Global Advanced Research Journal of Educational Research and Review (ISSN: 2315-5132) Vol. 3(1) pp. 012-021, February, 2014
Available online http://garj.org/garjerr/index.htm

Full Length Research Paper

Developing Instruments to Assess Role Strain in Nursing Students

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Accepted 20 February, 2014

Aims: This study aims to develop an assessment test to gauge the threats and expectations related to role strain in nursing students. Background: Nursing students develop role strain during clinical practicum as a result of learning motivations, instructional environments, and guidance methods. Currently, there is a lack of available instruments to assess role strain in nursing students, and little research has been conducted upon the subject. Methods: Three steps were involved in the design of the assessment test: First, deciding what to measure (question development). Second, deciding how to measure (selection of test format, verification of measurement dimensions and attributes followed by correlation definition). Third, presenting the results (item analysis and reliability/validity analysis). Results: Factor analysis revealed that threat events in role strain constitute the reality role dimension, inducing uncertainty, stress, tension, exhaustion, and conflict; while expectation events make up the ideal role dimension, including idealization, confidence, competition, status, and performance; these overall reliability was .95 and .93, respectively; reliability of subscales was .76 ~ .89 and .76 ~ .90, respectively, and the correlation between each item and the total score was .33 ~ .80 and .50 ~ .73, respectively. Conclusions/Implications for Practice: Exploratory factor analysis of assessment results revealed that the developed instrument presented good reliability and validity; however, the limited sample size prevents it from being subjected to confirmatory factor analysis to examine goodness of fit of the underlying theoretical models for the construct dimensions. Therefore, we opted to examine goodness of fit indicators using Bayesian estimation.

Keywords: nursing students, role strain, the reality role, the ideal role, factor analysis.

INTRODUCTION

The technical training involved in clinical practicum represents an integral part of practice courses for nursing students, and constitutes the base of nursing education (Dunn and Hansford, 1997). Nursing researchers previously focused upon the anxiety, stress, and coping strategies and attitudes of nursing students in practicum programs, but this has gradually shifted to an emphasis on emotional changes such as morale, tension, and empowerment (Andrews et al., 2006; Bradbury-Jones, Irvine, and Sambrook, 2010; Brodie et al., 2004). In recent years, several studies have confirmed that role strain, clinical morale, and role conflict in nursing students correlate with the impact of practicum performance (Chen, 2010; Gautam, 2005; Piko, 2006).

The practicum setting is the single most important factor in determining the emotional reactions of nursing students while learning, and plays an important role in the

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development of work and practicum attitudes (Paterson and Cary, 2002; Sun, Xu, Xu, and Zhang, 2001), as well as future attitudes in nursing work (2002; Shiau and Chou, 1994; Su and Kuo, 1993), sense of security, sense of belonging, nursing performance (Hunter, 2010), and principles, values, and degree of caring toward nursing. To date, little is known about the factors affecting emotional changes in nursing students placed in a clinical setting; and reliable, valid assessment surveys for practicum conditions, including the evaluation of threat and expectation events (Morgan, 2001; Morin, Hayes, Carroll, and Chamberlain, 2002), are as yet unavailable. The structure of threat and expectation events in role strain remains an unsolved puzzle. This study aims to examine the reliability and validity of a novel role strain assessment survey.

Role strain is a subjective condition, representing an emotional awakening toward impossible role expectations. Role strain typically occurs when it becomes difficult to exercise the duties of multiple roles and fulfill the required responsibilities, and primarily consists of role conflict and role overload (Goode, 1960; Mui, 1992). Brown (1998) discovered in a study directed toward male occupational therapists that role strain induced by social pressures and external conditions usually correlates with role stress and other role-related issues, such as role blurring, role inconsistency, role conflict, and role overload etc.

The role of a nursing student involves directions in personal study, intrinsic capabilities, and growth, progression, organization, proactive creativity, decision-making, and logical deduction skills. If, through such role development, nursing students improve their skills and attitudes, and learn how to balance their emotions, they will establish the basis to become exceptional nurses in the future. Role strain in nursing students refers to a subjective condition in which emotions become alerted to the external conditions and internal feelings induced by the stress of a clinical setting. Previous studies have shown that clinical practicum induces anxiety in nursing students (Arnold and Nieswiadomy, 1997; Kleehammer, Hart, and Keck, 1990; Schmeiser and Yehle, 2001). Nursing students have to play multiple roles during practicum, and when role conflict and role overload occurs, must then readjust and learn to cope with repetitive threats that interfere with role activities.

Empirical evidence has shown that college-level nursing students participating in a pediatric practicum have subjective experiences such as adjusting oneself to better communicate with children, exercising discretion when professionally challenged by patient families, and hoping to gain the confidence and recognition of mentors (C. W. Chen, Su, Yang, Liu, and Feng, 2009). Role strain experienced by nursing students during pediatric practicum originates from conflict caused by a gap in understanding between ideal and actual working conditions. In the reality role, conflicts emerge as a result of stress, uncertainty, tension, mistrust, and exhaustion; while expectations in the ideal role include confidence, status, idealization, ability, and performance (Chen, 2010).

Student nurses in a pediatric practicum lack professional resources, support, and opportunities, which correlates with poor morale and frustration. Researchers have reported that stress in student nurses stems from specific individual fears, such as fear of failure, of instructor evaluations, of hurting parents, of interacting with patients, of interacting with patients and their families, or of interacting with teachers and other professional etc. (Clark and Ruffin, 1992; Wilson, 1994). The extreme anxiety exhibited by student nurses is related to fear of making mistakes, fear of learning new skills and techniques, fear of the initial experience in a new position, fear of consultations with doctors, fear of being late (Kleehammer et al., 1990), fear of clinical techniques, fear of hospital equipment and facilities, and fear of instructor evaluations (Chang and Huang, 2004).

To sum up, role strain in nursing students, including the effect of threat and expectation events is an issue worthy of concern by the nursing profession. However, the lack of suitable assessment instruments constitutes on obstacle, and thus this study seeks to develop a reliable survey to assess role strain in nursing students.

METHODS

Forty-two students' nurses in pediatric practicum from a nursing department of an undisclosed university in southern Taiwan were selected as participant feelings toward the first day of practicum and the end of practicum. Feelings such as fear, sadness, anger, loneliness, hopefulness, happiness, shock, disgust, liking, and others were assessed, and participants were asked to describe the root cause of their feelings.

Prior to interviews, consent was sought from participants to publish their results, and participants were assured that the outcome of the interview would not affect their practicum scores in any way. Confidentiality was maintained for all data, and no personal content was released in any form. During the interview process, the chairing instructors maintained a secure atmosphere with no criticism, making, or teasing.

Interview results were recorded without disclosing participant identity, and then subjected to analysis. The 44 felt events described by participants were homogenously classified according to the scenarios (attitude or actions), performance, and results generated by these events. The classification results were developed into one of three dimensions of morale in nursing students' practicum, and termed "role strain".

Results were examined and confirmed by research students, practicum mentors, and English teachers of British nationality, and understood to be generated from

Table 1 Population Characteristics of the Participants (N = 103)

Item	*N*	%
Age		
<21	30	29.1
22-30	58	56.3
>31	15	14.6
Commuting time to hospital		
10-30'	70	68.6
>30'	33	31.4
Health status		
Excellent	31	30.1
Fair	47	45.6
Poor	25	24.3
Licensing		
Unlicensed	60	58.3
Licensed nurse	43	41.7
Program of study		
Day class	58	56.3
Night class	17	16.5
Extension study	28	27.2

conflict (the reality role) and expectation (the ideal role). Results have already been published on a separate paper (Chen, 2010). The 44 feelings described in this previous study were developed into a survey of role strain on nursing students, and provided to 40 senior-year nursing college students who had just completed a year of practicum, to select the top ten feelings they agreed with most. This survey was also provided to 58 nursing college students, 28 extended education students, and 17 night class students, all in their senior year, to assess their feelings immediately after beginning practicum in the spring semester. Completed surveys were collected from 103 students (55% of the 184 students enrolled in these three nursing programs).

Ethical principles including informed consent, confidentiality, non-disclosure of participant identity, and assurance of no effect on grades was maintained, and IRB certification (****-IRB-*****) was received for the data-gathering process.

Assessment test development

The design of the assessment test involved three steps (Sawyer and Kabacoff, 2010): First, deciding what to measure (question development); Second, deciding how to measure (determination of test format and dimensions or attributes); Third, deciding how to present results (item analysis and reliability/validity analysis); The development process is described as follows:

A. Deciding what to measure (question development): This study employed the concept of facilitating target achievement in fostering positive and proactive emotions (Paterson and Cary, 2002), coupled with the multiple role theory of role strain (Goode, 1960). From these two references, it was discovered that the feelings toward the learning environment, as well as feelings toward roles and role expectations, experienced by students correlated with the level of morale in the general situation. Therefore, group drawing was used on the first and last days of pediatric practicum with 5 groups, each consisting of 8 to 9 nursing students, to allow group members to project or express their feelings toward people, objects, and events encountered during practicum. Feelings were labeled on a circular chart according to levels of intensity, and were classified according to the scenarios that evoked positive (proactive) or negative (passive) feelings. Using grounded theory (Glaser and Strauss, 1967) and open axial selective coding for meaning (Strauss and Corbin, 1990), 23 threat events and 21 expectation events in role strain (Chen, 2002) were derived. These were then used to compose questions, with an emphasis on simplicity, clarity, and adequate use of affirmative and negative sentences. Threat and expectation events in role strain eventually condense into five concepts or dimensions, with two constrict dimensions, the reality role and the ideal role. Concept and operation definitions were also established (Chen, 2010).

B. Deciding how to measure (selection of test format, determination of measurement attributes and dimensions, definition mutual correlations): Depending on the format of the survey, different methods of classification and collection will be applied to each question. All questions in the assessment test were subjected to a thorough examination by the authors and one master's student, who was also a qualified clinical nurse. This examination ensured that question conveyed a single unambiguous message, and established uniformity across the board so as to develop a formal assessment test. During the test design process, the measurement dimensions were divided into two parts, attitude and actions, with the aim of assisting test-takers to disclose their inner feelings under

Table 2 Top ten factors made threat or comfortable/pleasure feelings

Posing the greatest threat events		Inducing the most comfortable/ pleasurable	
1.	Lack of professional knowledge and experience	1.	Solid and meaningful learning
2.	Preparing for homework	2.	Cooperation and altruism among classmates
3.	Poor response ability	3.	Receiving commendations
4.	Fear of doing the wrong thing	4.	Ability to help others
5.	Poor technical ability	5.	Friendly attitude of the medical team
6.	Inability to find necessary information in books or journals	6.	Building confidence
		7.	Harmonious and pleasant atmosphere
7.	Unclear and unknown situations	8.	Ability to be accepted
8.	Poor response to interactions	9.	Unique and mild instructional attitudes
9.	Fear of hurting others	10.	Feelings of self-worth
10.	Poor sleep due to early rising		

appropriate conditions. Therefore, a Likert 9-point scale was used as a measure for 23 questions, derived from previous steps, that were related to threat events in role strain. The Likert scale, with 1 representing “least threat” and 9 representing “greatest threat”, was applied to prevent participants from responding to each and every question too strongly, too mildly, or being too lukewarm and conforming too much with social expectations. Participants were also asked to select the top ten factors that represented the greatest threat for them (see Table 2). The Likert 9-point scale was also applied to 21 questions related to expectation events in role strain, with 1 representing “worst performance” and 9 representing “best performance”. Participants were told to respond according to the hopes, aspirations, and rewards experienced in different scenarios; and were similarly asked to select the top ten factors that made them feel the most comfortable and pleasant (see Table 2). A total of 44 questions were included in the finalized assessment test.

C. Deciding how to present results (item analysis and reliability/validity analysis): An effective assessment test needs to have good structure and a solid homogenous theoretical basis. Test-takers must be aware, understand, and agree that the test is meaningful; otherwise, the most effective of assessment tests will be reduced to worthlessness. The specific meaning of each question cannot be understood through an amalgamated summary of responses, and therefore item analysis was conducted, using the correlations between each question and the total score, combined with extreme value examination. Cronbach’s alpha coefficient was used to examine the inherent uniformity and homogeneity between questions, and only questions that had a correlation of .3 and above with the total score, as determined by item analysis, were retained. These questions were then subjected to exploratory factor analysis, in order to examine the dimensions of the assessment test. Principle component analysis was conducted on the dimensions of each construct, and varimax in orthogonal rotation was employed to extract factors (dimensions). Questions with similar characteristics were ground together and labeled as structural (theme) concepts, in order to evaluate the explanatory power of the established validity. If a theme concept has one factor with higher explanatory power, it demonstrates that the relevant dimension has good single dimension characteristics. For theme concepts that did not fit this standard, questions whose largest factor loading fell within other factors were omitted, and the remaining questions were again examined using factor analysis, using scree plots as a reference and eigen values greater than 1.0 as a standard for factor selection. At the same time, KMO values and the x^2 value in the Bartlett test of sphericity were used to examine if theme concepts were suitable for factor analysis. As the KMO value nears 1, the correlation between variables increases and the x^2 value in the Bartlett test of sphericity rises as well, indicating that common factors exist among the matrices in the population – therefore, this population is suitable for factor analysis. Primary component factor analysis was then employed, with factor loading values greater than .4 following oblique rotation as a cutoff point, to select the cluster items for the reality and ideal role dimensions in role strain.

RESULTS

Population characteristics of the participants

A sampling of 103 nursing students enrolled in the nursing department (including night class) of an undisclosed university was made for this study. Average age of the participants was 25.56 years (SD = 5.40); for the 56.3% enrolled in day class, the average age was 21.53 years (SD = 1.01); the remainder were enrolled in either night class or extension students, and the average age was 30.62 years (SD = 4.38). 68.6% of participants required less than 30 minutes to commute to their practicum. Around a third of participants reported themselves to be in good health, while 24.3% reported having poor health. 41.7% of participants were licensed nurses.

Table 3 Factor Analysis, Item Analysis, and Reliability Analysis of the Reality Role

Item	Mean	SD	Factor loading	Communality Administrator	Eigen value	Cumulative %	Cronbach alpha
Factor 1: Uncertainty							
13.Fear of patients dying	4.99	2.73	0.85	0.79	9.14	39.72	.88
14.Occurence of critical conditions in patients	4.99	2.51	0.83	0.78			
15.Unclear and unknown situations	5.33	2.46	0.81	0.67			
17.Threatening examination and treatment	4.44	2.20	0.77	0.67			
16.Management of sad situation	4.50	2.31	0.73	0.65			
11.Fear of hurting others	5.28	2.50	0.63	0.58			
Factor 2: Stress							
18.Physical and mental fatigue	6.14	2.34	0.76	0.61	2.14	49.4	.89
21.Preparing of homework: reading report and case report	6.42	2.27	0.75	0.58			
19.Self-lacking	4.32	2.52	0.69	0.69			
22.Poor sleep due to early rising	5.54	2.61	0.64	0.56			
20.Inability to find necessary information in book or journal	5.24	2.36	0.63	0.60			
1.Unfamiliarity with surroundings	3.85	2.08	0.48	0.40			
Factor 3: Tension							
2.Poor technical ability	5.37	2.34	0.86	0.78	1.47	55.43	.86
3.Lack of professional knowledge and experience	6.13	2.09	0.85	0.76			
10.Fear of doing the wrong thing	5.48	2.20	0.78	0.66			
12.Poor response ability	5.40	2.39	0.75	0.71			
23.Uncertainty toward the future	5.05	2.71	0.64	0.65			
Factor 4: Exhaustion							
8.Being refuse	4.57	2.54	0.83	0.74	1.27	60.93	.85
7.Being demand	3.88	2.09	0.73	0.57			
9.Hurried and fast-paced	4.28	2.10	0.71	0.57			
Factor 5: Conflict							
5.Poor response to interactions	4.02	2.46	0.83	0.80	1.19	66.11	.76
6.Difference in instruction between classroom and clinical	3.63	1.93	0.80	0.66			
4. Bad communication with others	3.92	2.41	0.80	0.73			

Table 4

Item	Mean	SD	Factor loading	Communality Administrator	Eigen value	Cumulative %	Cronbach alpha
Factor 1: Idealization							
15.Approachable and warm	6.04	1.78	0.89	0.82	10.5	49.98	0.9
14.Understanding how to express love	5.75	1.79	0.88	0.82			
13.Warm caring	6.45	1.64	0.84	0.76			
8.Calm, blissful	5.11	1.93	0.75	0.70			
12.Cultivating sensitivity	5.84	1.99	0.67	0.68			
Factor 2: Confidence							
1.Building confidence	5.38	1.85	0.81	0.79	1.79	58.51	0.89
3.Good expression ability	5.12	1.91	0.79	0.74			
10.Ability to exercise self-control	6.01	1.64	0.75	0.69			
4.Hopeful	5.22	1.95	0.75	0.72			
2.Capable of adjusting	5.61	1.73	0.72	0.63			
16.Solid and meaningful learning	6.53	1.67	0.71	0.67			
Factor 3: Competition							
7.Ability to be accepted	6.28	1.56	0.80	0.69	1.35	64.93	0.86
5.Feelings of self-worth	5.59	1.81	0.74	0.78			
21.Receiving commendations	6.51	1.80	0.71	0.72			
6.Ability to help others	6.39	1.72	0.68	0.76			
Factor 4: Personal status							
20.Cooperation and altruism among classmates	6.91	1.64	0.88	0.74	1.22	70.73	0.85
19.Unique and mild instructional attitude	6.24	1.85	0.87	0.78			
11.Friendly attitude of the medical team	6.31	1.57	0.68	0.64			
Factor 5: Performance							
18.Clean environment	5.79	1.83	0.74	0.61	1.07	75.8	0.76
9.Harimonious and pleasant atmosphere	6.01	1.78	0.73	0.73			
17.Curing disease	5.66	1.99	0.70	0.54			

Table 5 The difference of threatening and expectative components between BNS and RN-BSN during pre-practice

Factors of role strain	BNS (n = 58)		3-year BNS (n = 47)		Difference	T	p
	Mean	SD	Mean	SD			
Reality role threatening							
Uncertainty	5.33	2.03	4.32	1.69	1.01	2.70	.01
Stress	5.21	1.79	5.30	1.50	-.09	-.28	.78
Tension	6.20	1.71	4.56	1.60	1.64	4.97	<.01
Exhaustion	4.49	1.91	3.93	1.70	.57	1.58	.12
Conflict	4.28	2.02	3.32	1.69	.96	2.56	.01
Ideal role expectative	n =58		n = 27				
Idealization	5.56	1.63	6.42	1.17	-.86	-2.46	.02
Confidence	5.52	1.52	5.91	1.24	-.38	-1.15	.26
Competition	6.20	1.57	6.18	1.14	.02	.07	.95
Personal status	6.48	1.53	6.48	1.41	.00	<.01	.99
Performance	5.71	1.60	6.05	1.37	-.34	-.94	.35

Reaction of Participants toward Threat and Expectation Events

At the start of practicum, the top ten events posing the greatest threat in nursing student role strain, listed in order from greatest to least threat, were as follows: preparing for homework , inability to find necessary information in books or journals, tiredness in body and spirit, lack of professional knowledge and experience, fear of hurting others, uncertainty toward the future, rising early and other sleeping problems, hurried and fast-paced schedule, poor communication and bad interactions with others, and different instruction standards in classroom and clinical settings (Table 2). The top ten events inducing the most comfortable and pleasurable feelings were, in order of most to least pleasant, solid learning, meaningful learning, cooperation and altruism among classmates, receiving commendations, ability to be accepted, unique and mild instructional attitudes, friendly attitudes of the medical team, harmonious and pleasant atmosphere, receiving warm caring and feelings of self-worth (Table 2).

Examining Reliability and Validity of the Threat/Expectation Events in Role Strain Assessment Test

Principal component factor analysis of the Threats Events in Role Strain Survey was conducted as follows: Factors with five eigen values greater than 1 were selected, and the subsequent scree plot flattened out after selection of five factors. KMO = .84 (within effective range), and the x^2 value of the Bartlett test of sphericity was 1426.24 (p = .000). Finally, principal component factor analysis and oblique rotation analysis were used to select factors, and items with similar characteristics were found to congregate in specific factors. Factors were respectively termed uncertainty (includes six questions, numbers 13, 14, 15, 17, 16, and 11); stress (includes six questions, numbers 18, 21, 19, 22, 20, and 1); Tension (includes five questions, numbers 2, 3, 10, 12, and 23); Exhaustion (includes three questions, numbers 8, 7, and 9); and conflict (includes three questions, numbers 5, 6, and 4). Cronbach's alpha coefficient for all 23 questions on the survey was .93, and .88, .80, and .76 for each subscale, respectively. The corrected item total correlation ranged from .33 ~ .80, and intraclass correlation reached .39 ~ .55. Explained total variance reached 66.11% (Table 3).

Principal component factor analysis of the Expectation Events in Role Strain Survey was conducted as follows: Factors with five eigen values greater than 1 were selected, and the subsequent scree plot flattened out after selection of five factors. KMO=.89 (within effective range), and the x^2 value of the Bartlett test of sphericity was 1368.5 (p < .001). Finally, principal component factor analysis and oblique rotation analysis were used to select factor, and items with similar characteristics were found to congregate in specific factors. Factors were respectively termed Idealization (includes five questions, numbers 15, 14, 13, 8, and 12); Confidence (includes six questions, numbers 1, 3, 10, 4, 2, and 16); Competition (includes four questions, numbers 7, 5, 21, and 6); Personal Status (includes 3 questions, numbers 20, 19, and 11); and Performance (includes three questions, numbers 18, 9,

and 12) (Table 4). The Cronbach's alpha coefficient for all 21 survey questions was .95, and .90, .89, .86, .85, and .76 for each subscale, respectively. The corrected item total correlation ranged from .33 ~ .80, and intraclass correlation reached .51 ~ .66. Explained total variance reached 75.80% (Table 4).

Compare difference of threaten and expectation component between BSN and 3-year BSN

Table 5 shows that the BSN has higher score in uncertainty, tension, and conflict among the reality role threaten than the 3-year BSN during pre-practice. There is only one component, idealization among ideal role expectation significant difference between the BSN and the 3-year BSN. The 3-year BSN has higher score in idealization than the BSN students during pre-practice.

DISCUSSION

This study developed a Threat Events in Role Strain Survey and an Expectation Events in Role Strain Survey, and further examined the reliability and validity of both surveys. Factor analysis uses a lesser number of dimensions to express the original data structure, yet can still retain most of the original information. Observed variables included common factors and unique factors and unique factors, and five factors with homogenous and uniform reliability, ranging from .76 ~ .90, were selected from each set. Apart from two items, the correlation between sub-items and main items all reached .6 or above, and the construct validity explained total variance of 66% and 76%, respectively, indicating excellent reliability of the sample data and high internal stability and uniformity. The factor loading values for all observed variables in this study reached .6 or above, exceeding the .5 standard established by Anderson and Gerbing (1998) and Bagozzi and Yi (1988). Further analysis confirmed that results were significant, thus demonstrating that each observed variable had good convergent validity. Upon comparison of the inherent dimensions present in the model, if the dimension correlation is less than the explained variance of the dimension (Fornell and Larcker, 1981), or if the confidence interval does not include 1 (Brock and Barclay, 1997), it demonstrates that good divergent validity existed between different dimensions. In this study, the confidence interval of the respective correlations between inherent dimensions did not include 1, demonstrating that the divergent validity between different inherent dimensions in this study is fairly good.

This assessment test of role strain in nursing students possesses five dimensions each in threats and expectations, and demonstrates the tension and impact, as well as expectations, of nursing student just starting pediatric practicum. The inner feelings of the reality role and the ideal role were suitably expressed, allowing explanations as to the root cause of actions and emotional reactions to be developed. As for the roles that threats and expectations play in the role mission of nursing students, instructors can make use of this survey to accept students and provide caring and assistance, with the aim of fostering a positive and proactive attitude and reducing the discomfort experienced during practicum. The eventual goal is to strengthen the expectations of nursing students and help them expand their ideal roles.

Analysis dimension of threat events in role strain: Stress in the reality role is generated by events such as worries about reading reports and case reports, self-lacking in abilities, inability to find useful magazines or papers to read, poor quality sleep induced by required early rising, and physical/ mental exhaustion. Uncertainty in the reality role involves fear of unclear situations, sudden emergency situations, threatening nursing examinations and treatments, death of sick children, and managing sad situations. Tension in the reality role is induced by lack of professional knowledge and experience, fear of doing the wrong thing, under-development of the ability to cope with change, and depression caused by inability to adequately utilize technical skills. Mistrust in the reality role stems from bad interactions, poor interpersonal communication, and fear of hurting others or making others feel uncomfortable. Exhaustion in the reality role results when nursing students feel that they cannot handle requests, or are rejected, or make frivolous agreements. Conflict in the reality role emerge when nurses feel strange to their environments, and when the demonstration standards of providing care differ greatly between classroom demonstrations and clinical standards (Chen, 2010). Threaten events are similar with nursing students' subjective understanding of unsafe practices in response at risk for unsafe clinical practices-vulnerable, unprepared, unknowing, and distanced students (Mossey, Montgomery, Raymond, and Killam, 2012). Ineffective interpersonal interactions, knowledge and skill incompetence, and unprofessional image also were reported by unsafe nursing students in clinical learning situations (Killam, Luhanga, and Bakker, 2011).

Analysis dimension of the expectation events in role strain: Confidence in the ideal role is demonstrated when nursing students interact with people or their surroundings in a confident manner that makes others feel that they are competent. With confidence, nursing students are better able to adjust, express themselves, build confidence, exercise self-control, feel hope, and experience solid and meaningful learning. Idealized items in the ideal role include understanding how to express love, easy approachability and projecting feeling of warmth, warm caring, calmness/ blissfulness, cultivation of sensitivity, and learning true meaning. Personal status on the ideal role involves expecting classmates to cooperate and help each other; hoping instructors will have unique and mild

teaching attitudes, hoping the medical team will have friendly attitudes, and throwing oneself wholeheartedly into learning if these confidents are adequate. Competition in the ideal role arises because nursing students hope to show themselves as full of energy and vigor, with the ability to be accepted by others, to develop feelings of self-worth, to receive commendations, and to hope others. Performance in the ideal role consists of expectations that diseases can be treated, working conditions can be clean, and the working atmosphere to be harmonious and peaceful (Chen, 2010).

When nursing students feel threatened by role strain, if educational and professional nursing resources can intervene in a timely fashion, helping nursing students to adjust, modify interactions with others, and overcome threats, then resources are being effectively employed to help nursing students learn and develop. This may resolve conflicts developed during practicum, and can help to foster positive competition and cooperation. In turn, this will allow nursing students to develop a solid mindset and be filled with hopes and ideals toward the practicum process, and allow these nursing students to participate and build satisfactory relationships between the medical team and practicum instructors and students, which can then induce students to throw themselves more whole heartedly into practicum studies and encourage students to gain better results.

Study Restrictions

Factor analysis requires that sample sizes must be either greater than 200 or 5 times the number of questions in the survey being analyzed. Although the sample size for this study was only 103, there was high homogeneity among the samples, and the sample size is close to 5 times the number of variable items, which were 23 and 21, respectively. Furthermore, the sample size falls between 100 to 200 (Gorsuch, 1983), and conforms with the requirement that psychological test need at least 50 samples or more in order to perform factor analysis (Sapnas and Zeller, 2002). The measured square multiple correlation for all variables was .6 or greater, indicating that the internal variables are highly explainable and the convergent validity of the assessment test is fairly good. Mass collection methods were used to gather the data for this study, and therefore limits on time efficiency and research effectiveness were present when surveying participants. Therefore, research boundaries were clearly defined. In this study, subjective evaluation was used for all constructs, as participants, using the Likert scale, scored survey questions according to their own subjective attitudes; this may have an impact on confirmatory reliability and validity analysis. In addition, this study was limited to college-level nursing students in southern Taiwan, and further examination is needed before these results can be extrapolated to nursing students in other areas or educational programs. Also, the generalized validity of this study shows room for improvement.

CONTRIBUTIONS

Study design: JYC; Data collection: YYL, JYC, CCH; Analysis: JYC, CCH;
Manuscript preparation: JYC.
Conflict of interest: None

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