



## NURSING STUDENTS' ATTITUDES TOWARD IMMIGRANT INDIVIDUALS AND CULTURAL INTELLIGENCE: A COMPARATIVE STUDY

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**Abstract:** This study aims to evaluate the impact of clinical practice in migrant health centers on nursing students' attitudes towards migrants and their cultural intelligence. The research was conducted using a causal-comparative design with 52 students who practiced in migrant health centers and 52 students who practiced in different units during the 2022-2023 academic year. Data were collected using the Negative Attitudes Towards Migrants Scale, the Cultural Intelligence Scale, and a socio-demographic information form. Data were analyzed using SPSS 25.0, with normality and variance assumptions checked; t-tests or ANOVA were applied as appropriate. Students who practiced in migrant health centers scored significantly lower on the Negative Attitudes towards Migrants Scale ( $P=0.023$ ) and higher on the Cultural Intelligence Scale total and sub-dimensions (cognitive, motivational, and behavioral) ( $P=0.002$ ) compared to those practicing in other units. However, no significant difference was found in the meta-cognitive sub-dimension ( $P=0.142$ ). While socio-demographic variables did not generally show a significant effect, prior experience with providing care to migrants and receiving cultural care training positively influenced attitudes and cultural intelligence. The study demonstrates that clinical practice in migrant health centers improves nursing students' attitudes towards migrants and enhances their cultural intelligence. These findings highlight the importance of integrating clinical practice and cultural training into nursing education.

**Keywords:** Nursing students, Cultural intelligence, Migrant health, Attitudes, Clinical practice, Cultural competence

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### 1. Introduction

With the acceleration of globalization, migration movements have significantly increased, leading to substantial changes in the demographic composition of societies (World Health Organization, 2018). Consequently, healthcare professionals—particularly nurses—are increasingly encountering culturally and linguistically diverse populations (Ersin and Bahar, 2014). Migrants often carry their unique cultural values and health-related beliefs into the healthcare systems of host countries (Suphanchaimat et al., 2015). Therefore, enhancing nurses' cultural competence and fostering positive attitudes toward migrant populations is essential to ensure equitable and effective healthcare delivery.

Nurses' attitudes toward migrant individuals play a critical role in shaping the quality and accessibility of healthcare delivery. Positive attitudes not only facilitate migrants' access to healthcare services but also enable them to receive more effective and beneficial care (Ang and Van Dyne, 2015). Such attitudes foster trust between

patients and healthcare professionals, minimize communication barriers, and contribute to the more effective management of treatment processes. In contrast, negative attitudes and implicit biases may result in compromised care delivery, decreased patient adherence, and poor health outcomes (Richard-Eaglin, 2021; Atalla and Elseesy, 2023; Webb et al., 2024). Accordingly, promoting culturally sensitive and inclusive attitudes among nurses is essential for delivering equitable and high-quality healthcare services.

Cultural intelligence is defined as the ability to communicate effectively with individuals from diverse cultural backgrounds, to comprehend cultural differences, and to manage these differences appropriately (Özkol Kılınç and Öztürk, 2020). Within the context of nursing, cultural intelligence enables healthcare professionals to identify the specific health needs of migrant populations, to provide culturally competent care, and to reduce potential communication barriers during the care process (Majda et al., 2021). Nurses with a high level of cultural intelligence are



capable of empathizing with culturally diverse individuals, gaining a deeper understanding of their health-related concerns and expectations, and delivering responsive, culturally sensitive nursing interventions (Repo et al., 2017; Altawil and Turan, 2023).

During their professional education, nursing students frequently encounter individuals from diverse cultural backgrounds and engage in various forms of intercultural interaction. These experiences play a crucial role in shaping their attitudes toward migrant populations and fostering the development of cultural intelligence. (Guo et al., 2022; Bahari et al., 2024). Face-to-face interactions with migrant populations are particularly recognized as a critical component in the development of cultural competence. Clinical experiences that involve providing care to culturally diverse migrants have the potential to reduce pre-existing biases, enhance empathy, and cultivate a more inclusive and culturally responsive perspective among nursing students. (Kwame and Petrucka, 2021).

This study aims to investigate the role of interpersonal contact in shaping nursing students' attitudes toward migrant individuals and their levels of cultural intelligence. Employing a comparative research design, the study will assess and contrast the attitudes and cultural intelligence of students who have and have not participated in clinical placements within migrant health centers, thereby identifying the potential influence of such experiential learning. Specifically, it seeks to answer the following research questions: (1) Do the attitudes of nursing students who complete their clinical practice in migrant health centers differ from those of students practicing in other units? (2) Do the cultural intelligence levels of nursing students who complete their clinical practice in migrant health centers differ from those of students practicing in other units? The findings are anticipated to offer valuable implications for nursing education curricula and inform strategies to foster greater cultural sensitivity among future healthcare professionals.

## 2. Material and Methods

### 2.1. Study Design

In this study, the causal-comparative method, a type of quantitative research design, was employed. Causal-comparative research aims to identify the causes of pre-existing or emerging differences between groups or individuals (Gay and Airasian, 2000). The study group consisted of 52 nursing students who completed their clinical practice for the course "Diseases and Nursing Care III" at a Migrant Health Center (MHC) during the 2023–2024 academic year and voluntarily agreed to participate. The comparison group included another 52 nursing students who completed the same course's clinical practice in a different healthcare setting outside the MHC and were selected via simple random sampling (names drawn randomly from a bag). All participants were enrolled in the nursing department of a university

located in the Aegean region of Türkiye. Although a formal sample size calculation was not conducted, the study group included all 52 students who voluntarily completed their clinical practice at the MHC, and an equal number of students were selected for the comparison group for the purposes of comparative analyses. The groups were designed to be comparable, and after assignment, demographic and academic variables (age, gender, academic year, prior experience with migrants) were assessed to ensure baseline similarity. Data were collected by the researchers after the completion of the clinical placements during the Spring semester of the 2023–2024 academic year, using a single-session survey administered to all participating students.

### 2.3. Data Collection Tools

To gather data, three instruments were used: the "Socio-Demographic Data Form" to determine participants' demographic information, the "Negative Attitudes Toward Migrants Scale" to measure attitudes toward migrants, and the "Cultural Intelligence Scale" to assess cultural intelligence levels.

#### 2.3.1. Socio-demographic data form

Developed by the researchers, this form includes questions about the participants' gender, place of residence, family type, prior experience in providing care to migrants, the presence of migrant friends, and whether they received training on cultural care.

#### 2.3.2. The Negative attitudes towards migrants scale (ATMS)

The Negative Attitudes Toward Migrants Scale (NATMS), developed by Varela et al. (2013), was adapted into Turkish, and its validity and reliability were tested by Günay et al. (2019). In this 5-point Likert-type scale, participants evaluate each item by selecting one of the following options: "Strongly Disagree (1)", "Disagree (2)", "Neutral (3)", "Agree (4)", or "Strongly Agree (5)". The scale does not include a cutoff point, and scores range from 12 to 60, with higher scores indicating stronger negative attitudes toward migrants. In the Turkish validity and reliability study, the Cronbach's alpha internal consistency coefficient was calculated as 0.85, while in this study, it was determined to be 0.81.

#### 2.3.3. The cultural intelligence scale (CIS)

The Cultural Intelligence Scale (CQS) developed by Ang et al. (2007) and adapted into Turkish by İlhan and Çetin (2014) was used to measure students' cultural intelligence levels. The scale consists of 20 items rated on a 7-point Likert scale (total score range: 20–140), with higher scores indicating higher cultural intelligence. It includes four sub-dimensions: Meta-cognition (4 items), assessing awareness and regulation of one's cultural knowledge; Cognition (6 items), measuring knowledge of different cultures; Motivation (5 items), evaluating interest and confidence in intercultural interactions; and Behavior (5 items), assessing the ability to demonstrate culturally appropriate actions. In the Turkish adaptation study, Cronbach's alpha was 0.85, while it was 0.89 in the current study.

## 2.4. Evaluation of the Data

The data obtained in the study were analyzed using SPSS (Statistical Package for the Social Sciences) for Windows 25.0. Descriptive statistics (number, percentage, min-max values, mean, and standard deviation) were used to summarize the data. The normality of the data distribution was assessed using the Shapiro-Wilk test and skewness-kurtosis values, and the homogeneity of variances was tested using Levene's test. For quantitative data with a normal distribution, independent samples t-tests were used to compare differences between two groups, and one-way ANOVA was used for comparisons involving more than two independent groups. Categorical variables (e.g., gender, family type, prior experience with migrants) were compared between groups using the chi-square test. Statistical significance was set at  $P < 0.05$  with a 95% confidence interval.

## 3. Results

When examining the socio-demographic characteristics of the students, 46.2% of those who completed their practicum at the Migrant Health Center (MHC) were female, 57.7% lived in a student dormitory, 76.9% belonged to a nuclear family, 17.3% had prior experience providing care to migrant individuals, 34.6% had a migrant friend, and 32.7% had received training on cultural care. Among students who completed their practicum in other units, 42.3% were female, 53.8% lived in a student dormitory, 76.9% belonged to a nuclear family, 17.3% had prior care experience, 30.8% had a migrant friend, and 23.1% had received training on cultural care (Table 1). No significant differences were found between the groups for any socio-demographic variables (all  $P > 0.05$ ), confirming baseline comparability.

**Table 1.** Distribution of participants' socio-demographic characteristics by clinical placement group

| Variables                                                    |                    | Students Who Performed Practicum at MHC |      | Students Who Did Not Perform Practicum at MHC |      | X <sup>2</sup> | P    |
|--------------------------------------------------------------|--------------------|-----------------------------------------|------|-----------------------------------------------|------|----------------|------|
|                                                              |                    | n                                       | %    | n                                             | %    |                |      |
| Gender                                                       | Female             | 24                                      | 46.2 | 22                                            | 42.3 | 0.15           | 0.59 |
|                                                              | Male               | 28                                      | 53.8 | 30                                            | 57.7 |                |      |
| Place of Residence                                           | Living with Family | 10                                      | 19.2 | 7                                             | 13.5 | 1.46           | 0.48 |
|                                                              | Student Dormitory  | 30                                      | 57.7 | 28                                            | 53.8 |                |      |
|                                                              | Student House      | 12                                      | 23.1 | 17                                            | 32.7 |                |      |
| Family Type                                                  | Nuclear Family     | 40                                      | 76.9 | 40                                            | 76.9 | 0.65           | 0.82 |
|                                                              | Extended Family    | 12                                      | 23.1 | 12                                            | 23.1 |                |      |
| Prior Experience in Providing Care to Migrants               | Yes                | 9                                       | 17.3 | 9                                             | 17.3 | 0.46           | 0.62 |
|                                                              | No                 | 43                                      | 82.7 | 43                                            | 82.7 |                |      |
| Having Migrant Friends                                       | Yes                | 18                                      | 34.6 | 16                                            | 30.8 | 0.67           | 0.83 |
|                                                              | No                 | 34                                      | 65.4 | 36                                            | 69.2 |                |      |
| Receiving Training on Cultural Care (Outside the Curriculum) | Yes                | 17                                      | 32.7 | 12                                            | 23.1 | 0.27           | 0.38 |
|                                                              | No                 | 35                                      | 67.3 | 40                                            | 76.9 |                |      |

MHC= migrant health center, n= participant number, X<sup>2</sup>= Chi-squared test.

The possible score ranges for NATMS and CQS, along with students' observed scores based on practicum at the Migrant Health Center (MHC), are presented in Table 2. NATMS scores range from 12 to 60, with students performing practicum scoring 16–46 and those not performing practicum scoring 19–43. The total CQS score ranges from 20 to 140, with scores of 33–84 for students performing practicum and 41–71 for those who did not. Observed scores for the CQS sub-dimensions were as follows: Cognitive 2–24 vs. 8–21, Motivational 7–20 vs. 6–19, Behavioral 7–22 vs. 7–18, and Meta-Cognitive 9–23 vs. 10–28, for students performing and not performing practicum, respectively (Table 2).

The NATMS and CQS scores of students who performed and did not perform practicum at the Migrant Health Center (MHC) were examined based on selected socio-demographic and experiential variables (Table 3). Gender, place of residence, family type, and having

migrant friends showed no significant differences in NATMS and CQS scores. Among students who performed practicum at the MHC, those who received extracurricular cultural care training had significantly lower NATMS scores ( $23.23 \pm 4.8$ ) than those without such training ( $26.62 \pm 5.51$ ;  $t = -2.167$ ,  $P = 0.035$ ). Similarly, students with prior experience providing care to migrants had significantly lower NATMS scores ( $22.31 \pm 6.09$ ) compared to those without prior experience ( $26.55 \pm 5.05$ ;  $t = -2.258$ ,  $P = 0.028$ ). These findings highlight the impact of both prior caregiving experience and additional training on students' attitudes toward migrants.

**Table 2.** Possible and observed min-max scores of NATMS and CQS (sub-dimensions) for students with and without MHC practicum

| Scale              | Possible Score Range (Min-Max) | Observed Min-Max Scores – Students Performing Practicum at MHC | Observed Min-Max Scores – Students Not Performing Practicum at MHC |
|--------------------|--------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------|
| NATMS              | 12-60                          | 16-46                                                          | 19-43                                                              |
| CQS Total          | 20-140                         | 33-84                                                          | 41-71                                                              |
| CQS-Cognitive      | 4-28                           | 2-24                                                           | 8-21                                                               |
| CQS-Motivational   | 5-35                           | 7-20                                                           | 6-19                                                               |
| CQS-Behavioral     | 5-35                           | 7-22                                                           | 7-18                                                               |
| CQS-Meta-Cognitive | 6-42                           | 9-23                                                           | 10-28                                                              |

NATMS= negative attitudes toward migrants scale, CQS= cultural intelligence scale total, MHC= migrant health center.

The comparison of Negative Attitudes Toward Migrants Scale (NATMS) and Cultural Intelligence Scale (CQS) scores between groups is presented in Table 4. According to the results, the NATMS scores of students who performed practicum at Migrant Health Centers ( $27.98 \pm 6.68$ ) were significantly lower than those who did not ( $30.92 \pm 5.97$ ) ( $P=0.023$ ). Additionally, the total CQS scores of students who performed practicum ( $61.36 \pm 10.89$ ) were significantly higher than those who did not ( $49.96 \pm 7.87$ ) ( $P=0.002$ ). When examining the sub-dimensions of the CQS, it was found that the scores for the Cognitive ( $P=0.043$ ), Motivational ( $P=0.031$ ), and Behavioral ( $P=0.011$ ) sub-dimensions were significantly higher among students who performed practicum. However, no significant difference was found between the groups in the Meta-Cognitive sub-dimension ( $P=0.142$ ) (Table-4).

**Table 3.** Comparison of NATMS and CQS scores by socio-demographic variables among students with and without practicum at the MHC

| Variables                                      |                    | With Practicum Experience at MHC |                      | Without Practicum Experience at MHC |                      |
|------------------------------------------------|--------------------|----------------------------------|----------------------|-------------------------------------|----------------------|
|                                                |                    | NATMS $\bar{X} \pm SD$           | CQS $\bar{X} \pm SD$ | NATMS $\bar{X} \pm SD$              | CQS $\bar{X} \pm SD$ |
| Gender                                         | Female             | 27.96 $\pm$ 5.32                 | 62.88 $\pm$ 10.76    | 30.42 $\pm$ 5.3                     | 50.52 $\pm$ 7.83     |
|                                                | Male               | 29.08 $\pm$ 8.17                 | 59.84 $\pm$ 11       | 30.93 $\pm$ 4.52                    | 49.5 $\pm$ 8.11      |
| Test                                           |                    | t: 0.547 P:0.587                 | t:1.006 P:0.319      | t: -0.251 P:0.803                   | t: 0.449 P:0.655     |
| Place of Residence                             | Living with Family | 28.4 $\pm$ 7.18                  | 59 $\pm$ 11.38       | 29.57 $\pm$ 4.79                    | 48.57 $\pm$ 8.42     |
|                                                | Student Dormitory  | 25.23 $\pm$ 4.78                 | 62.96 $\pm$ 11.71    | 30.32 $\pm$ 4.79                    | 50.96 $\pm$ 8.3      |
|                                                | Student House      | 23.83 $\pm$ 5.11                 | 59.33 $\pm$ 8.09     | 28.41 $\pm$ 5.81                    | 48.88 $\pm$ 7.09     |
| Test                                           |                    | F:2.069 p:0.137                  | F: 0.762 P:0.472     | F: 0.728 P:0.488                    | F: 0.486 P:0.618     |
| Family Type                                    | Nuclear Family     | 28.3 $\pm$ 7.44                  | 60.47 $\pm$ 10.23    | 30.79 $\pm$ 5.07                    | 50.9 $\pm$ 8.41      |
|                                                | Extended Family    | 28.92 $\pm$ 8.17                 | 64.33 $\pm$ 12.87    | 30.21 $\pm$ 4.22                    | 46.83 $\pm$ 4.7      |
| Test                                           |                    | t: -0.323 p:0.748                | t: -1.078 P:0.286    | t: 0.002 P:0.988                    | t:1.594 P:0.117      |
| Prior Experience in Providing Care to Migrants | Yes                | 22.31 $\pm$ 6.09                 | 62.13 $\pm$ 11.11    | 28.32 $\pm$ 6.21                    | 53.22 $\pm$ 8.07     |
|                                                | No                 | 26.55 $\pm$ 5.05                 | 57.66 $\pm$ 9.42     | 29.82 $\pm$ 4.79                    | 49.27 $\pm$ 7.74     |
| Test                                           |                    | t: -2.258 p:0.028*               | t: -1.124 P:0.267    | t: -0.585 P:0.561                   | t:1.379 P:0.174      |
| Having Migrant Friends                         | Yes                | 27.55 $\pm$ 6.12                 | 62.44 $\pm$ 10.03    | 28.37 $\pm$ 5.35                    | 47.5 $\pm$ 6.44      |
|                                                | No                 | 24.88 $\pm$ 4.89                 | 60.79 $\pm$ 11.41    | 31.13 $\pm$ 4.99                    | 51.05 $\pm$ 8.27     |
| Test                                           |                    | t: 0.516 p:0.608                 | t: 0.342 P:0.682     | t: - 1.15 P:0.255                   | t: -1.523 P:0.134    |
| Cultural Care Training (Non-Curricular)        | Yes                | 23.23 $\pm$ 4.8                  | 61 $\pm$ 10.52       | 28.33 $\pm$ 5.26                    | 51 $\pm$ 6.25        |
|                                                | No                 | 26.62 $\pm$ 5.51                 | 61.54 $\pm$ 11.2     | 29.97 $\pm$ 5.08                    | 49.65 $\pm$ 8.33     |
| Test                                           |                    | t: -2.167 p:0.035*               | t: -0.167 P:0.868    | t: -0.974 P:0.335                   | t: 0.517 P:0.607     |

NATMS= negative attitudes toward migrants scale, CQS= cultural intelligence scale total, MHC= migrant health center, t= independent sample t test, F= One Way ANOVA, SD= standart deviation, \*= $P<0.05$ .

**Table 4.** Comparison of NATMS and CQS total and sub-dimension scores between students with and without practicum at the migrant health center

| Scale              | With Practicum    |          | Without Practicum |         | t-test | P     |
|--------------------|-------------------|----------|-------------------|---------|--------|-------|
|                    | Experience at MHC |          | Experience at MHC |         |        |       |
|                    | X                 | SD       | $\bar{X}$         | SD      |        |       |
| NATMS Total        | 27.98             | 6.68     | 30.92             | 5.97    | -2.305 | 0.023 |
| CQS-Cognitive      | 16.8462           | 5.42465  | 12.7692           | 4.02256 | 2.05   | 0.043 |
| CQS-Motivational   | 13.8269           | 4.09074  | 11.4231           | 3.09551 | 2.189  | 0.031 |
| CQS-Behavioral     | 13.8269           | 3.69802  | 11.2692           | 3.10038 | 2.585  | 0.011 |
| CQS-Meta-Cognitive | 16.8654           | 3.86045  | 14.5000           | 3.05826 | 1.481  | 0.142 |
| CQS Total          | 61.3654           | 10.88807 | 49.9615           | 7.86893 | 3.187  | 0.002 |

NATMS= negative attitudes toward migrants scale, CQS= cultural intelligence scale total, MHC= migrant health center,  $\bar{X}$ = arithmetic mean, SD= standart deviation. \*= P<0.05, t= independent sample t test.

#### 4. Discussion

The study examined differences in attitudes toward migrants and intercultural competence levels between nursing students who performed practicum at Migrant Health Centers (MHCs) and those who completed practicum in other units. Analysis of the data revealed that students who practiced at MHCs had significantly lower Negative Attitudes Toward Migrants Scale (NATMS) scores than those in other units. This suggests that direct interaction with migrant individuals during practicum may reduce negative attitudes.

Specifically, engaging in activities such as preparing, implementing, and evaluating nursing care plans tailored to the needs of migrant individuals may positively shape students' perceptions. These experiences can enhance problem-solving skills, adaptability, and openness to cultural diversity, highlighting the value of field-based learning in nursing education. Integrating practicum opportunities at MHCs systematically into nursing programs may therefore be an effective strategy to foster positive attitudes and intercultural understanding among future healthcare professionals. A review of the literature indicates that nursing students' interactions with migrant individuals have primarily been studied using qualitative designs, focusing on experiences and challenges related to communication and cultural differences (Yıldırım, 2019; Selçuk and Yanıkkere, 2022). However, research specifically addressing nursing students' attitudes toward migrants remains limited. The present study aims to contribute to this gap in the literature.

Similar to the NATMS scores, the total Cultural Intelligence Scale (CQS) scores, as well as the sub-dimension scores for cognitive, motivational, and behavioral components, were significantly higher among students who performed practicum at MHCs compared to those who practiced in other units. This suggests that practicum experiences positively influence nursing students' cognitive, motivational, and behavioral competencies. Specifically, the increase in the CQS Cognitive Sub-Dimension may reflect enhanced

knowledge acquisition about diverse cultures, while the increase in the Motivational Sub-Dimension (P=0.031) indicates greater willingness and self-efficacy to engage in intercultural settings. The increase in the Behavioral Sub-Dimension is likely related to skills developed through direct practical interactions with individuals from different cultural backgrounds, providing students with opportunities to apply cultural knowledge, practice communication strategies, and adapt behaviors in real-life intercultural settings (Figueroa and Hofhuis, 2024). However, no significant difference was observed in the CQS Meta-Cognitive Sub-Dimension. This finding suggests that meta-cognitive competencies, which involve the ability to manage, monitor, and evaluate one's own learning processes, may develop independently of practicum experiences or may require more targeted and structured educational interventions to be effectively enhanced (Gooden et al., 2017). Overall, these findings indicate that practicums at MHCs support the development of nursing students' abilities to understand diverse cultures, foster empathy, and improve intercultural interaction skills. Although studies specifically examining the effect of clinical practicum on cultural intelligence are limited, research by Majda et al. (2021) and Galan-Lominchar et al. (2024) reports similar outcomes, demonstrating that clinical or simulation-based programs involving intercultural interactions can positively influence students' cultural intelligence.

In the study, the evaluation of socio-demographic characteristics revealed that variables such as gender, place of residence, and family type did not create a significant difference in NATMS or CQS scores. However, direct experiences such as having previously provided care to migrant individuals and receiving extracurricular training on cultural care significantly affected NATMS scores, with students who had such experiences scoring lower. Considering that nursing students may hold negative attitudes toward migrants, providing clinical practicum opportunities at Migrant Health Centers could help them gain direct experience and develop more positive attitudes (Altawil and Kerem, 2023; Türkan Işık

and Can Özdemir, 2024). These findings suggest that socio-demographic characteristics alone are not decisive, but past caregiving experiences and extracurricular training play a more determining role in shaping attitudes.

Contrary to these results, the existing literature presents divergent findings. For instance, a study by Uludağ and Deveci (2018) found that male nursing students exhibited higher levels of cultural intelligence. Similarly, Özkol Kılınç and Öztürk (2020) reported that male students and those who had previously received cultural intelligence training demonstrated significantly higher cultural intelligence levels. In addition, Çetin and Demirel (2023) found that female students, those who had taken migration-related courses or training, and those with migrant friends held less negative attitudes toward migrants. Thus, the findings of this study regarding the impact of training on attitudes toward migrants and cultural intelligence partially diverge from those reported in the existing literature. This difference may be attributed to the fact that the study group consisted solely of senior nursing students, but it may also be related to other factors such as the content of the educational curriculum, particularly the extent to which cultural intelligence topics are addressed; the diversity of students' practicum settings; and the frequency and quality of their contact with migrant individuals (e.g., whether the experience involved active caregiving or mere observation). Qualitative studies, including Yıldırım (2019) and Selçuk and Yanikkerem (2022), highlight the communication challenges and difficulties nursing students face when interacting with culturally diverse patients. In this respect, the present study contributes by quantitatively demonstrating how prior caregiving and training experiences influence attitudes, thereby addressing an existing gap in the literature.

Furthermore, while simulation-based training programs have been shown to positively influence cultural intelligence (Majda et al., 2021; Galan-Lominchar et al., 2024), the present study emphasizes the unique contribution of direct clinical practice in migrant health centers. This comparison underlines that experiential learning through real patient interactions may provide deeper and more sustained effects compared to simulation-only approaches. From an educational perspective, these findings imply that nursing curricula should integrate structured modules on cultural intelligence, complemented by diverse practicum opportunities that ensure both frequency and quality of contact with migrant individuals. Such an approach may better prepare nursing students to deliver culturally sensitive care in increasingly multicultural healthcare environments.

## 5. Conclusion

This study demonstrates that nursing students who completed clinical practice at Migrant Health Centers exhibited lower levels of negative attitudes toward migrants and higher levels of cultural intelligence. These findings suggest that direct interaction with migrant individuals positively influences students' perceptions and enhances their cultural competence. To build on these outcomes, integrating cultural intelligence and migrant health education modules early in the nursing curriculum—before the final years—would be beneficial. Such integration could be reinforced through diverse learning strategies, including clinical simulations, standardized patient models, and other interactive experiences, providing students with practical, hands-on opportunities to engage with culturally diverse populations. Expanding clinical placement opportunities at Migrant Health Centers and systematically offering these experiences to all students would further promote positive attitudes and intercultural competence.

## Author Contributions

The percentages of the authors' contributions are presented below. All author reviewed and approved the final version of the manuscript.

|     | A.T. | C.G.Ç. |
|-----|------|--------|
| C   | 60   | 40     |
| D   | 60   | 40     |
| S   | 100  | -      |
| DCP | -    | 100    |
| DAI | 90   | 10     |
| L   | 80   | 20     |
| W   | 80   | 20     |
| CR  | 80   | 20     |
| SR  | 100  | -      |
| PM  | 80   | 20     |

C=Concept, D= design, S= supervision, DCP= data collection and/or processing, DAI= data analysis and/or interpretation, L= literature search, W= writing, CR= critical review, SR= submission and revision, PM= project management.

## Conflict of interest

The authors declare no conflict of interest. The funder had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

## Ethical Considerations

Before the study, approval was obtained from the Ege University Medical Research Ethics Committee (Approval date: December 14, 2023, protocol code: 23-12T/41) and written permission was received from the institution where the study was conducted. Verbal consent was obtained from all participants included in the study. In addition, permission to use the relevant measurement tools (NATMS and CQS) was obtained from the respective authors. This study was conducted in compliance with

research and publication ethics principles. The research was supported within the scope of the TÜBİTAK 2209-A Program, and the project budget was funded by TÜBİTAK (The Scientific and Technological Research Council of Türkiye).

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