

Cultural Competence in the Public Health System: A Cross-Sectional Study in the Northern Metropolitan Area of Barcelona

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Abstract

The increasing migration to Catalonia—where migrants represent 17.24% of the population—underscores the importance of strengthening healthcare professionals' cultural competence. This study evaluates healthcare workers' self-perceived knowledge, skills, attitudes, training, and comfort in this area.

A cross-sectional, multicenter study was carried out in 93 primary care centers and 1 hospital located in the northern metropolitan area of Barcelona. The CCCTQ-pre questionnaire, consisting of 67 items distributed across 5 dimensions, was employed. A total of 750 responses were obtained from an estimated population of 5400 healthcare professionals. Data were analyzed using R software, with results disaggregated by sex.

Results indicate that the majority of respondents were female (79.9%), with Spanish nationality (94.9%), and held a permanent position (55.5%). Positive correlations were observed between knowledge, skills, and comfort, with attitudes being the highest-rated dimension. Younger, newly incorporated, or migrant professionals scored higher in attitudes and training. No significant differences were found between centers with high or low migration rates.

The findings highlight the need to enhance healthcare professionals cultural training and to adapt institutional policies to the evolving social context. Strengthening education on the social determinants of health and the axes of inequality is essential for promoting culturally competent healthcare services. Given that 17.24% of the population in Catalonia is of migrant origin, improving the cultural competence of healthcare personnel is increasingly necessary. This study assesses healthcare professionals' self-perceived knowledge, skills, attitudes, training, and comfort in this area.

Keywords

primary care, community health, cultural competence, healthcare disparities, immigration

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Introduction

In recent years, the increase in migration that has been registered in Catalan territory suggests that attention to cultural diversity must become a priority. Migrants make up 17.24% of the citizens of Catalonia.¹ In the northern metropolitan area, there are primary care centers with percentages of migrants exceeding 40%.

In recent years, studies have been conducted to assess the needs of healthcare professionals providing care to these populations. Likewise, qualitative research has explored both the barriers and facilitators of healthcare delivery, identifying challenges related to communication, cultural practices (traditional and religious), adaptation to the local culture, working conditions, and lifestyle.² Among healthcare professionals,

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cultural competence has been studied by analyzing their knowledge, skills, comfort levels, and training regarding individuals from cultures different from their own.³ Cultural competence emerged as an opportunity to enhance intercultural communication, reduce health disparities, improve access to healthcare systems, and provide a framework for analyzing scientific knowledge and promoting health equity.^{4,5}

Over time, the focus has shifted toward the idea that increasing knowledge about a particular culture can lead to better care provision. However, this has often led to overlooking the social determinants of health and reinforcing stereotypes related to cultural identity.⁶ Consequently, there has been an evolution to the concept of cultural humility—a continuous process of self-reflection and learning that integrates knowledge and a willingness to improve, based on an intersectional perspective.⁷

Beyond the individual level, where cultural competence plays an important role, other actors within the healthcare system are also critical. These actors contribute at the organizational and structural levels. Therefore, when analyzing the system as a whole, the concept of structural competence is applied. This encompasses the healthcare system, government policies, and the social determinants of health.⁸⁻¹²

The ways in which social factors influence individual health outcomes are known as the social determinants of health (e.g., housing, sanitation, education, employment). Accordingly, when assessing an individual and their health conditions, we adopt an intersectional approach, recognizing that each person is shaped by specific axes of inequality. These axes include gender, social class, race, age, and sexuality.⁹ For these reasons, we aim to study the self-perception of cultural competence among healthcare professionals and the training they have received.

Methods

The study was conducted in Catalonia, Spain, within the public healthcare system, involving participation from 93 primary care centers (CAPs) and the public hospital serving the northern metropolitan area of Barcelona. This was a cross-sectional, multicenter study based on an online questionnaire.

No sampling was conducted. All healthcare professionals who have direct or indirect contact with patients were considered eligible participants. The inclusion criterion was being over 18 years of age. The exclusion criterion was having worked in the same position for less than 1 year.

To assess healthcare professionals' self-perceived cultural competence, the study employed the pre-training version of the Clinical Cultural Competence Training Questionnaire—pre (CCCTQ-pre).^{13,14} This validated instrument explores 5 domains: knowledge, attitudes, skills, encounters, and training of healthcare professionals. It

consists of 67 items, each rated on a 5-point Likert scale, with scores ranging from 1 (strongly disagree) to 5 (strongly agree). Each domain of the CCCTQ-pre contains a different number of items, resulting in distinct scoring ranges per dimension. The possible score ranges for each domain are as follows: Knowledge: 10 to 50, Attitudes: 15 to 75, Skills: 16 to 80, Comfort: 21 to 105, and Training: 5 to 25. In all domains, higher scores indicate a higher self-perceived level of cultural competence. An example of an item from the knowledge domain is: “How much knowledge do you have about the demographics of the various ethnic groups within your service area?”

The questionnaire also incorporates consideration of health disparities, particularly within the domain assessing attitudes related to clinical practice. The health disparities addressed include: poverty, sexism, racism, classism, ageism, and homophobia.

In addition to the CCCTQ-pre items, the survey collected sociodemographic data including nationality, age group, profession, and years of professional experience. Special attention was given to the variable of gender, which was self-identified and categorized as women, men, or non-binary individuals.¹⁵

The online questionnaire was distributed via REDCap (Research Electronic Data Capture),^{16,17} a secure web application designed for data collection and management in research. The survey was open between March 29, 2023, and October 1, 2023, and was made available to all healthcare professionals in the northern metropolitan area of Barcelona. The survey was disseminated through 2 direct email invitations using the institutional email system. Additionally, a notice was posted on the organization's internal intranet in March 2023 to increase visibility and encourage participation, it was closed 30 days before the last response.

Absolute frequencies and percentages were used to describe the demographic characteristics of the healthcare professionals. Continuous variables and the scores of the cultural competence domains were summarized using means and standard deviations.

Bivariate analyses were conducted using Pearson's correlation coefficient to examine relationships between the different subscales of the CCCTQ-pre. Additionally, Pearson's chi-square test was used to assess associations between cultural competence and professional characteristics, as well as with the health disparities included in the questionnaire.

All statistical analyses were performed using the R programming language.

A gender-disaggregated analysis was also conducted. Participants were asked to self-identify their gender, and the variable was subsequently recoded into a binary format. Non-binary individuals were included in the “non-woman” category. This decision was based on the negligible effect

on the final percentage outcomes when aggregating men and non-binary participants into a single category.

Results

A total of 750 healthcare professionals participated in the study of 5435 workers, representing an overall response rate of 13.8%. Of these, 556 participants (74.1%) were from primary care services, while the remainder worked in hospital settings.

Characteristics of Healthcare Professionals

The demographic and professional characteristics of the participants are summarized in Table 1. The typical profile of a healthcare professional in the northern metropolitan area is a woman (79.9%), over the age of 45 years old (52.5%), of Spanish nationality (94.9%), and with a permanent position (55.5%). Women were the majority across all professional categories. However, the proportion of men and non-binary individuals was relatively higher in the medical and administration and services categories compared to others such as nursing, psychology, and social work. Fewer than 50% of participants reported speaking English, and 17% reported speaking French. According to the Statistical Institute of Catalonia (IDESCAT),¹ the average proportion of the immigrant population in Catalonia is 17.24%. Based on this reference, 56.2% of participants work in areas with lower-than-average immigration, while 43.7% work in areas with higher-than-average immigration.

Cultural Competence Dimensions

The self-perceived cultural competence scores across the 5 domains are presented in Table 2. The highest mean score was observed in the Attitudes domain ($M=4.02$), indicating a strong perception of cultural sensitivity and openness. In contrast, the Training domain received the lowest average score ($M=2.31$), which is indicative of limited formal education or preparation in cultural competence among respondents. A statistically significant difference was found by gender in the Attitudes dimension ($P<.001$), with women reporting higher scores compared to non-women.

Correlations Between Dimensions

The analysis of correlations between the questionnaire dimensions is presented in Table 3. Notably, there were strong correlations ($r>0.5$) between Skills and Knowledge, and between Skills and Comfort, indicating that professionals who perceived themselves as more skilled also reported higher knowledge and situational comfort.

In contrast, the correlations between attitudes and the other dimensions were consistently low ($r<0.2$), representing of a relative independence of this domain from the others.

Association between professionals' characteristics and perceived cultural competence

As shown in Table 4, regarding the age of professionals, younger age groups consistently score higher across all scales, particularly in the domains of skills and comfort. A similar pattern is observed with years of work experience: professionals with less than 5 years of experience score higher in skills, comfort, training, and attitude. Staff under the age of 30 or with fewer than 5 years in their current workplace report higher levels of attitude and skills.

Moreover, professionals with a migration background report higher scores in attitude and previous training related to cultural competence. By professional category, nurses show the most favorable attitudes, whereas other professional categories, such as social workers, report having received more extensive training in cultural competence.

There is a balanced representation of staff from primary care centers (PCCs) in both low and high migration areas: 56.9% in low-incidence zones and 43.1% in high-incidence zones. No significant differences were found in the responses between staff working in centers with high or low percentages of migrant patients.

Regarding the percentage of migrant patients attended in the centers, working in a setting with a high proportion of migrants tends to be associated with a greater perceived level of cultural competence, although this association did not reach statistical significance.

Correlation between cultural competence and health disparities:

A correlation analysis was conducted between the perceived impact of different health disparities—assessed through the attitude's subscale—and the remaining dimensions of the cultural competence perception scale. No significant correlations were found between the various health disparities and the other dimensions of cultural competence.

Discussion

The findings of this study reveal that healthcare professionals in the northern metropolitan area of Catalonia perceive themselves as culturally sensitive, particularly in terms of attitudes, while reporting limited formal training in cultural

Table 1. Characteristics of Healthcare Professionals.

Characteristics of health professionals	n (%)	n (%)	n (%)
	Women	Non-women ^a	Total
Age			
Less than 30	45 (8.17)	12 (8.57)	60 (8.14)
Between 30 and 45	229 (41.56)	46 (32.86)	290 (39.35)
Over 45	277 (50.27)	82 (58.57)	387 (52.51)
Total	551 (100)	140 (100)	737 (100)
Nationality			
Spanish	524 (94.93)	133 (95.68)	703 (94.74)
Double	18 (3.26)	3 (2.16)	24 (3.23)
Other	10 (1.81)	3 (2.16)	15 (2.02)
Total	552 (100)	139 (100)	742 (100)
More than a month living abroad			
No	389 (70.6)	89 (64.96)	508 (68.56)
Yes	162 (29.4)	48 (35.04)	233 (31.44)
Total	551 (100)	137 (100)	741 (100)
Profession			
Nursing	189 (33.93)	26 (18.57)	236 (31.47)
Medicine	129 (23.16)	53 (37.86)	199 (26.53)
Administration and service staff	89 (15.98)	35 (25)	131 (17.47)
Nursing assistant care technicians	30 (5.39)	2 (1.43)	36 (4.8)
Social workers	23 (4.13)		24 (3.2)
Midwives	23 (4.13)	1 (0.71)	24 (3.2)
Others	19 (3.41)	4 (2.86)	23 (3.07)
Physiotherapy	11 (1.97)	9 (6.43)	20 (2.67)
Psychology	14 (2.51)	2 (1.43)	17 (2.27)
Directors	13 (2.33)	3 (2.14)	16 (2.13)
Dentistry	7 (1.26)	4 (2.86)	13 (1.73)
Nutrition	8 (1.44)		8 (1.07)
Caretakers	1 (0.18)	1 (0.71)	2 (0.27)
Pharmacy	1 (0.18)		1 (0.13)
Total	557 (100)	140 (100)	750 (100)
Level of care			
Primary care center	404 (73.06)	97 (70.29)	534 (71.87)
Hospital	100 (18.08)	26 (18.84)	144 (19.38)
Others	49 (8.86)	15 (10.87)	65 (8.75)
Total	553 (100)	138 (100)	743 (100)
Studies degree			
Master degree or specialty	252 (45.24)	55 (39.29)	326 (43.47)
Degree	186 (33.39)	39 (27.86)	223 (29.73)
High school or higher training college	89 (15.98)	32 (22.86)	133 (17.73)
PHD	19 (3.41)	12 (8.57)	36 (4.8)
Secondary education	8 (1.44)	1 (0.71)	9 (1.2)
Primary education	3 (0.54)	1 (0.71)	4 (0.53)
Total	557 (100)	140 (100)	750 (100)

^aThe “non-women” category includes 134 men and 6 non-binary individuals.

competence. Younger professionals, those with fewer years of experience, and individuals with a migration background tend to display higher levels of perceived skills, comfort, and openness, suggesting that generational and experiential factors may influence the development of cultural competence. Although nurses show more favorable attitudes and

social workers report greater exposure to training, the overall results highlight a persistent gap between professionals' positive attitudes and their limited educational preparation in this field.

The massive electronic contact method is known to yield low response rates, the 13.8% response rate obtained aligns

Table 2. Self-perceived Cultural Competence in Its 5 Dimensions According to Gender. N=742.

Dimensions	Mean (SD)			Mode (total)	P
	Women	Non-women	Total		
Knowledge	2.88 (0.75)	2.9 (0.76)	2.89 (0.76)	3	.709
Skills	2.89 (0.85)	2.91 (0.91)	2.9 (0.87)	3	.854
Comfortable	3.06 (0.66)	3 (0.64)	3.06 (0.66)	3	.335
Training	2.34 (0.91)	2.21 (0.87)	2.31 (0.91)	2	.218
Attitudes	4.07 (0.59)	3.83 (0.59)	4.02 (0.6)	4	<0.001**

*P value < .05. **P value < .01.

Table 3. Correlation of Pearson With Dimensions of CCCTQ-Pre (n=750).

Dimensions	Knowledge	Skills	Comfortable	Training
Skills	0.666**	1	1	1
Comfortable	0.451**	0.599**	1	1
Training	0.430**	0.365**	0.333**	1
Attitudes	0.092*	0.100**	0.165**	0.118**

*P value < .05. **P value < .01.

with standard rates for online surveys without prior researcher contact.¹⁸ The professional profile distribution of respondent's mirrors that of the general health department workforce.¹⁹

The healthcare workforce surveyed was predominantly female. In this context, a review published in 2024²⁰ reported that visits with female physicians were longer and involved more patient-centered communication than those with male physicians. More recently, another systematic review that included different healthcare professions noted gender differences, with female healthcare workers demonstrating higher cultural sensitivity compared to their male counterparts.²¹ Therefore, gender should be carefully considered in future studies.

Additionally, a high academic level was observed, with 80% holding higher education degrees, yet respondents still reported feeling inadequately trained in cultural competence.

A lower self-perception of skills and comfort with increasing years of professional experience, and a more positive attitude among professionals under 30 years, may be linked to the growing multicultural nature of society over the past 3 decades, largely due to migratory movements in Catalonia.^{1,22} Migrant professionals scored higher in training and attitude—likely reflecting familiarity with multiple cultures and possibly firsthand experiences of discrimination.²³ While no data places Spain as the country with the highest number of foreign healthcare professionals or professionals migrating abroad,²⁴ it remains one of the European countries with the highest proportion of migrants.^{25,26}

Analysis by professional category showed that nurses reported the highest self-perceived attitude scores, while social workers reported receiving the most training. However, comparisons with other studies were limited due to a lack of literature focusing on various professional roles.²⁷

A 2013 study conducted at Hospital del Mar³ using the same Clinical Cultural Competence Training Questionnaire (pre-version) at the hospital level showed higher participation from nurses (46.9%) and physicians (30.9%) than the current sample. In that study, responses were recategorized into 3 values: 0 (none/little), 1 (some), and 2 (considerable/high value), and results were analyzed by department rather than professional category. They reported high scores in knowledge, skills, attitudes, and comfort, but low in training—similar to the current findings. In both studies, professionals expressed a willingness to improve their competence while acknowledging insufficient training.

In primary care settings, there is a scarcity of literature specifically addressing healthcare professionals cultural competence.^{3,28} This study's inclusion of all professional categories offers a more comprehensive view and supports considering primary care as a distinct field worthy of dedicated study. The inclusion of professionals from the area's reference hospital also allows for a broader understanding of the entire regional workforce.

Another notable finding was the minimal difference in cultural competence self-perception between primary care centers (PCC) serving up to 42% migrant patients versus those with only 4%. This could partly reflect social desirability bias,²⁹ with respondents presenting answers that align with institutional expectations. Alternatively, professionals in high-migration areas may feel more acutely the lack of training and therefore rate themselves more modestly. The absence of a correlation between working in high-migration areas and higher cultural competence contradicts previous evidence linking greater exposure to diversity with better training,³⁰ and suggests a need for institutional support and specific strategies to promote structural competence across geographic areas.⁹

This study also found no correlation between cultural competence domains and the perceived importance of

Table 4. Associations Between Professionals Characteristics and Perceived Cultural Competence.

Characteristics	Knowledge M (SD)	Skills M (SD)	Comfortable M (SD)	Training M (SD)	Attitudes M (SD)
Age					
Less 30	2.96 (0.85)	3.16 (0.92)	3.38 (0.71)	2.51 (0.91)	4.09 (0.68)
Between 30 and 45	2.84 (0.73)	2.89 (0.86)	3.09 (0.66)	2.36 (0.92)	4.12 (0.57)
Over 45	2.92 (0.77)	2.86 (0.87)	2.97 (0.64)	2.25 (0.88)	3.94 (0.59)
P value	.643	.040	.001	.092	.157
Working experience					
0 to 5	2.86 (0.81)	3 (0.9)	3.2 (0.71)	2.49 (1.03)	4.12 (0.64)
Over 5	2.9 (0.75)	2.88 (0.87)	3.03 (0.65)	2.27 (0.88)	4 (0.59)
P value	.414	.259	.000	.059	.000
Profession					
Medicine	2.92 (0.78)	2.93 (0.78)	3 (0.6)	2.06 (0.77)	3.95 (0.55)
Nursing	2.85 (0.72)	2.91 (0.76)	3.05 (0.57)	2.34 (0.85)	4.16 (0.53)
Administration	2.85 (0.81)	2.76 (1.04)	2.99 (0.75)	2.29 (0.89)	3.8 (0.68)
Others ^a	2.95 (0.75)	2.97 (0.96)	3.18 (0.77)	2.56 (1.05)	4.07 (0.62)
P value	.460	.186	.010	.000	.000
Nationality					
Non-Spanish	3.07 (0.85)	3.15 (0.8)	3.15 (0.51)	2.82 (1.14)	4.23 (0.56)
Spanish	2.88 (0.75)	2.89 (0.87)	3.05 (0.67)	2.29 (0.89)	4.00 (0.6)
P value	.159	.075	.155	.005	.008
% Migration ^b					
Below	2.91 (0.73)	2.94 (0.88)	3.04 (0.68)	2.34 (0.85)	4.01 (0.59)
Above	2.95 (0.78)	2.93 (0.83)	3.06 (0.61)	2.28 (0.88)	4.06 (0.59)
P value	.531	.838	.702	.392	.363

^aThe category "Others" is the sum of the categories: Nursing assistant Care Technicians, Social Workers, Midwives, Physiotherapist, Psychologist's, Directors, Dentistry's, Nutritionist's, Caretakers, Pharmacy, and others.

^bValues compared to the average Catalonia migration.

Table 5. Correlations of Pearson Between the Items of Dimensions Attitude With the Other Dimensions of CCCTQ-pre Test.

	Knowledge	Skills	Comfortable	Training	Attitudes
Genetics	0.009	0.046	0.093*	0.052	0.376**
Lifestyle	0.027	0.030	0.022	-0.006	0.426**
Environment	0.005	0.014	0.060	0.019	0.498**
Poverty	0.007	0.021	0.033	-0.009	0.459**
Studies degree	0.014	0.010	0.017	-0.037	0.529**
Illiterate	0.006	0.011	0.053	-0.022	0.556**
Ageism	0.050	0.090*	0.107**	0.031	0.586**
Sexism	0.034	0.072	0.089*	0.045	0.733**
Racism	0.024	0.053	0.086*	0.022	0.716**
Classism	0.041	0.065	0.094*	0.051	0.713**
Ableism	0.023	0.062	0.125**	0.036	0.724**
Homophobia	0.050	0.068	0.085*	0.034	0.722**

*P value < .05. **P value < .01.

various health disparities (Table 5). This disconnect may indicate a form of cultural reductionism, where the cultural aspect is separated from the social, masking structural inequalities and distancing professionals from an intersectional perspective.³¹ This underscores the need for training that emphasizes how social inequalities shape health outcomes and care delivery.

Narratives of patients are proposed as a training tool to foster cultural humility and better understand patient experiences.^{27,32} These narratives enable exploration of social determinants and axes of inequality in health from a community health perspective.^{33,34} Other studies have proposed interventions such as incorporating community health workers to improve access for vulnerable populations²⁹ or

enhancing professional training,³⁵⁻³⁷ although evidence on the effectiveness of these strategies remains limited.

Regarding training, the literature remains inconclusive, with no clear consensus on effective approaches. Existing training programs are heterogeneous in content and format, making it difficult to determine whether improved competence is due to personal motivation or training itself.^{28,29,38} Moreover, most available initiatives adopt a culturalist perspective, primarily focusing on learning about other cultures. Given the limited attention to health disparities, there is a clear need for training that integrates both cultural and intersectional perspectives.

The study's limitations include the use of self-administered questionnaires, which may be subject to social desirability bias. To address this, future research could incorporate in-depth interviews or focus groups to gather richer data.³⁹ Another limitation is the length of the questionnaire, which, being too long, could make it difficult to complete correctly. Nevertheless, the current dataset offers the opportunity to develop and validate a shorter version of the instrument that meets the required psychometric standards, thereby ensuring both validity and reliability of the measures. Finally, the lack of racial diversity among the research team should also be acknowledged, which will be taken into account for future phases of this project.

Conclusions

Healthcare professionals report low perceived cultural competence in terms of training, moderate levels in knowledge, skills, and comfort, and high levels in attitude. No correlation was found between the perceived importance of health disparities and cultural competence. Despite working in an increasingly diverse society, healthcare professionals still do not feel adequately trained in cultural competence and do not consistently recognize social inequalities as key health determinants.

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Ethical Considerations

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Consent to Participate

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

Raw data is not publicly available to preserve individuals' privacy under the European General Data Protection Regulation.

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