Original Article

Assessment of Comfort and Worry among Greek Pediatric Nursing Students Prior and after their Clinical Training

Evangelos Dousis, RN, PhD
Associate Professor, Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece

Ioannis Koutelekos, RN, PhD
Assistant Professor, Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece

Chrysoula Dafogianni, RN, PhD
Associate Professor, Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece

Evdokia Misouridou, RN, PhD
Associate Professor, Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece

Afroditi Zartaloudi, RN, PhD
Assistant Professor, Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece

Eleni Evagelou, RN, PhD
Professor, Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece

Konstantinos Petsios, MHSc, MHM, PhD
Research Unit, Onassis Cardiac Surgery Center, Athens, Greece

Correspondence: Evangelos Dousis, Mail address: Koumoundourou 130, Pireas, 18544, Athens, Greece. E-mail: edousis@uniwa.gr

Name and the postal address of the place where the work was carried out: Department of Nursing, Faculty of Health and Care Sciences, University of West Attica, Athens, Greece, Agiou Spyridonos, 12243 Egaleo, Athens, nurs@uniwa.gr

Abstract

Background: Nursing students during their clinical practice (CP) may experience negative feelings, such as fear and anxiety that may affect their comfort zone and lead to extensive worry, impacting their clinical performance.
Aim: This study aimed to assess the comfort and worry to Greek nursing students during their pediatric CP.
Methodology: This is a descriptive, exploratory, comparative quantitative study. The revised "Pediatric Nursing Student Clinical Comfort and Worry Assessment Tool" was administered to 121 nursing students prior and after their pediatric CP.
Results: Nursing students experienced less worry at the end of the pediatric CP but adequate comfort prior and after the CP. Male students rated higher the worry before the enactment of pediatric CP ($t = 2.204$, $p = 0.029$, 95% CI: 0.030, - 0.568). The students with greater theoretical knowledge regarding pediatric nursing rated higher the worry prior to pediatric CP ($t = - 2.28$, $p = 0.024$, 95% CI: - 0.45, - 0.03). Students that were anxious, in relevance to providing care to pediatric patients, showed lower worry ($t = - 2.289$, $p = 0.005$, 95% CI: - 0.51, - 0.10) after the end of the CP. Hospital environment, the level of communication with staff and clinical educators, and the interaction and trust relationship with children and families were rated as the most positive experiences.

Conclusions: Nursing students during their pediatric CP seem to experience increased worry interrelated to their anxiety levels. However, at the end of their training the levels of worry decrease and they express acceptable comfort levels.

Keywords: worry and comfort, students, nursing, pediatric nursing, pediatric hospital, nursing education research

Introduction

Nursing education systems widely acknowledge the important role of clinical practice (CP) and its role in the development of skills, knowledge and critical thinking. However, this educational process exposes students to a number of stressors along with expectations regarding their performance. As stated in the literature, students may experience negative feelings such as frustration, regret, stress, and disappointment that may affect their comfort zone and lead to extensive worry. On the other hand, positive experiences, good communication & clinical skills and adequate theoretical knowledge could stand as barriers to such feelings (Tambag, 2021). In literature there is an increasing number of articles referring to the stress and worry that nursing students face during their CP. Interestingly, this has been examined in a variety of clinical settings providing specialized care, such as pediatric clinics. Among others, the fragility of patients, the parental presence and patients' age-related therapy were identified as students' anxiety determinants (Elliott, 2002; Moscaritolo, 2009; Al-Qaaydeh, Lassche & Macintosh, 2012). In addition, the sources of stress and worry among nursing students can be varied due to the unique challenges of the nursing profession such as the requirements for memorization, the lack of skills in clinical interventions, the lack of communication skills during the interaction with patients and their family members and the incomplete student–teacher relationship in practice environments (Martos, Landa & Zafra, 2012; Mamaghani et al., 2019). Moreover, nursing workload, increased feeling of responsibility along with limited coping skills, time pressure and inadequate motivation (internal or external) are also important contributing factors that lead to increased stress in nursing students (Tambag, 2021).Although pediatric CP is no more stressful than CP in other clinical areas or adults (Oermann & Standfest, 1997), students report moderate stress during their training in providing care for children, mainly due to their unfamiliarity with pediatric dosages and fear of making an error in drug administration that will result in harm along with parental presence and communication limitations (Zhao et al., 2019; Oermann & Lukomski, 2001; Lassche et al., 2013; Ojiro & Naragino, 2010). In a recent qualitative study nursing students were interviewed and stated that their hesitation to interact with children were related to the presence of the parents, the child's reactions and discomfort, the fear to provide care due to unfamiliarity and fragility of patients and anticipatory anxiety (Ojiro & Naragino, 2010).

Nursing students' concerns about their CP in pediatric nursing (PN) should be recognized and addressed as they adversely affect students' clinical learning and performance (Lassche et al., 2013). Researchers reported a statistically significant correlation between "practice setting" and "nursing school setting" that indicate that students associate the educational environment with the quality of nursing care and patient relationships. The ward environment and the leadership style of the head nurse were considered less important factors for learning ((Kleehammer, Hart & Keck, 1990; Altay & Toruner, 2014; Papastavrou et al., 2010). Students are more concerned about evaluating pediatric patients, explaining interventions to a child, and administering medication (Lassche et al., 2013). Clinical practice contributes valuably to the development of professional nursing skills and "structures the base" for the future nurses. Students' worries and feelings should be assessed not only in order to evaluate the quality of clinical education but most importantly in order to determine whether they may contribute to decreased performance and overall skill acquisition (Oermann & Lukomski, 2001; Chen, 2010). Alleviating these worries may contribute to better student outcomes and better clinical competence in the pediatric clinical setting (Coetzee, 2004). Students report that interpersonal relationships with doctors, nurses, and other health professionals produce stress. Even the majority of students communicate effectively with patients and their families, a significant number do not have confidence in communicating with doctors. In addition, uncertainty about their own clinical skills

was the most worrying aspect of clinical experience (Amsalu et al., 2020; Villeneuve et al., 2018; Al-Asnag & Jan, 2002). The experience of nursing students in PN practice rotation is positive. At the end of the cyclical shift in nursing departments, fewer students were concerned about causing pain or increasing children's pain during diagnostic and therapeutic procedures, fewer believed that children were too difficult to examine and cooperate with, and fewer worried about the difficulties of intravenous line placement (Villeneuve et al., 2018; Kim, 2003). The following factors related to students' stress and anxiety in pediatric CP have been studied: the role of the clinical professor, clinical instructor, postgraduate student supervising their CP, the use of humor, the use of CP diaries, the preparation of students with courses prior the CP (Elliott, 2002; Chen, 2010; Dahlqvist, Söderberg & Norberg, 2008). These worries may contribute to decreased performance and overall skill acquisition (Oermann & Lukomski, 2001; Chen, 2010). Alleviating these worries may contribute to better student outcomes in the pediatric clinical setting. In Greece, there is limited data concerning the experience of nursing students during pediatric CP and this data is not assessed with a validated self-report tool. The main purpose of this study was the assessment of the comfort and worry (C&W) to a sample of Greek nursing students during their pediatric CP and in parallel to translate, validate and perform psychometric testing of the "Pediatric nursing student clinical C&W assessment tool" (C&W tool). In addition, an overall assessment of the PN clinical practice was performed.

Materials and Methods

Design: This is a descriptive, exploratory, comparative quantitative study to evaluate the effect of nursing students' perceptions and experiences during their pediatric clinical training, on their worry and comfort, through the use of a self-reported assessment tool. This study was approved by the Research Ethic Committee of the Department of Nursing of the University of West Attica (Ref. No 17/13-12-2018). The research team informed the nursing students about the aim, content, method, and duration of the study, a day before the enactment of their pediatric clinical training, about the aim of the study and the participants signed an informed consent. The anonymity of the students at all stages of the study was respected. The study was conducted in accordance with the Helsinki Declaration principles. Undergraduate nursing students from the Department of Nursing in the University of West Attica were approached and asked to participate in the study. The study was conducted during their CP in the frames of the PN course. The pediatric clinical training was performed in pediatric wards in the public pediatric hospitals of Attica in small groups of students, guided by a clinical educator in each group. The participation in the study was voluntarily and in total 12l nursing students were recruited (response rate 86.4%) and signed informed consent prior to their pediatric CP.

Measurements

Demographics: Student demographics were obtained from all students during the first stage of the study prior to the enactment of their CP (group a) and included age, gender, data regarding their participation in previous clinical training courses and completion of courses, previous education, occupational status, hospitalization experience in childhood, experience of painful interventions during hospitalization in childhood, experience of administration of drugs to children, desire to work as pediatric nurse in the future and self-evaluation of anxiety status.

C&W assessment: The C&W tool was designed as a survey instrument to evaluate student C&W before and after PN experiences (Al-Qaaydeh, Lassche & Macintosh, 2012). The tool is consisted by two subscales assessing both the "comfort" and "worry" elements. A Likert-type scale with four choices ranging from strongly disagree to strongly agree was used (assigned as 1 to strongly disagree and 4 to strongly agree). Two items (3 & 5) were formed to indicate lack of comfort and therefore they were reverse coded prior of the final scoring. An additional option of "not applicable" was provided with each item. Items were treated as missing values when not applicable was selected or the answer was not answered. More specifically C&W tool items are (Al-Qaaydeh, Lassche & Macintosh, 2012):

- Comfort level within pediatric clinical setting:

1. Q1: I am comfortable in performing a pediatric assessment

2. Q2: I am comfortable explaining procedures / medications / therapies to a child
3. Q3: I am uncomfortable administering medications to a child
4. Q4: I am comfortable administering therapies or performing procedures on a child
5. Q5: I am uncomfortable helping children and their families cope during painful procedures
6. Q6: I am comfortable in providing support to children and their families during times of crisis and grief

- Worry within clinical rotation:

1. Q7: I am worried about caring for an ill child
2. Q8: I am worried about causing physical harm to a child during this rotation
3. Q9: I am worried about causing emotional harm to a child during this rotation
4. Q10: I am worried about causing a child pain during this rotation
5. Q11: I am worried about interacting with children's' families.

"Comfort" was defined as the familiarization of students with the clinical environment, their exposure to clinical experiences and the knowledge of these experiences. While "Worry" was defined as excessive anxiety, stress and thoughts about CP and the clinical environment or other related issue (Lassche et al., 2013).

The C&W tool was translated into Greek and evaluated for its adaptation to Greek culture. Then there was a reverse translation from Greek into English. As there was no discrepancy between the Greek and English translations the questionnaire was accepted for use.

Internal consistency for the subscales was evaluated by calculating Cronbach's alpha. The values were found to fall within generally accepted ranges (before: comfort = 0.768, worry = 0.809; end: comfort = 0.845 worry = 0.796) for both subscales (C&W) at both time points (beginning and end of the semester). The usability of the C&W tool was evaluated.

Pediatric CP assessment: The students assessed their negative and positive experiences at the end of the pediatric practice period. Their answers were rated from authors as negative, positive or neutral and were divided in 5 thematic categories.

Procedure of data collection: The study was conducted in two phases from October 2018 up to January 2019. At each stage of the study, participants retained the right to withdraw their participation. The first day of their CP the students were asked to fill the study questionnaire (demographic data form and the C&W tool) with the presence of the research team representative in order to provide additional information if needed and students were given adequate time to complete the data. The participants were also asked to complete the same questionnaire just after the end of their pediatric clinical training. In addition, an open-ended qualitative question regarding the overall assessment of their pediatric clinical training and their positive or negative experiences was provided at this stage (Lassche et al., 2013).

Due to anonymity in order to enhance participation, identification linking for pre and post assessments were not kept. Two groups of students were formed (group a concerned the students before their CP in PN and group b the same students after their CP).

Data analysis: Data analysis was performed using Statistical Package SPSS version 23.0 (SPSS, Inc., Chicago, IL). Descriptive statistics are reported as mean, standard deviation (SD), and 95% confidence interval (CI). Since we did not use identifiers of the participants' assessment before and after pediatric CP, we were unable to calculate individually the scoring changes. Alternatively, we assessed changes in C&W for the group as a whole using the independent samples t test. Kolmogorov-Smirnof normality test was performed for continuous values. The Pearson product-moment correlation coefficient was used as a measure of the strength of a linear association and one-way Anova to assess for significant differences on a continuous dependent variable by a categorical independent variable. For categorical variables Chi-Square test was performed. We set our significance level at 0.05.

Results

General characteristics of the participants In total 121 nursing students (22 male (18.2%) and 99 female (81.8%)) with a mean age 23.87 ± 4.37 years (median 23) were recruited and assessed in the two periods. The majority of them (N = 115, 95.1%) were recruited during the last year of their studies and only 6 students (4.9%) were in their 5th or 6th semester. However, nearly one in three students (N = 41, 33.9%) had not completed his general clinical nursing practice. In relevance to their theoretical

knowledge concerning PN, 23.1% (N=28) stated no attendance of PN lecture, 11.6% (N = 14) stated attendance of one course of PN and 79 (65.3%) stated that they have attended two or more courses in relevance to PN. In addition, 25.6% (N = 31) of the students stated that have administered medicine or fluids to pediatric patients prior to their CP. Noticeably, 55.4% (N = 67) of the participants reported that they would like to work as pediatric nurses after their graduation. Moreover, 13 participants (10.7%) had already graduated from another institution/university and among them 5 (4.1%) from another health care institution. The majority of the participants (N = 73, 60.3%) reported that they were working in full or part time jobs during the period of the clinical training. Additionally, the participants were asked to state whether they have been admitted to a pediatric hospital during their childhood and to characterize this experience. As a result, 51.2% (N = 62) stated an admission to a pediatric hospital during childhood and the majority of them rated it as a positive experience (69.4%) and 50% of them stated a painful experience during that admission. Participants were also asked to self-rate their anxiety status and the majority characterized themselves as anxious (N = 72, 59.5%).

C&W tool scoring The mean scoring for C&W subscales before and after pediatric CP was 1.94 ± 0.44 & 2.35 ± 0.58 and 2.24 ± 0.54 & 1.97 ± 0.47, respectively. Means and standard deviations for individual items and summary scores are illustrated in Table 1. According to our results, students reported less worry at the end of the CP but adequate comfort, when compared with that at the beginning it. The individual item comparison are presented in Table 2.

C&W tool scoring vs demographics Male students rated higher the worry subscale before the enactment of pediatric CP (t = 2.204, p = 0.029, 95% CI: 0.030, - 0.568) with a mean of 2.59 ± 0.58 for male and 2.29 ± 0.57 for female students. The age was not significantly correlated with worry or comfort neither before nor after clinical exercise. Neither was the semester of education since the mean difference between students was not statistically significant.

In addition, there was noticed a difference in both C&W after the end of pediatric CP, between students that had completed all previous CP (comfort mean score: 2.45 ± 0.55 & worry mean score: 2.03 ± 0.45) in comparison to students that had not attended all their previous semester CP (comfort mean score: 2.13 ± 0.51 & worry mean score: 1.87 ± 0.50).

However, only in worry subscale the difference was statistically significant (t = - 3.128, p = 0.002, 95% CI: - 0.52, - 0.12). The students with greater theoretical knowledge regarding PN rated higher the worry subscale prior to pediatric CP (t = - 2.28, p = 0.024, 95% CI: - 0.45, - 0.03). In addition, significantly higher rated worry subscale before (t = 2.196, p = 0.042, 95% CI: 0.01, – 0.59) and after (t=2.206, p = 0.037, 95% CI: 0.01, – 0.36) pediatric CP, students that had already been graduates from another department (Mean before = 2.62 ± 0.45, Mean after = 2.14 ± 0.25) in comparison to students with no previous degree (Mean before = 2.32 ± 0.59, Mean after = 1.95 ± 0.49). There was no statistical difference in C&W ratings before or after pediatric CP related to admission to pediatric hospital during their childhood, independently if this admission was rated as a positive or a negative experience or whether it was interrelated with a painful experience or not. Interestingly, students that stated previous experience of drug administration to pediatric patients were less worried before pediatric CP (t = 2.69, p = 0.008, 95% CI: 0.08, - 0.55).

Notably, this difference was not statistically significant after the end of practice. Students that stated interest to become pediatric nurses were more comfort based on their comfort subscale scoring in comparison to students that were not interested in becoming pediatric nurses (t = - 2.11, p = 0.037, 95% CI: - 0.32, - 0.09). Students that were anxious, in relevance to providing care to pediatric patients, showed lower worry scores (t = - 2.289, p = 0.005, 95% CI: - 0.51, - 0.10).

Assessment of pediatric CP The students were asked with an open question to report their negative and positive experiences at the end of the pediatric practice period. Their answers were rated from authors as negative, positive or neutral and were divided in five thematic categories as illustrated in Table 3. The hospital environment, the level of communication with staff and clinical educators and the interaction and trust relationship with children and families were rated as the most positive

experiences. On the other hand, organizational aspects and student's active participation in the provision of care showed the higher negative assessments (24.8% and 21.5%, respectively). However, there was no statistical significant difference based on the type of their experience in relation to C&W score.

Usability of the C&W tool The usability of the C&W tool was also evaluated. Participants were able complete the questionnaire in an average of 8 - 10 minutes and the missing values were 0.53% for the first period and 1.58% during the second period. Interestingly, a number of participants, especially after the CP, responded that the item was not applicable (1.28% & 3.23%, respectively) (Table 4).

Table 1. Means and Standard Deviations of Pediatric nursing student clinical Comfort & Worry assessment tool items and subscales

Item	Period	N	Mean	SD	Std. Error Mean
Q1	Before	118	1.98	0.506	0.047
	After	117	2.32	0.703	0.065
Q2	Before	120	1.81	0.639	0.058
	After	118	2.25	0.739	0.068
Q3	Before	118	2.06	0.631	0.058
	After	118	2.38	0.666	0.061
Q4	Before	119	2.08	0.671	0.062
	After	118	2.19	0.716	0.066
Q5	Before	120	1.86	0.626	0.057
	After	117	2.25	0.776	0.072
Q6	Before	121	1.84	0.742	0.067
	After	117	2.09	0.805	0.074
Comfort subscale	Before	121	1.94	0.440	0.040
	After	118	2.24	0.548	0.050
Q7	Before	121	2.17	0.771	0.070
	After	117	1.93	0.612	0.057
Q8	Before	118	2.27	0.747	0.069
	After	117	1.85	0.561	0.052
Q9	Before	119	2.54	0.811	0.074
	After	116	2.09	0.659	0.061
Q10	Before	120	2.21	0.744	0.068
	After	116	1.84	0.599	0.056
Q11	Before	120	2.58	0.796	0.073

	After	117	1.97	0.725	0.067
Worry subscale	Before	121	2.35	0.584	0.053
	After	118	1.97	0.474	0.043

Table 2. Results of independent t-test comparisons for instrument items and subscales

Item	t	df	p	Mean Difference	Std. Error Difference	95% CI of the Difference	
						Lower	Upper
Q1	-3.677	233	0.000	- 0.300	0.082	- 0.460	- 0.139
Q2	-4.608	236	0.000	- 0.419	0.091	- 0.599	- 0.240
Q3	-3.536	234	0.000	- 0.299	0.084	- 0.465	- 0.132
Q4	- 0.970	235	0.333	- 0.087	0.090	- 0.265	0.090
Q5	-4.151	235	0.000	- 0.380	0.092	- 0.560	- 0.200
Q6	-2.418	236	0.016	- 0.242	0.100	- 0.440	- 0.045
Comfort subscale	-4.452	237	0.000	- 0.286	0.064	- 0.414	- 0.160
Q7	2.675	236	0.008	0.242	0.090	0.064	0.420
Q8	4.828	233	0.000	0.416	0.086	0.247	0.586
Q9	4.589	233	0.000	0.443	0.097	0.253	0.633
Q10	4.129	234	0.000	0.364	0.088	0.190	0.537
Q11	6.071	235	0.000	0.601	0.099	0.406	0.796
Worry subscale	5.411	237	0.000	0.373	0.069	0.237	0.509

Table 3. Student's assessment of pediatric clinical practice

Thematic category	Positive		Neutral		Negative		No answer	
	N	%	N	%	N	%	N	%
Hospital environment	78	64.5%	13	10.7%	12	9.9%	18	14.9%
Communication-Collaboration	76	62.8%	26	21.5%	2	1.7%	17	14.0%
Participation-CP	61	50.4%	17	14.0%	26	21.5%	17	14.0%
Interaction with children & families	75	62.0%	24	19.8%	5	4.1%	17	14.0%

Organizational aspects - Trainers assessment	55	45.5%	19	15.7%	30	24.8%	17	14.0%
Total	**345**	**57.0%**	**99**	**16.4%**	**75**	**12.4%**	**86**	**14.2%**

Table 4. Usability of the Pediatric nursing student clinical Comfort & Worry assessment tool. Rates of missing data & not applicable selection

Item	Before CP in PN				After CP in PN			
	Missing		Not Applicable		Missing		Not Applicable	
	N	%	N	%	N	%	N	%
Q1	1	0.83%	3	2.48%	1	0.83%	4	3.31%
Q2	0	0.00%	1	0.83%	0	0.00%	3	2.48%
Q3	2	1.65%	3	2.48%	2	1.65%	3	2.48%
Q4	0	0.00%	2	1.65%	1	0.83%	3	2.48%
Q5	1	0.83%	1	0.83%	1	0.83%	4	3.31%
Q6	0	0.00%	0	0.00%	1	0.83%	4	3.31%
Q7	0	0.00%	0	0.00%	3	2.48%	4	3.31%
Q8	2	1.65%	3	2.48%	3	2.48%	4	3.31%
Q9	1	0.83%	2	1.65%	3	2.48%	5	4.13%
Q10	0	0.00%	1	0.83%	3	2.48%	5	4.13%
Q11	0	0.00%	1	0.83%	3	2.48%	4	3.31%
Total	**7**	**0.53%**	**17**	**1.28%**	**21**	**1.58%**	**43**	**3.23%**

Discussion

According to our results, students reported less worry at the end of the CP and adequate comfort, when compared with that at the enactment of it. They were generally anxious, in relevance to providing care to pediatric patients and their levels of worry were increased independently of their previous training, theoretical background or personal experience of hospitalization during their childhood. Students with increased interest in PN expressed less worry and were more comfort in comparison to students that were not interested in becoming pediatric nurses.

These findings are similar with previous studies supporting that students report significantly more comfort and less worry at the end when compared with the beginning of their CP. Unfamiliarity with dosage calculations, children's reactions and rapid mood changes, parental presence, lack of communication skills and limited clinical experience seem to be the main determinants of increased worry (Ojiro & Naragino, 2010). Characteristically, Lassche et al. similarly found that the worry of causing a child pain had the highest worry impact, especially at the beginning of the training, and showed the smallest improvement over time (Lassche et al., 2013). This is in accordance to a recent study that 63.9% of the nursing students, self-evaluated their current knowledge as inadequate (Aydın & Bektaş, 2020). On the other hand, the greatest improvement in comfort was noticed in performing a pediatric assessment,

explaining interventions and administering medications to a child (Lassche et al., 2013).

Based on our analysis, male students rated higher the worry subscale before the enactment of pediatric CP in comparison to the female students. This can be attributed to the results of other studies showing that nursing students report anxiety related to their CP (Villeneuve et al., 2018; Al-Asnag & Jan, 2002). Males scored statistically significant higher state anxiety levels than females, however this was not statistically significant, meaning that the existent difference between males' and females' self-perceived anxiety levels in our sample was limited. On the other hand, a larger body of research supports that female nursing students generally score slightly higher in state anxiety than males. This finding may not be surprising as women have a higher lifetime prevalence of anxiety disorders compared to men (Villeneuve et al., 2018). Kukulu et al. reported that undergraduate male nursing students possessed more self-confidence than their female counterparts, but that self-confidence ratings fell from 84.5% to 76% between the second year and fourth year of school (Kukulu et al., 2013). Self-confidence is a factor that could affect C&W scores. In this regard, a recent meta-analysis (2018) illustrated the higher incidence of anxiety disorders in female nursing students. Nevertheless, the predictors of such prevalence are not fully identified and therefore more comparative studies are needed to reveal the specific determinants and possible triggers (Tung et al., 2018).

Students that had already been graduates from another department, stated significantly higher worry subscale scores, in both periods, in comparison to students with no previous degree. On the contrary, Villeneuve et al. reported that there was no statistically significant difference between previous post-secondary education and self-perceived anxiety levels in the clinical setting (Villeneuve et al., 2018). However, it is widely acknowledged that students affected by anxiety are at increased risk for poor clinical performance outcomes during their clinical training. Simpson & Sawatzky in their concept analysis regarding clinical placement anxiety among nursing students, concluded that among other stressors, C&W due to the unfamiliar environment and uncertainty regarding their theoretical knowledge, may have a negative impact on the student's clinical training (Simpson & Sawatzky, 2020). Zhao et al., in their observational study, stated that the most common source of interruption during pediatric medication administration was attributed to the working environment and interruptions favor the occurrence of errors in nursing practice (Zhao et al., 2019). Fear of making an error due to limited competence or familiarity with dosages calculations and clinical interventions in small children are acknowledged anxiety determinants (Ojiro & Naragino, 2010).

In other studies there is a clear finding of improvement regarding worry levels, especially in specific domains related to painful procedures, assisting families and children cope with painful procedures, and helping families and children cope during times of grief and crisis (Lassche et al., 2013). It had been signified that, several impressions about the pediatric CP were significantly decreased at the end of the rotation including worry about inflicting pain or increasing the suffering of children during diagnostic and therapeutic procedures, believing that children are very difficult to examine and uncooperative, and worries about the difficulties of establishing intravenous access (Villeneuve et al., 2018). Our finding support previous findings that clinical training in pediatric settings increases students' competence over time and enhances their communication skills and in other words the interaction with pediatric patients increases their understanding of hospitalized children and this is a major component of their clinical competence (Ojiro & Naragino, 2010). This is in accordance to the decrease in worry and the stabilization of comfort at the end of clinical training, which indicates the improvement in clinical competence regarding pediatric care.

We found that there was no statistical difference in C&W ratings before or after pediatric CP related to their previous admission to pediatric hospital during childhood. Moreover, there was no effect, independently if this admission was rated as a positive or a negative experience or whether it was interrelated with a painful experience or not. Despite the poor literature, the finding can be attributed to that students possess an experiential knowledge of how to counteract stressful feelings by using simple strategies. The self-comforting

strategies are learned early in life and experiential knowledge is often sufficient for allaying feelings of worry, sorrow, shame, guilt, tension, inferiority and unworthiness, all of which create inner pressure, interfere with efficiency of performance and threaten personal well-being (Kim, 2003).

The age was not significantly correlated with Worry or Comfort neither before nor after clinical exercise. This could be attributed to the fact that stress does not seem to be related to the age of nursing students but is mainly interrelated with the ability of students to develop coping mechanisms and adaptability in new situations, independently of their age (Villeneuve et al., 2018). However, senior students tend to state higher levels of stress than novice students (Simpson & Sawatzky, 2020). In accordance to that, in our study the students with greater theoretical knowledge from previous semesters regarding nursing, rated higher the worry subscale prior to pediatric CP. It is well shown in previous studies that students' participation in theoretical courses is essential in order to provide the basis for skills development in CP. The level of theoretical knowledge integration into CP is a key determinant in the success of CP. Incomplete attendance of the theoretical course may have a direct effect in the ability of students to limit their worry and affect their comfort in pediatric clinical training (Elliott, 2002; Onieva-Zafra et al., 2020).

From another point of view, self-esteem and self-confidence experienced by nursing students may affect the levels of worry and feelings of comfort. Lo concluded that students during their first study year, experienced significantly less transient stress as compared with the second year of their studies. Whereas, students in year 3 had more positive self-esteem than year 2 students. Chronic and transient stress, were significantly correlated with avoidance coping behaviors, and negative self-esteem. Positive self-esteem was significantly correlated with proactive coping behaviors (Lo, 2002). Other researchers noted that senior nursing students were expressing their anxiety in a higher level and especially in the clinical setting, interrelating their anxiety with perceptions of non-supportive faculty (Ojiro & Naragino, 2010). The comfort of students is crucially affected, primarily in the beginning of their pediatric clinical training. The increases worry regarding communication with children and families, the fear for making a mistake and uncertainty regarding practical skills are usually students' major concerns prior to the start of clinical experiences (Papastavrou et al., 2010). Fears about being/feeling left alone in a clinical setting as well as concern about the senior year also emerged. Confidence in physical assessment was lower at the beginning of clinical instruction and higher at the end of the junior year (Cowen, Hubbard & Hancock, 2016).

The majority of the participants in our study stated that they would like to work as pediatric nurses after their graduation. In literature, is noted that when students express positive feelings regarding their pediatric CP, this is related to increased comfort in providing care in children (Kleehammer, Hart & Keck, 1990). In a previous study, it was reported that female students were 3.4 times more likely to select pediatric settings as their first future career choice, and this choice did not change significantly from the beginning to the end of their CP (Oermann & Lukomski, 2001).

Regarding the students' work in parallel with their studies has been supported that nursing students' previous employment did not significantly impact self-perceived anxiety levels, while limited research has been done on the influence of prior employment on anxiety levels in the clinical setting (Villeneuve et al., 2018). Other study did find that work experience in a field related to healthcare facilitates confidence, decreases feelings of anxiety, and increases competence in nursing students (Hakimzadeh, 2015). According to our results, students that stated previous experience of drug administration to pediatric patients were less worried before pediatric CP. The effect of previous pediatric experience on pediatric CP has been studied and it is signified that administering pediatric medications is considered a common clinical stressor for students (Lassche et al., 2013; Hakimzadeh, 2015).

Based on our results, the majority of students characterized themselves as anxious prior to their CP. This is in line with other studies on CP of undergraduate nursing students that also reported mild to moderate levels of anxiety for the majority of nursing students, expressed with nervousness, difficulty in decision making, expression of negative feelings such as fear, anxiety, stress, and

decreased satisfaction (Villeneuve et al., 2018; Al-Asnag & Jan, 2002). Nevertheless, no significant correlations were found between age, previous education, previous employment, and self-perceived anxiety levels. Overall, students had a higher than normal level of self-perceived anxiety regarding clinical placements while nursing students' self-perceived anxiety levels in the clinical setting is higher than the anxiety levels of students enrolled in other college programs (Villeneuve et al., 2018). In addition, it has been supported that students in post graduate programs reported significantly higher stress in CP than undergraduate students. The semester prior to graduation was the most stressful time in terms of CP. The most prevalent stresses were coping with demands associated with patient care and their evaluation by a clinical educator (Oermann & Standfest, 1997). Our study participants stated that hospital environment, level of communication with staff, clinical educators and the interaction and trust relationship with children and families were rated as the most positive experiences. It is of great importance regarding pediatric clinical training, to be able to provide to students an educational environment in which they will be able to manage their worries and fear and feel free to experience positive interactions with patients and families (Kleehammer, Hart & Keck, 1990). This is more important in pediatric settings since it is well acknowledged that the clinical environment affect student's experiences producing highest degrees of anxiety in students (Al-Asnag & Jan, 2002). Connor & Howett supported in their study that the level of nursing students' stress was moderate and the primary source of stress came from family members interfering with care. Assignments ranked highest among students who identified other sources of stress (Connor & Howett, 2009). Significant differences existed between level of stress and fear of harming child by making mistakes, harming the patients during care, previous experience effect, and having negative interaction with patients, staff nurses, and instructors (Tsai & Huang, 2005). In accordance to previous studies, the positive experience at the end of clinical nursing training in a pediatric setting is related with the successful interaction with children, the competence to provide care to pediatric patients, the interaction with the health team and overall the knowledge, skills and experience that was gained (Villeneuve et al., 2018). Zamanzadeh et al. found that nursing students' self-esteem was determined by the sense of worthy related to their perceived professionalism level, socialization into the profession, and enthusing of them about being a nursing student (Zamanzadeh et al., 2016). Negative experiences with a nurse or instructor, freezing up, and uncomfortable patient/family experiences were also concerns (Elliott, 2002). The most pervasive theme of content was the students' perceptions about uncertainty regarding their own clinical skills, as well as doubts about personal adequacy as beginning staff nurses. The majority of these responses were expressed by the generic nursing students who had no previous experience of care in pediatrics (Al-Asnag & Jan, 2002). Thus, nursing students when asked to care for difficult or offensive patients, often disengage from intentional comfort touch because they feel pushed outside their comfort zone (Connor & Howett, 2009). A statistically significant correlation was showed in previous study between the sub-dimensions "premises of nursing care" and "premises of learning" indicating that nursing students are relating learning environment with the quality of nursing care and patient relationships. The ward atmosphere and the leadership style of the manager were rated as less important factors for learning (Altay & Toruner, 2014). Other researchers noted that relationships that students established with children and others in clinical setting emerged as key in their learning. The social process that was central to student learning was working out how to connect with a child in their care: puzzling out a connection. Each connection with a child contributed to the next and thus to the student's learning. Each connection also contributed to the student's resources, knowledge and experience base, adding to learning by further equipping the student for the next encounter with a child (Chen, 2010). Interestingly, Suess concluded that nursing students were more challenged than threatened. Potentially harmful emotions such as disappointment, disgust, anger, guilt and sadness were not exhibited in the students' emotional response to clinical experiences (Suess, 2005). Therefore, clinical educators are strongly encouraged to implement teaching approaches that will help students enhance their critical thinking and self-confidence in complex content (Alamrani et al.,

2018; Leila et al., 2013). On the other hand, this study noted that organizational aspects and student's active participation in the provision of care showed the higher negative assessments. In a related study, students stated after the end of their CP in PN that the most negative experiences were organization and duration of ward rounds, work load, poor outcome of some disorders, teaching experience, relationship with the nursing staff (Villeneuve et al., 2018). At the same time, it has been stated that negative appraisals on the part of students increase anxiety over new environment and associated changes, which, in turn, reduces acceptance of the environment and change, causes mistrust to the managers, stunts critical thinking, hampers teaching strategies, distances mutual interaction between teacher and students, and impedes the proper development of confidence and morale in the students at pediatric CP (Papastavrou et al., 2010). Others noted that, nursing students were not satisfied with the clinical component of their education as they experienced anxiety as a result of feeling incompetent and lack of professional nursing skills and knowledge to take care of various patients in the clinical setting (Sharif & Masoumi, 2005). The main limitations of the study are the single center sampling since all participants were students from one Nursing Faculty and the small size of the sample due to the sampling in one academic year.

Conclusion: Nursing students experience less worry and adequate comfort at the end of the pediatric CP, when compared with that at the beginning of it. They also self-rated themselves as anxious. The theoretical background of students, their previous experience in providing care in children and other demographics, along with their level of anxiety affect their feeling of C&W prior and after clinical training. The level of communication with staff and clinical educators, the interaction and trust relationship with children and families were rated as the most positive experiences, while organizational aspects and student's active participation in the provision of care showed the higher negative assessments. Clinical educators and curricula reforms should implement practices and learning methods that increase comfort and skills that assist students to cope with their worry during their pediatric CP. Pediatric nursing students should be supported especially at the beginning of the pediatric CP. The systematic attendance of theoretical courses and the acquisition of experience in the provision of care should be promoted before their CP. Therefore, it is clear that we should focus more in the determinants that increase worry and affect comfort in order to improve students' experiences and competence during their pediatric CP.

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