact while talking	36 (51.4)	23 (32.9)	8 (11.4)	0 (0.0)	3 (4.3)	0 (0.0)
Talking in a humiliating and degrading style	38 (54.3)	24 (34.3)	3 (4.3)	0 (0.0)	3 (4.3)	2 (2.9)
Questioning your honesty and reliability	44 (62.9)	16 (22.9)	6 (8.6)	0 (0.0)	3 (4.3)	1 (1.4)
Being scolded loudly in public	52 (74.3)	13 (18.6)	1 (1.4)	0 (0.0)	4 (5.7)	0 (0.0)
Using degrading mimics or body language	57 (81.4)	9 (12.9)	2 (2.9)	0 (0.0)	1 (1.4)	1 (1.4)
Talking bad or unfounded behind you	42 (60.0)	22 (31.4)	4 (5.7)	0 (0.0)	1 (1.4)	1 (1.4)
Making practical jokes	58 (82.9)	11 (15.7)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)
Being exposed to verbal or behavioral sexual implications	66 (94.3)	3 (4.1)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)
Mild violence to intimidate slamming a file, pushing with hands	68 (97.1)	1 (1.4)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)
Being exposed to physical violence	69 (98.6)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

4. Discussion

The findings of this study may help guide nurse educators and clinical instructors to support student nurses' self-confidence and entry into the nursing workforce worldwide. The cumulative GPA of the student nurses in the sample was consistent with GPA requirements for BSN program admissions, showing that while cumulative GPA may not be primarily affected by vertical violence, other aspects of student achievement, such as self-confidence, may be impaired. Although students' responses and reported cumulative GPAs demonstrate mastery of the didactic content, 61% of participants reported that their confidence related to nursing competency secondary to vertical violence from nurse educators and clinical nursing staff was negatively affected. Self-confidence in the art of nursing may be more difficult for student nurses to master.[6] This is consistent with Ramezanzade Tabriz and

colleagues,[6] who suggested that students' confidence in their preparedness for professional practice decreased over the final semester.

Based on this post hoc exploratory analysis, researchers suggest further examination of student well-being factors, such as self-confidence, rather than cumulative GPA as an indicator of successful transition to professional practice. Based on the results of the partition model analysis, acts of incivility towards student nurses seemed to be more predictive of self-confidence than cumulative GPA, with roughly 42% of the total student nurses reporting their self-confidence was lowered due to vertical violence from nursing educators or clinical nursing staff.

While the majority of the current literature has examined student self-confidence related to their performance of psychomotor skills, little is known about student nurses' diminished self-confidence from vertical violence, its impact on the transition to professional practice, and the possible consequences for future professional development. Participants who did not experience firsthand vertical violence still disclosed witnessed accounts of incivility and bullying among peers in their cohort as well. This suggests that despite an overall culture of civility fostered in nursing schools, isolated occurrences of vertical violence from nursing educators and clinical nursing staff alone impair student nurses' self-confidence.

Fourth-year nursing students were most likely to report lower confidence, as they often have greater clinical commitments than their second- and third-year counterparts, so the trend is consistent with reports of negative learning environments and hostility in the clinical setting. Although the reported cumulative GPA of students in the sample reflects mastery of didactic content, hands-on nursing skills, especially high-acuity skills, are much more difficult for student nurses to grasp.[6] Confidence and vertical violence are understudied, and more research is needed to fully understand the short and long-term consequences to both student nurses and the nursing profession worldwide.

Limitations

This study has some limitations that warrant discussion. Due to the sample only including colleges and universities with student emails ending in edu and a small sample size, the generalizability of the study findings should be considered. The self-confidence measure was only based on one question about whether the students' perceived self-confidence was negatively affected by vertical violence. Researchers used this measure instead of a full-scale self-confidence measure, as the study aimed to conduct a post-hoc analysis based on an original study focused on the relationship between vertical violence and GPA. However, the findings of this analysis serve to generate hypotheses for future nursing education research. Future studies should use reliable and validated tools to measure self-confidence.

5. Conclusion

While the original study used cumulative GPA as a measure of academic achievement, nursing education research should examine additional methods for evaluating the success of students enrolled in traditional 4-year undergraduate nursing programs. Although nursing programs emphasize learning in didactic, simulation, and clinical settings, self-confidence is not formally measured as a potential indicator of successful transition to professional practice and of new graduate nurse retention. With self-confidence being necessary for the positive transition to professional practice, future studies should examine if reduced self-confidence with clinical competencies is a product of vertical violence in the didactic setting prior to clinical immersion, a consequence of vertical violence during clinical rotations, or both. Understanding when a student nurse's self-confidence is most affected by vertical violence will help researchers create targeted interventions.

Moreover, future studies should examine strategies to enhance faculty and student recognition of diminished self-confidence, as well as safe and standardized methods for reporting incidents of vertical violence. Research on vertical violence in nursing education is essential to examine its implications for the viability of the ever-growing nursing profession, as increased self-confidence among student nurses may help reduce new graduate nurse attrition and nurse burnout rates and stabilize turnover within the profession, mitigating the global nurse staffing crisis. Finally, improved academic experiences and self-confidence during undergraduate education may encourage bachelor-prepared nurses to return to obtain specialty certifications and graduate degrees in nursing as well.

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Authors contributions

Ms. Jackson and Drs. Saylor and Graber were responsible for the study design and revision. Amy Jackson was responsible for data collection and analysis. Dr. Saylor and

Amy Jackson were responsible for data interpretation. Amy Jackson drafted the manuscript, and Drs. Saylor and Graber revised the manuscript. All authors read and approved of the final manuscript.

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