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Attitudes of Turkish Nursing Students Toward Clinical Practices and Factors Influencing Positive Learning: A Cross-Sectional Study

Türk Hemşirelik Öğrencilerinin Klinik Uygulamalara Yönelik Tutumları ve Olumlu Öğrenmeyi Etkileyen Faktörler: Kesitsel Bir Çalışma

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Abstract

Clinical practice, a critical component of nursing education, is a fundamental prerequisite for cultivating competent professional nurses. This study aimed to determine Turkish nursing students' attitudes towards clinical practice and factors influencing positive learning outcomes. A cross-sectional design was used with 414 nursing students. Data were collected via the Student Information Form and Attitude Scale towards Clinical Practices and analyzed using descriptive statistics, Two-Way ANOVA, and a multiple linear regression model. The mean attitude score was 100.48±16.31. Factors significantly associated with a more positive attitude included finding weekly clinical practice hours sufficient (β=0.314; p<0.001), willingly choosing nursing (β=0.203; p<0.001), attending orientation training (β=0.148; p<0.001), not experiencing difficulties during training (β=0.115; p=0.012), finding clinical practice areas adequate (β=0.115; p=0.011), and receiving sufficient support (β=0.097; p<0.001). Turkish nursing students generally have a positive attitude towards clinical practice. Enhancing clinical experiences, fostering a supportive learning environment, and increasing professional motivation may further improve their attitudes.

Keywords: Attitude, Clinical Practice, Nursing Education, Nursing Student.

Özet

Hemşirelik eğitiminin kritik bir bileşeni olan klinik uygulama, yetkin profesyonel hemşireler yetiştirmek için temel bir ön koşuldur. Bu çalışma, Türk hemşirelik öğrencilerinin klinik uygulamalara yönelik tutumlarını ve olumlu öğrenme çıktılarını etkileyen faktörleri belirlemeyi amaçlamaktadır. Kesitsel tipteki bu çalışma 414 hemşirelik öğrencisi ile gerçekleştirildi. Veriler, Öğrenci Bilgi Formu ve Klinik Uygulamalara Yönelik Tutum Ölçeği aracılığıyla elde edildi, verilerin analizinde tanımlayıcı istatistikler, İki Yönlü ANOVA ve çoklu doğrusal regresyon modeli kullanıldı. Klinik uygulamaya ilişkin ortalama tutum puanı 100.48±16.31 olarak bulundu. Daha olumlu bir tutumla anlamlı şekilde ilişkili faktörler önem sırasına göre; haftalık klinik uygulama saatlerinin yeterli bulunması (β=0.314; p<0.001), hemşireliği isteyerek seçme (β=0.203; p<0.001), oryantasyon eğitimine katılma (β=0.148; p<0.001), eğitim sırasında zorluk yaşamama (β=0.115; p=0.012), klinik uygulama alanlarının fiziksel yeterliliği (β=0.115; p=0.011) ve klinik uygulama eğitimi sürecinde yeterli yardım ve destek alabilme (β=0.097; p<0.001) idi. Türk hemşirelik öğrencileri genel olarak klinik uygulamaya karşı olumlu bir tutuma sahiptir. Klinik deneyimleri geliştirmek, destekleyici bir öğrenme ortamı yaratmak ve mesleki motivasyonu artırmak tutumlarını daha da iyileştirebilir.

Anahtar Kelimeler: Tutum, Klinik Uygulama, Hemşirelik Eğitimi, Hemşirelik Öğrencisi

Nursing education integrates both theoretical and clinical learning experiences to equip students with the knowledge and skills essential for professional practice. Each of these components reinforces the other, creating a comprehensive educational experience (Cusson et al., 2020). Clinical practice (CP), a cornerstone of nursing education, plays a critical role in transforming theoretical understanding into hands-on skills (Tuomikoski et al., 2020). While students acquire foundational knowledge through lectures, case studies, and classroom discussions, laboratory and clinical settings enable them to refine their clinical reasoning and practical abilities (Ugwu et al., 2023).

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Importantly, CP not only supports skill development but also contributes to students', ability to apply theoretical knowledge in real-life scenarios, engage in therapeutic communication, and build professional identity (Yu et al., 2021). Research has shown that CP significantly impacts nursing students' learning outcomes, motivation, satisfaction, and clinical competence. For example, Fathi and Ibrahim (2023) conducted a cross-sectional study among nursing students in Iraq and found that inadequate clinical integration hindered skills acquisition. Steven et al. (2023), through a qualitative study in Italy, highlighted how emotional safety during CP influenced students' learning experiences. Similarly, Xiang et al. (2023) reported in a large-scale survey in China that positive clinical environments enhanced students' achievement motivation and innovative behaviors. Moreover, the clinical environment itself shapes students' perceptions of nursing and their professional commitment. A cross-sectional study conducted in China emphasized the crucial role of the CP environment in cultivating a sense of value and fostering positive professional perceptions among nursing students, which significantly influences their professional commitment (Ying et al., 2023).

While the quality of CP is shaped by environmental and instructional factors, individual factors such as self-confidence, anxiety, learning styles, and attitudes are equally influential (Asadi et al., 2023; Helminen et al., 2016). Among these, students' attitudes toward CP are particularly critical, as they affect not only motivation but also behavior, learning engagement, and adaptation to professional roles (Aragaw et al., 2019; Ha, 2015). Attitude is considered an important construct in translating knowledge into action (Ajzen & Fishbein, 2000). According to the Theory of Reasoned Action, it serves as a central link between individual beliefs and knowledge and their behavioral intentions and actual behavior (Fishbein & Ajzen, 1975). In the context of nursing education, this theoretical perspective provides a useful framework for how students' attitudes shaped by their CP experiences can influence their willingness to engage, learn, and act within clinical settings. Positive or negative experiences during clinical placements may thus directly affect how effectively students integrate theoretical knowledge into practice (Ha, 2015; Ugwu et al., 2023). Aragaw et al. (2019) emphasize that the gap between theory and practice in nursing education may be associated with students' negative attitudes toward CP. Therefore, understanding nursing students' attitudes and the factors influencing them is essential. However, current research on this topic remains limited, and few studies have used validated tools to assess nursing students' attitudes toward CP (Aragaw et al., 2019; Ha, 2015).

In Türkiye, nursing education follows European Union standards and consists of at least four years or 4600 hours. This includes both theoretical and clinical training. At least one-third of the total training duration consists of theoretical education, while half is dedicated to clinical education (Kocaman & Yürümezoğlu, 2015). While there are some variations among institutions offering nursing education, the duration of CP training increases throughout each academic year for nursing students. During the spring semester of the first year of nursing education, a student may experience an average of 6-7 weeks (one day per week) in a CP setting. In contrast, senior nursing students spend a significant portion of the academic year (28 weeks, four full days per week) as intern nurses in a clinical environment.

Nursing lecturers are responsible for the clinical education of nursing students in Türkiye. They collaborate with students, guiding them in planning patient care, performing clinical nursing skills on patients, and developing therapeutic communication skills. However, it is acknowledged that the number of lecturers is insufficient when considering the number of students (Kara et al., 2022). Therefore, even though nurses are not directly responsible for the clinical education of students, their practices and approaches in the clinical setting serve as an important source of observational learning for nursing students. In some nursing schools, a mentor nursing practice aimed at enhancing school-hospital collaboration allows clinical nurses to take on responsibilities in CP, replacing the role of nursing educators. However, mentor nursing practice is not widespread across all nursing education institutions in Türkiye. Consequently, in Türkiye, CP education is carried out within a complex system, with lecturers and clinical nurses assuming different levels of responsibility. In the nursing education institutions where this study was conducted, there is no mentor nursing practice. However, as part of quality and accreditation efforts in higher education, stakeholder meetings have been organized before CP education. These meetings involve student representatives of the class, responsible faculty members of the course, and personnel responsible for nursing services in the hospital. Through these meetings, the aims and expectations of CP education are clarified, and the responsibilities of students, instructors, and hospital personnel in CP are mutually discussed. The literature emphasizes the importance of including clinical mentors in curriculum planning for CP education (Helminen et al., 2016).

Although several studies in Türkiye have explored nursing students' experiences, perceptions, and expectations regarding CP environments (Arkan et al., 2018; Ergezen et al., 2022; Kol & İnce, 2018) and more recent research has examined CP attitudes in relation to specific variables such as communication skills (Kınas et al., 2025), there remains a notable gap in research that comprehensively investigates nursing students' attitudes toward CP along with the factors that influence these attitudes, using validated and psychometrically sound instruments. This study aims to address that gap by examining both the attitudes of Turkish nursing students toward CP and the predictors associated with those attitudes. In doing so, it highlights both the conceptual importance of attitude in achieving positive learning outcomes and the practical implications for improving CP

curricula in nursing education. Based on this identified need, we believe that the findings obtained from this study may contribute to the goals of clinical learning by informing the planning and evaluation processes of CP programs. The aim of this study was to determine the attitudes of Turkish nursing students toward CP and to identify the factors influencing positive learning outcomes, by addressing the following research questions:

Q1: What are Turkish nursing students' current levels of attitudes towards CP?

Q2: Is there a difference between the attitudes of Turkish nursing students towards CP according to their characteristics?

O3: What are the predictors of Turkish nursing students' attitudes toward CP?

Method

Study Design and Setting

This cross-sectional study was conducted with students enrolled in the nursing departments of a state and a foundation university's faculties of health sciences located in the Aegean and Central Anatolia regions of Türkiye, between December 15, 2022, and April 15, 2023.

Participants and samples

The study population comprised 577 nursing students actively pursuing their education in the 2nd, 3rd, and 4th grades of the nursing undergraduate programs at the specified universities during the academic year 2022-2023. These students were invited to take part in the research. The minimum sample size necessary for the research was calculated to be at least 231, considering a 5% margin of error (d = 0.05) and a 95% confidence level (t = 1.96). In the calculation, the assumed proportion of the population (p) was taken as 0.5, and its complement (q) was 0.5, which is a conservative approach commonly used when the actual proportion is unknown. The sample size formula used was: $n= Nt^2pq / d^2 (N-1) + t^2pq$ as suggested by Baştürk and Taştepe (2013), where N represents the known population size. Throughout the research period, nursing students who discontinued their education, exhibited reluctance to participate in the study, and incomplete data collection forms were excluded from the study. Additionally, first-year nursing students were not included in the research since they did not have CP experience. Accordingly, out of a total of 577 students meeting the criteria, 414 voluntarily participated in the research. The participation rate of nursing students was 71.7%.

Data Collection

Data were collected face-to-face in classroom settings at a time that did not conflict with students' lectures or clinical practice hours. All participants were informed about the purpose of the research, and their voluntary consent was obtained. Nursing students who expressed a desire not to participate were allowed to withdraw from the study. To ensure the confidentiality of nursing students, they were requested to fill out the data collection forms anonymously. Moreover, it was emphasized that this study had no connection to the instruction or grading of any course. The students, on average, spent 20-30 minutes responding to two data collection forms.

Student Information Form; the form created by the researchers, grounded in the literature review (Aragaw et al., 2019; Ergezen et al., 2022; Kol & İnce, 2018), was designed to gather information on nursing students' individual characteristics (5 questions) and CP experiences (10 questions), comprising a total of 15 questions.

Attitude Scale towards CP; this scale was developed by Uysal and Bayülgen (2022) to determine the attitudes of Turkish nursing students towards CP. The scale consists of a total of 26 items and four sub-dimensions: Beliefs and Expectations towards CP (8 items), Positive Attitude towards CP (6 items), Negative Attitude towards CP (7 items), and Personal Development (4 items). It utilizes a 5-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). The scale has a potential score range of 26-130. A higher score indicates a more positive attitude of nursing students toward CP (Uysal &Bayülgen, 2022). Items under the "Negative Attitude toward CP" sub-dimension are reverse-coded prior to analysis. In these items, a response of "strongly agree" (5) is recoded as 1, "agree" (4) as 2, and so forth, to ensure that higher scores consistently reflect more positive attitudes across the entire scale. This scoring procedure is consistent with the original scale validation study. Uysal and Bayülgen (2022) reported a total Cronbach's alpha of 0.93 for the scale; this study found the Cronbach's alpha for the entire scale to be 0.94.

Ethical Considerations

To conduct this research, written permission was obtained from the administrators of both institutions, and ethical approval was obtained from the Non-Interventional Clinical Research Ethics Committee of the relevant university with protocol number 572 and approval date December 02, 2022. Before data collection, participating students were provided with an information sheet, and consent was obtained.

Data Analysis

The statistical analyses of the research data were conducted using SPSS version 22.0 (Armonk, NY: IBM Corp) software. Categorical data were presented with frequencies and percentages, while continuous variable data were expressed as means and standard deviations. The normality of the distribution of the data was assessed using Skewness-Kurtosis values, the Shapiro-Wilk test, and histogram graphs. To examine the effects of nursing students' characteristics and CP-related factors on their attitudes toward CP, a univariate approach using Two-Way ANOVA was employed. In this analysis, the main effects of each independent vari-

able were evaluated separately, without testing for interaction effects. The primary rationale for this approach was to avoid inflating the likelihood of Type I errors that might arise from multiple separate tests, while still allowing for a comprehensive comparison of each factors unique contribution to the dependent variable. Subsequently, variables with statistically significant main effects in the univariate analysis were included in a multiple linear regression model using the enter method to determine their predictive power on attitude scores. Categorical variables were converted into dummy variables for use in the multiple linear regression analysis. The assumptions of normality, homogeneity of variances, and multicollinearity were tested and met. A significance level of $p < 0.05$ was considered statistically significant for all analyses.

Results

Sociodemographic and Academic Characteristics of the Nursing Students

The mean age of the participants was 21.23±1.57; 81.6% were female, and 39.6% were third-year students. More than half of the nursing students (56.5%) willingly chose to study in the nursing department (Table 1).

Experiences of Nursing Students Regarding CP

One third (36.5%) of the participants continued their CP education in internal clinics (internal medicine, pulmonary diseases, cardiology, etc.), 42.8% engaged in CP twice a week, and the majority (83.6%) participated in orientation training before CP. The content of these sessions typically included topics such as infection control precautions, occupational health and safety, planning of patient care, principles and rules of the CP education process, the use of CP forms, and the introduction of CP areas. These sessions were usually conducted by faculty members and lasted approximately 2-4 hours, depending on the institution. Two-thirds (66.7%) negatively evaluated the adequacy of non-clinical facilities such as dressing rooms and resting areas. Among the participants, 27.3% reported experiencing difficulties during their CP. The specific problems most frequently encountered included concerns about harming the patient (25.2%), communication problems with the CP team (20.3%), and an insufficient number of instructors per student (17.5%). Other challenges reported were lack of self-confidence (15.8%), inadequate supervision by clinical nurses (13.0%), and unsuitable physical characteristics of the clinical environment (7.9%). The majority of nursing students (91.3%) expressed that they received sufficient support and assistance for the difficulties they faced during CP, with clinical nurses (43.3%) and lecturers (24.9%) being the most common sources of help and support. The support and assistance were related to areas such as the performance of basic nursing skills, therapeutic communication to reduce anxiety and build confidence, emotional support during challenging clinical situations, and reinforcement of theoretical knowledge (Table 2).

Attitudes of the Nursing Students Towards CP

The overall attitude score of nursing students towards CP was found to be 100.48±16.31 within a range of 26-130 (Table 3). When the mean attitude scores for the sub-dimensions of the scale were analyzed, the scores were found to be 33.08±5.10 for "Beliefs and Expectations Towards CP," 23.55±5.98 for "Positive Attitude Towards CP," 27.72±5.96 for "Negative Attitude Towards CP," and 16.13±2.63 for "Personal Development" (Table 3).

When the responses of nursing students to the items within the subscales of the attitude scale were examined, it was found that students displayed more positive attitudes in various domains. Within the "Beliefs and Expectations Towards CP" subscale, the item "I cannot imagine nursing education without clinical practice" received one of the highest mean scores (4.35±0.85), indicating a strong agreement. Similarly, in the "Positive Attitude Towards CP" subscale, the item "I believe that clinical practice makes me love nursing" had a relatively high mean (3.72±0.96). In the "Personal Development" subscale, the item "Clinical practice makes me feel ready for the profession" also received strong agreement (4.11±0.82), showing that students perceive clinical practice as beneficial for their professional readiness. Notably, the highest mean score within the "Negative Attitude Towards CP" subscale, which consists of reverse-scored items, was observed for the statement "I wish there were no clinical practice lessons at all" (4.15±0.97). Since this item is reverse-coded, high agreement indicates disagreement with the negative statement, and therefore a positive attitude. This highlights that students largely rejected negative sentiments towards CP.

Differences in Clinical Practice Attitude Scores by Nursing Students' Sociodemographic and Academic Characteristics

A two-way ANOVA was conducted to examine the main effects of nursing students' sociodemographic and academic characteristics on their overall attitudes toward CP. The results revealed that nursing students who chose the nursing profession willingly ($p < 0.001$), attended orientation training before CP ($p=0.002$), found weekly CP hours sufficient ($p < 0.001$), reported receiving sufficient support and help during the CP ($p= 0.033$), did not experience difficulties during the CP ($p= 0.012$), and found the physical characteristics of CP areas sufficient ($p= 0.006$) had significantly higher overall attitude scores (Table 4).

Predictors of Attitudes of Nursing students' Towards CP

A multiple linear regression model was constructed using the independent variables that were found to be statistically significant in the univariate analyses, in order to identify predictors of nursing students' overall attitudes toward CP. The model was statistically significant ($F=13.398$; $p<0.001$), explaining 20% of the variance in attitudes. In this model,

the standardized beta coefficients (β) were used to interpret the relative strength of each predictor. The most influential predictor was perceiving the weekly CP period as sufficient (β= 0.314; p < 0.001), followed by willingly choosing the nursing profession (β= 0.203; p < 0.001), attending orientation training before CP (β= 0.148; p= 0.001), not experiencing difficulties during clinical practice (β= 0.115; p= 0.012), finding the physical characteristics of CP areas sufficient (β= 0.115; p=0.011), and receiving adequate support and assistance (β= 0.097; p= 0.034) (Table 5).

Discussion

To the best of our knowledge, this study is one of the earliest studies to examine Turkish nursing students' attitudes toward CP using a valid and reliable measurement tool specifically developed for this purpose, while also identifying key influencing factors. Given that clinical training constitutes a substantial portion of nursing education, students' attitudes toward CP play a critical role in the success of their clinical learning experiences. These attitudes influence not only the integration of theory into practice but also students' confidence, engagement, and long-term professional development. The ability to effectively translate nursing theories into CP is essential for delivering safe, high quality patient care. This highlights the importance of clinical learning environments that support the personal and professional development of nursing students. While previous studies (Cant et al., 2021; Fathi & Ibrahim, 2023; Munangatire et al., 2023) have highlighted the importance of clinical learning environments, there is a need to better understand the factors that shape students' perceptions and experiences during CP, particularly in diverse cultural and educational contexts. The findings of this study are expected to guide educational planning and support strategies to enhance clinical learning outcomes in nursing education.

In this current study, 27.3% of nursing students reported facing difficulties during CP. Various studies have highlighted similar challenges faced by nursing students, including concerns about patient safety, insufficient support, and communication problems within the clinical environment (Kol & İnce, 2018; Mbakaya et al., 2020; Nabolsi et al., 2012; Serçekuş & Başkale, 2016). Our findings indicate that Turkish nursing students particularly experienced difficulties related to the risk of harming patients and ineffective communication with clinical staff. These challenges, by increasing anxiety and reducing students' sense of confidence and professional belonging, may contribute to the development of negative attitudes toward CP. Moreover, in the regression analysis, not experiencing difficulties during CP was found to be a significant predictor of more positive attitudes. Previous research has also underscored the necessity of enhancing nursing students' competencies in ensuring patient safety (Bianchi et al., 2016; Gradišnik et al., 2024; Suliman, 2019). Without adequate supervision and support, students may be more likely to make errors that jeopardize both their learning and patient outcomes. Given the complex structure of CP education in Türkiye, both nursing educators and clinical nurses must take proactive steps to ensure students feel safe, supported, and integrated into the clinical team. These findings highlight the need for structured support mechanisms in clinical settings, including adequate instructor supervision, clear role expectations, and communication training, to prevent negative experiences that may adversely impact student learning and attitudes toward CP. Considering the complex nature of clinical education in Türkiye, it is essential that not only nurse educators but also clinical nurses remain aware of students' concerns regarding patient safety. Furthermore, this underscores the shared responsibility of nursing education institutions and healthcare facilities in ensuring patient safety one of the common goals of high quality healthcare delivery.

In this study, another major source of difficulty during CP was communication problems with members of the CP team. This finding suggests that interpersonal interactions within the clinical environment may play a contributing role in shaping nursing students' attitudes toward CP. Our regression model also supports this interpretation, showing that not encountering difficulties during CP, including those related to communication, was a significant predictor of more positive attitudes toward CP. Previous studies have shown that communication-related conflicts negatively impact the effectiveness of clinical teaching, student satisfaction, and overall perception of CP (Papastavrou et al., 2016; Rodríguez-García et al., 2021). The behavior and approach of clinical educators, nurses, and other team members can serve as positive or negative role models for students. Positive communication experiences have been associated with more favorable attitudes toward CP (Aragaw et al., 2019; Nabolsi et al., 2012), whereas feelings of exclusion from the team can result in negative perceptions and the need for support (Kalyani et al., 2019). Similar to international literature, some studies conducted with Turkish nursing students have emphasized the effectiveness of positive communication, particularly with nurses in the CP team, on student success and learning experience (Arkan et al., 2018; Serçekuş & Başkale, 2016). This highlights the necessity and importance of interventions aimed at helping the CP teams in hospital environments understand and fulfill their responsibilities in nursing student education, thereby enhancing the effectiveness of CP education.

This study found that Turkish nursing students demonstrated a positive attitude towards CP. In contrast to our findings, a study conducted in Northwest Ethiopia reported that more than half of nursing and midwifery students had a negative attitude towards CP (Aragaw et al., 2019). In a different study, the arrogant attitudes and actions of hospital staff, along with the negative emotions of nursing students who had to observe without being assigned any practical tasks during CP, were identified as significant determinants

of negative attitudes towards CP (Ha, 2015). The positive attitude of nursing students towards CP in this study may be associated with the presence of certain known conditions that support individual characteristics and the quality of CP education. In Türkiye, many nursing programs implement structured orientation sessions, emphasize faculty accessibility, and promote supportive clinical mentorship, which may help students feel more prepared and confident in clinical settings. In our study, factors such as participating in orientation programs, receiving adequate support, not experiencing difficulties, and having sufficient clinical time were associated with more positive attitudes. These enabling conditions are likely to influence how students perceive and engage with the clinical environment. To the best of our knowledge, no studies have investigated the factors influencing nursing students' attitudes toward CP in Türkiye. However, some studies evaluating students' views, expectations, and satisfaction with the CP and learning environment support this notion. In their study, Ergezen et al. (2022) found that over half of nursing students were satisfied with the clinical learning environment, highlighting factors such as professional perspective, application of theory into practice, and satisfaction with clinical experience as positive influencers. Kol and İnce (2018) observed high satisfaction among nursing students with CP, attributing it to faculty competence, accessibility, and communication openness in theoretical and clinical skills. However, another study revealed that while students recognized the value of CP for learning, issues such as inadequate resources and physical environment problems hindered effective theoretical-practical integration, leading to dissatisfaction among many students (Serçekuş & Başkale, 2016). These findings highlight the importance of making nursing students' CP experiences more positive in order to improve nursing students' attitudes towards CP.

Considering the subscale scores of the Attitude Scale towards CP, the highest mean score was obtained from the "Beliefs and Expectations Regarding CP" subscale. This finding indicates that students perceive CP as a valuable tool for their professional and academic development. In contrast, the Positive Attitude Towards CP subscale, which reflects students' emotional engagement, motivation, and willingness to participate, had a relatively lower mean score. This suggests that while students conceptually value CP, their emotional experiences during practice may be influenced by contextual factors such as the quality of the clinical environment, perceived support systems, or stress levels, as supported by previous research (Aragaw et al., 2019; Ha, 2015; Papastavrou et al., 2016; Rodríguez-García et al., 2021). The scores related to the "Personal Development" subscale demonstrate that students hold positive attitudes regarding the contribution of CP to enhancing their self-confidence, preparedness for the profession, and active participation in nursing skills. Meanwhile, the high scores obtained from the Negative Attitude subscale, which includes reverse-coded items, indicate that students' negative feelings toward clinical practice were at a low level. The average score in this subscale supports the interpretation that nursing students generally do not hold negative attitudes toward CP and view clinical education as valuable. These findings are in line with the limited number of studies that have examined Turkish nursing students' views on CP, including recent national studies (Ergezen et al., 2022; Kınas et al., 2025; Kol & İnce, 2018; Kudubeş et al., 2024).

Based on our findings, the perceived sufficiency of the duration of CP education emerged as the most significant variable influencing the attitude scores of nursing students. This finding indicates that the duration allocated for CPs in the nursing curriculum can significantly impact nursing students' attitudes toward CP. Similarly, Ha (2015) emphasized that adequate CP education supported by instructor guidance and supervision, contributing to a better understanding of nursing activities, reinforces and strengthens a positive attitude toward CP. Ugwu et al. (2023) emphasized that deficiencies in time management, potentially impeding students from acquiring ample experience in CP procedures, could widen the disparity between theoretical knowledge and practical skills, hindering the comprehensive development of students' clinical abilities. Studies have consistently underscored the importance of well-designed and organized CP experiences that provide nursing students with a positive learning atmosphere, fostering the enhancement of clinical nursing skills and professional competence among their expectations from CP (Bisholt et al. 2014; Cant et al., 2021; Flott & Linden 2016; Xiang et al., 2023). These findings also draw attention to the necessity of placing greater importance on CP hours during the planning and implementation stages of nursing education programs to strengthen students' clinical experiences and efforts to enhance their clinical skills.

In this study, another crucial variable predicting nursing students' attitudes towards CP is the students' deliberate choice of the nursing profession. In studies involving Turkish nursing students, it has been reported that students who intentionally choose the nursing profession and have prior knowledge of it demonstrate higher levels of professional satisfaction, evaluate the clinical learning environment more positively, and this is noted to positively influence their adaptation to and success in CP (Arkan et al., 2018; Ergezen et al., 2022). These findings suggest that students who shape their professional development in a field they deliberately choose may embrace the CP process more effectively and have a more positive attitude as a result of their professional motivation. Moreover, the findings emphasize the necessity of improving students' professional knowledge and perceptions as a means of enhancing their attitudes toward CP. Providing special support and motivation for students who willingly choose the nursing department, coupled with initiatives to enhance nursing students' professional perceptions and motivations, could significantly contribute to cultivating a more successful and passionate student body in nursing education.

Our findings underscore the significance of receiving orientation training before CP, which influences nursing students' attitudes towards CP. Similarly, Aragaw et al. (2019) found that students who are well-prepared for CP are twice as likely to have a positive attitude towards it. In Türkiye, students who received explanations from faculty members before CP perceived the clinical learning environment more positively (Ergezen et al., 2022). Orientation programs have also been shown to reduce stress and anxiety associated with CP, especially for students new to clinical experiences (Sparacino & Diggle, 2017). This highlights the importance of adequately preparing students for CP, providing information, clarifying expectations, and facilitating their adjustment to the clinical environment to enhance CP education success. Literature suggests that holding a meeting before CP involving nurse educators, students, and clinical mentors can contribute to students' adaptation to CP and assessment processes and help them learn how to overcome their weaknesses (Almalkawi et al., 2018; Helminen et al., 2016). As part of Turkish higher education quality and accreditation standards, orientation training is conducted to improve students' adaptation to CP. This training informs them about CP education goals, student and instructor responsibilities, clinical settings, working hours, service protocols, challenges, risk management, infection prevention, isolation methods, and waste management.

It is well established that a well-designed clinical learning environment, along with the quality of supervision and support provided to students, plays a significant role in shaping nursing students' satisfaction with both the clinical setting and their learning process (Cant et al., 2021; Rodríguez-García et al., 2021). In this study, findings revealed that nursing students' attitudes toward CP were significantly influenced by their perceptions regarding the adequacy of the physical environment and available facilities, access to necessary support, and ability to cope with challenges encountered during clinical placements. Consistent with our findings, Aragaw et al. (2019) reported that nursing students placed in well-equipped hospitals and receiving adequate clinical mentorship were more likely to demonstrate positive attitudes toward CP. Furthermore, the quality of the clinical learning atmosphere and supervision has been found to be positively associated with student satisfaction (Rodríguez-García et al., 2021). Similar studies in Türkiye have reported that feedback and support provided by nursing educators contribute to the learning and positive CP experiences of nursing students (Arkan et al., 2018; Kol & İnce, 2018). On the other hand, the presence of barriers such as limited resources, inadequate equipment, or deficiencies in the physical environment, especially when compounded by a lack of supervision and support, has been associated with negative learning experiences and interruptions in students' achievement of clinical objectives (Kalyani et al., 2019; Ugwu et al., 2023). A study conducted with Turkish nursing students revealed that poor physical conditions within clinical settings hindered students' ability to apply theoretical knowledge and undermined their sense of belonging to the clinical team (Serçekuş & Başkale, 2016). Other studies have further emphasized the importance of adequate materials and equipment, appropriate physical spaces tailored to student needs, and consistent supervision from both clinical nurses and educators as essential elements in meeting students' expectations from CP (Bisholt et al., 2014; Fathi & Ibrahim, 2023; Munangatire et al., 2023).

Although the regression model in this study identified several significant predictors, it explained only 20% of the variance in nursing students' attitudes toward CP. This indicates that other important factors may also influence students' attitudes. Variables not included in the scope of this study, such as personality traits, coping mechanisms, clinical stress levels, learning styles, and student-instructor-mentor interactions may also play a role in shaping these attitudes. Indeed, previous studies have shown that the effectiveness of clinical education is not only determined by the environment and instructional processes but is also closely related to individual characteristics such as students' motivation, self-confidence, anxiety levels, learning styles, and expectations (Asadi et al., 2023; Helminen et al., 2016; Ugwu et al., 2023). Future research using longitudinal and mixed-method designs may offer a more comprehensive understanding of the factors influencing nursing students' attitudes toward CP.

Limitations

This study is one of the pioneering efforts to examine Turkish nursing students' overall attitudes toward CP and the factors influencing those attitudes, using a psychometrically validated scale. Firstly, the research was conducted with nursing students studying at a state and a private university located in two regions of Türkiye. Therefore, the results obtained from this study can only be generalized to this specific sample. Additionally, the cross-sectional design of the study, without a longitudinal assessment of students and reliance on self-reported data from students, may have limited the ability to draw valid conclusions from the research. Another limitation of this study is that, although several significant predictors were identified, the regression model explained only 20% of the variance in attitude scores. These limitations may constrain the generalizability of the research results. However, despite these methodological constraints, the study offers valuable insights into the attitudes and influencing factors related to CP, especially as it utilizes a psychometrically validated instrument and includes a sizable sample across two distinct institutional settings. The findings align with international literature and can provide practical guidance for nursing educators and curriculum planners aiming to improve clinical training. Therefore, institutional managers, nursing educators, and hospital administrators aiming to improve nursing students' attitudes towards CP and the

quality of clinical education can benefit from the results of this study in enhancing specific dimensions of current educational curricula, planning CP education, and utilizing the preparation process to strengthen the integration of theory and practice in nursing education.

Conclusion

This study examined the attitudes of Turkish nursing students towards clinical practices and identified the factors shaping these attitudes within the context of their clinical learning experiences. The findings indicate that students generally hold positive attitudes towards clinical practice, recognizing it as a valuable opportunity for applying theoretical knowledge, enhancing professional identity, and improving personal and social competencies. However, the quality of this experience is strongly influenced by how clinical education is planned, supported, and implemented. Key factors associated with more favorable attitudes included the adequate scheduling of clinical practice hours, effective orientation and preparation before placements, supportive supervision, and appropriate physical conditions in clinical environments. Additionally, students who reported receiving sufficient support and who had voluntarily chosen the nursing profession demonstrated more positive perceptions of clinical practice.

Based on the results of the study, we recommend interventions aimed at improving attitudes towards clinical practices and ensuring that nursing students experience this process more positively. These interventions should primarily focus on enhancing hospital school collaboration through structured and sustainable mechanisms, such as formal cooperation protocols, regular coordination meetings, and integrated feedback processes involving students, educators, and clinical staff. Additionally, we suggest adjustments in nursing education curricula to ensure that clinical practice hours are adequately planned and distributed, allowing students to effectively transform theoretical knowledge into practical competencies. Supporting students' professional motivation, planning educational interventions to facilitate their adaptation to the clinical practice environment, and providing consistent mentorship and guidance based on trust and open communication are also crucial. Furthermore, establishing clinical practice settings that are physically adequate, psychologically supportive, and tailored to students' learning needs is essential. These recommendations can serve as a foundational framework for developing more effective, student-centered strategies in nursing education regarding clinical practices. In addition, we recommend that future studies adopt longitudinal or mixed-method approaches to explore other unexplored factors affecting students' clinical attitudes.

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Appendix: Tables

Table 1
Sociodemographic and Academic Characteristics of the Nursing Students (N=414)

Characteristics	Categories	n	%
Gender	Female	338	81.6
	Male	76	18.4
Year of education	Second	142	34.3
	Third	164	39.6
	Fourth	108	26.1
Type of High School Graduated from	Health Vocational High School	44	10.6
	Regular High School	29	7.0
	Anatolian High School	302	72.9
	Science High School	39	9.4
Did you choose the nursing profession willingly?	Yes	234	56.5
	No	180	43.5
		Mean±SD	
Age (years)		21.23±1.57	
Abbreviations: SD; Standard Deviation			

Table 2
Experiences of Nursing Students Regarding Clinical Practices (N=414)

Characteristics	Categories	n	%
The unit where clinical practice was conducted	Internal clinics	151	36.5
	Surgical clinics	110	26.6
	Emergency	31	7.5
	Operating room	28	6.8
	Intensive care units	94	22.7
Number of days in clinical practice	One day per week	121	29.2
	Two days per week	177	42.8
	Four days per week	116	28.0
Did you participate in orientation training prior to clinical practice?	Yes	346	83.6
	No	68	16.4
Do you find the weekly clinical practice period sufficient?	Yes	254	61.4
	No	160	38.6
Do you find the physical characteristics of clinical practice areas sufficient?	Yes	276	66.7
	No	138	33.3
Do you have difficulties during your clinical practice?	Yes	113	27.3
	No	301	72.7
Source of difficulties in clinical practice*	Concerns associated with the risk of harming the patient	89	25.2
	Communication problems with the clinical practice team	72	20.3
	Inadequate instructor per student	62	17.5
	Lack of self-confidence	56	15.8
	Inadequate clinical nurse per student	46	13.0
	Physical characteristics of clinical practice areas	28	7.9
Do you receive adequate support and assistance during your clinical practice?	Yes	378	91.3
	No	36	8.7
Source of support and assistance during your clinical practice (n=378)*	Clinical nurse	311	43.3
	Lecturer	179	24.9
	Classmates	160	22.3
	Senior students	68	9.5

*Multiple answers were given.

Table 3
Distribution of Nursing Students' Attitude Scores Towards Clinical Practice (N=414)

Subscales	Number of items	Range	Min	Max	Total score M (SD)	
Beliefs and Expectations Regarding Clinical Practices	8	8-40	8	40	33.08±5.10	
Items	I strongly disagree	I disagree	Neither agree nor disagree	I agree	I strongly agree	Item score M (SD)
	n (%)	n (%)	n (%)	n (%)	n (%)	
Clinical practices allow me to see what I need to know about the profession.	6 (1.4)	11 (2.7)	37 (8.9)	219 (52.9)	141 (34.1)	4.15 (0.80)
Clinical practice provides an opportunity to apply theoretical knowledge.	8 (1.9)	11 (2.7)	51(12.3)	232 (56.0)	112 (27.1)	4.04 (0.82)
Clinical practice is an opportunity for self-improvement.	5 (1.2)	4 (1.0)	23 (5.6)	206 (49.8)	176 (42.5)	4.31 (0.72)
Clinical practice supports my professional development.	6 (1.4)	6 (1.4)	18 (4.3)	223 (53.9)	161 (38.9)	4.27 (0.74)
Clinical practice supports my social development.	7 (1.7)	10 (2.4)	41 (9.9)	212 (51.2)	144 (34.8)	4.15 (0.82)
I cannot imagine nursing education without clinical practice.	5 (1.2)	14 (3.4)	32 (7.7)	142 (34.3)	221 (53.4)	4.35 (0.85)
Clinical practice increases my interest in specialized courses.	8 (1.9)	28 (6.8)	95 (22.9)	175 (42.3)	108 (26.1)	3.84 (0.95)
Clinical practice enhances my problem-solving skills.	6 (1.4)	15 (3.6)	70 (16.9)	220 (53.1)	103 (24.9)	3.96 (0.83)
Positive Attitude Towards Clinical Practices	**Number of items**	**Range**	**Min**	**Max**	**Total score M (SD)**	
	7	7-35	7	35	23.55±5.98	
Items	I strongly disagree	I disagree	Neither agree nor disagree	I agree	I strongly agree	Item score M (SD)
	n (%)	n (%)	n (%)	n (%)	n (%)	
I go to clinical practice with excitement every internship day.	27 (6.5)	68 (16.4)	159 (38.4)	105 (25.4)	55 (13.3)	3.22 (1.07)
I wish the number of days for clinical practice could be increased.	58 (14.0)	80 (19.3)	108 (26.1)	106 (25.6)	62 (15.0)	3.08 (1.26)
I eagerly look forward to going to clinical practice.	28 (6.8)	74 (17.9)	159 (38.4)	103 (24.9)	50 (12.1)	3.18 (1.07)
I lose track of time during clinical practice.	25 (6.0)	75 (18.1)	123 (29.7)	132 (31.9)	59 (14.3)	3.30 (1.10)
Clinical practice is very enjoyable for me.	19 (4.6)	47 (11.4)	144 (34.8)	150 (36.2)	54 (13.0)	3.42 (1.00)
I believe that clinical practice makes me love nursing.	12 (2.9)	28 (6.8)	111 (26.8)	176 (42.5)	87 (21.0)	3.72 (0.96)
Going to clinical practice makes me happy.	15 (3.6)	28 (6.8)	120 (29.0)	184 (44.4)	67 (16.2)	3.63 (0.95)

Negative Attitude Towards Clinical Practices	Number of items	Range	Min	Max	Total score M (SD)	
	7	7-35	7	35	27.72±5.96	
Items	I strongly disagree	I disagree	Neither agree nor disagree	I agree	I strongly agree	Item score M(SD)
	n (%)	n (%)	n (%)	n (%)	n (%)	
Going to clinical practice is like torture for me.*	109 (26.3)	166 (40.1)	84 (20.3)	38 (9.2)	17 (4.1)	3.75 (1.07)
I cannot stand clinical practice.*	136 (32.9)	173 (41.8)	64 (15.5)	30 (7.2)	11 (2.7)	3.95 (1.00)
If I had the opportunity, I would never go to clinical practice.*	160 (38.6)	165 (39.9)	53 (12.8)	24 (5.8)	12 (2.9)	4.06 (1.00)
I wish there were no clinical practice lessons at all.*	182 (44.0)	154 (37.2)	47 (11.4)	21 (5.1)	10 (2.4)	4.15 (0.97)
If it weren't mandatory, I wouldn't go to clinical practice.*	135 (32.6)	170 (41.1)	52 (12.6)	32 (7.7)	25 (6.0)	3.86 (1.13)
I don't understand people who love clinical practice.*	125 (30.2)	175 (42.3)	74 (17.9)	26 (6.3)	14 (3.4)	3.90 (1.01)
I do not want to participate in the clinical practice of the course.*	151 (36.5)	181 (43.7)	46 (11.1)	22 (5.3)	14 (3.4)	4.05 (0.99)
Personal Development	**Number of items**	**Range**	**Min**	**Max**	**Total score M (SD)**	
	4	4-20	6	20	16.13±2.63	
Items	I strongly disagree	I disagree	Neither agree nor disagree	I agree	I strongly agree	Item score M(SD)
	n (%)	n (%)	n (%)	n (%)	n (%)	
Clinical practice boosts my self-confidence.	2 (0.5)	15 (3.6)	69 (16.7)	220 (53.1)	108 (26.1)	4.01 (0.78)
I eagerly wait for the procedures to be performed in clinical practice.	9 (2.2)	17 (4.1)	67 (16.2)	227 (54.8)	94 (22.7)	3.92 (0.86)
Clinical practice makes me feel ready for the profession.	7 (1.7)	11 (2.7)	47 (11.4)	214 (51.7)	135 (32.6)	4.11 (0.82)
I willingly participate in clinical practices.	5 (1.2)	16 (3.9)	41 (9.9)	224 (54.1)	128 (30.9)	4.10 (0.81)
Overall attitude score	**Number of items**	**Range**	**Min**	**Max**	**Total score M (SD)**	
	26	26-130	46	130	100.48±16.31	

Abbreviations: M; Mean, SD; Standard Deviation, *reverse scored negative statements

Table 4
Differences in Clinical Practice Attitude Scores by Nursing Students' Sociodemographic and Academic Characteristics (N=414)

	Type III Sum of Squares	df	Mean Square	F	p*	Partial Eta Squared (ηp2)
Gender	148.209	1	148.209	0.697	0.404	0.002
Year of education	451.699	2	225.849	1.062	0.347	0.005
Willingly chose the nursing profession	3860.265	1	3860.265	18.145	<0.001	0.044
Participating in orientation training prior to clinical practice	1980.160	1	1980.160	9.308	0.002	0.023
The unit where clinical practice was conducted	1576.715	4	394.179	1.853	0.118	0.018
Number of days in clinical practice	755.768	2	377.884	1.776	0.171	0.009
Finding the weekly clinical practice period sufficient	8201.632	1	8201.632	38.552	<0.001	0.088
Finding the physical characteristics of clinical practice areas sufficient	1635.105	1	1635.105	7.686	0.006	0.019
Receiving adequate support and assistance during clinical practice	971.569	1	971.569	4.567	0.033	0.011
Encountering difficulties during clinical practice	1368.992	1	1368.992	6.435	0.012	0.016
Error	84672.346	398	212.745			
Total	**4289803.000**	**414**				

R Squared = 0.230 (Adjusted R Squared = 0.201) *p<0.05 Two-way ANOVA.

Table 5
Predictors of Attitudes of The Nursing Students Towards Clinical Practice (N=414)

Enter Method	B	95% Confidence Interval for B		SE	β	t	p	Zero	Partial	Part	VIF
		Lower	Upper								
(Constant)	88.035	81.488	94.582	3.330		26.433	<0.001				
Willingly chose the nursing profession											
Reference [No]											
Yes	6.679	3.785	9.573	1.472	0.203	4.537	<0.001	0.245	0.220	0.200	1.028
Participating in orientation training prior to clinical practice											
Reference [No]											
Yes	6.529	2.592	10.466	2.003	0.148	3.260	0.001	0.198	0.160	0.144	1.062
Finding the weekly clinical practice period sufficient											
Reference [No]											
Yes	10.185	6.953	13.417	1.644	0.304	6.195	<0.001	0.295	0.297	0.273	1.246
Finding the physical characteristics of clinical practice areas sufficient											
Reference [No]											
Yes	3.983	0.905	7.061	1.566	0.115	2.544	0.011	0.129	0.125	0.112	1.051
Receive adequate support and assistance during clinical practice											
Reference [No]											
Yes	5.599	0.414	10.783	2.637	0.097	2.123	0.034	0.123	0.105	0.094	1.065
Encountering difficulties during clinical practice											
Reference [Yes]											
No	4.215	0.931	7.500	1.671	0.115	2.523	0.012	0.160	0.124	0.111	1.069

Abbreviation: VIF; variance inflation index; B= Unstandardized beta coefficients; β= Standardized beta coefficients; Significant at the $p < 0.05$ level
Model Summary: F=13.398; p<0.001; R= 0.229; Adj.R^2= 0.200; SEE= 14.594; Durbin-Watson= 1.862