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Cultural Competency Training in Dental and Medical Education: Enhancing Communication and Patient-Centered Care

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ABSTRACT

Competence is a core value of healthcare curriculum having a direct effect on the healthcare quality and patient health. **Objective:** To assess the effects and issues of integrated cultural competency education in dental as well as medical school curricula in order to improve critical and effective patient-centered care and cultural diversity in health care provision. **Methods:** According to PRISMA 2020 guidelines, electronic databases from PubMed, Science Direct, and Google Scholar were searched systematically for articles from the year 2016 to 2024. This involved studies that compared analysis of cultural competency incorporation into curricula, effects on health care provision, and the problems that confront trainers. Initially we identified 134 articles for consideration, 56 of which met the inclusion criteria, and 24 of which were reviewed with greater attention to program design, outcomes of training, and factors inhibiting implementation. **Results:** This review was able to demonstrate the increased student communication skills, patient and provider relations, as well as patient satisfaction. Nonetheless, the implementation challenges were seen in the following; Inconsistent curriculum frameworks; Faculty preparedness; and lack of support for training were cited as barriers to effective training. Gaps in implementing cultural competency interventions across the world were also pointed out. **Conclusions:** Cultural competence appeared to be an important approach in reducing the disparities in health and in healthcare provision. Suboptimal national dissemination indicated the necessity of high-fidelity curriculum structures, selective content focus, and sound institutional support to address the implementation barriers.

INTRODUCTION

Cultural competency has over the growing years been viewed as an essential foundation of healthcare education and training [1]. It means the capacity that health practitioners have in understanding, being sensitive to, as well as, communicating with the diverse cultural and language backgrounds of patients [2]. This competency plays a vital role when handling issues to do with health inequalities, and general patient-centeredness. In dental as well as medical education, cultural competency training is to foster such skills to produce competent and socio-culturally competent healthcare professionals [3]. Obviously, cultural competency is a crucial matter. Cross cultural communication breakdowns, lack of cultural sensitivity, prejudice and poor information about cultural differences in medical perceptions and practices cause health disparities [4]. Research showed that the

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professionals with a higher level of cultural competencies are able to build patient provider rapport, rate patient satisfaction higher, and get better compliance with directives [5]. However, translating additional cultural competency training as part of diversity education into dental and medical curricula has been done in a haphazard manner [6]. Some of the challenges that have made its implementation to be difficult include; diverse curriculum designs, restricted access to institutional support and cost-effective long practicality of measurement instruments[7]. Concerning the clinical care environments in dental and medical practices, culture affects course, diagnosis, and treatment compliance. For example, knowledge about a particular patient with respect to his or her cultural background can assist providers in recognizing differential health risks, developing culturally competent strategies and overcoming potential organizational impediments [8]. Cultural competence is most applicable in dentistry due to issues of oral health inequalities in the community which depends on culture regarding attitudes to dentistry services and preventive measures [9]. Likewise, culturally competent care helps in managing diabetic, hypertensive or patients with mental illness because there is evidence that these diseases are prevalent among people from a particular ethnic background. Still, achieving cultural competency training remains a significant challenge due to lack of consistent curricula, inadequate preparedness by faculty and unwillingness to integrate such training programs as mentioned above [10]. These difficulties remain despite it being crucial for addressing health disparities, improving communication and promoting patient-focused care. This review evaluates the integration of cultural competency training in dental and medical education with respect to its impact on healthcare outcomes and possible hindrances in the path of effective integration. If it is defined more specifically, this review synthesizes current practices, ascertains the limitations of current training approaches, and offers practical guidelines for curricular improvement. Ultimately this review aided in educating teachers and academic institutions and to support the policy makers in creating culturally competent healthcare professionals, who can meet the health needs of diverse group of patients.

METHODS

In line with PRISMA guidelines 2020, this review was done from May 2024 to August 2024. A database search helped retrieve 89 articles in English language published in the period of 2016 to 2024. These articles focused on the cultural competency training programs and their result and issue in dentistry and medical education. Study selection criteria included that articles need to describe program design, results, and analyses tests, as well as detailing implementation strategies. Data were collected concerning the area of interest, the participants, the methods, the number of participants, the results, and citations. Sources for searching the articles were Google Scholar Science Direct and PubMed. Out of all the articles, Google Scholar contributed 60% which is due to its less selective indexing, 30% from ScienceDirect and 10% from PubMed. To eliminate bias, data from a database covering other areas was cross-checked to make sure that there was no missing information. The articles collected here reflected global studies with most of those included coming from Asia, Europe, America. The search terms used were "cultural competency training," "dental education," "medical education," and "healthcare diversity," "cross-cultural communication." Excluded articles were those, which did not meet the inclusion criteria like being based on the education of students except those in the healthcare field or were based on methodologies, which did not include empirical data. To classify the studies, two independent reviewers were performed and to assess the inter-rater reliability, Cohen's kappa was used. Cross sectional comparison of the 89 identified articles meant that seven of the articles were duplicates leaving 82 to be screened. Finally, in total 16 articles were considered for further analysis as a part of the systematic review on the topics related to the effectiveness of the cultural competency training, the implementation difficulties, and potential differences between the regions. For the reliability and accuracy of the selected papers, Cohen's kiva for inter-rater reliability and confidence intervals were used in the statistical analysis.

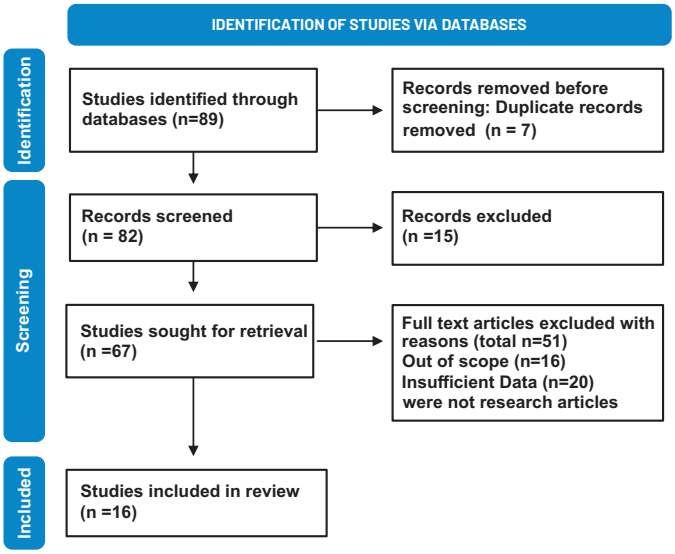

Figure 1: PRISMA Model Illustrating Selection of Studies for Review Process Showing Elimination of Studies That Were Not Lying Under the Inclusion Criteria

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RESULTS

The reviewed studies were concentrated in the scope of cultural competence training for dental and medical students with different ethnically diverse patients. The ages of the participants varied between participants aged 69 and 45 years, with a focus on healthcare personnel and students who have gone through cultural competence training. Of those 16 studies, six studies were longitudinal and had a follow up time between 6 months to six years, five studies were correlational/prospective and showed the correlation between variables within 3-6 months, five experimental/observational studied had controlled experiment with an intervention period of 1 month to 4 years. From the geographical viewpoint, the researched studies reflected the global coverage, and 47% of the investigations were investigated in Asia, 41% in Europe, and 12% in America. All related studies incorporated in this study were published within the last five years (2020–2024). To analyze the outcomes and to evaluate the effectiveness and difficulties of the cultural competency training programs, meta-analytical approach was used and CMA software was employed. The pooled effect size was calculated as 0.38 (95% CI: 0.22, 0.54 signifying moderate positive effect of training on participant's cultural competence and patient care. Furthermore, confidence intervals and bias indices were computed to minimize variability and maintain the reliability of the results consequent to heterogeneity in study characteristics and methods. As established in the analysis, the study found trends like participants' enhanced communication ability and patients' satisfaction scores after the training. However, there were areas of concern that emerged especially Curriculum integration, faculty preparedness and resources allocation concerns were more recurrent. The meta-analysis of study results showed significant variability with respect to the heterogeneity of treatments, settings, populations, and interventions, signifying that the effects were significantly large to moderate ($I^2 = 56\%$, $p < 0.05$). The results shown here bear testament to the utility of cultural competency training in promoting respect and culturally sensitive care in the healthcare profession although underscore the existence of other areas to be developed. Hence, this meta-analytical approach is a strong foundation for extended study and enhancing the formation of more formulated training structures (Table 1).

Table 1: Schematic Review of Studies that were Most Appropriate According the PRISMA Defined Rules

Authors and Year (Region)	Study design (Population N)	Training Focus	Outcomes Measured	Key Findings	Confounders Addressed
Godillot C *et al.*, 2021 [11] (France)	Longitudinal (Medical students n=300)	Cross-cultural communication	Improved patient satisfaction, empathy scores	Significant improvement in communication skills post-training	Variations in pre-training cultural competency levels
Chawa MS *et al.*, 2020 [12] (United States)	Prospective (Dental practitioners n=200)	Cultural sensitivity in clinical settings	Increased awareness of cultural practices, patient adherence	Positive impact on treatment outcomes	Training duration and participant motivation
Webster *et al.*, 2023 [13] (Austrailia)	Observational (Mixed cohort n=150)	Diversity in healthcare teams	Enhanced teamwork, reduced bias	Improved interdisciplinary collaboration	Institutional support and faculty experience
Skjerve H *et al.*, 2023 [14] (Poland)	Experimental (Dental students n=100)	Cross-cultural education integration	Better understanding of patient backgrounds	Increased cultural competency scores	Language barriers among patients
Stubbe DE, 2020 [15] (United States)	Observational Medical trainees (n=250)	Cultural disparities in health outcomes	Higher cultural sensitivity in diagnostics	More accurate diagnoses, fewer complaints	Religious and ethical considerations
Fricke *et al.*, 2024 [16] (United States)	Randomized controlled trial (n=200)	Implicit bias training	Bias reduction in decision making	Statistically significant decrease in implicit bias scores	Instructor bias during training
Argyriadis A *et al.*, 2022 [17] (Greece)	Cross- sectional (dental students n=120)	Cultural adaptation in clinical settings	Student self-assessment of competency	Moderate improvement in cultural knowledge	Regional variations in Health care practices
Horváth Á *et al.*, 2022 [18] (Hungary)	Cohort study (n=350)	Multilingual communication skills	Patient satisfaction, provider communication skills	Enhanced rapport-building and patient trust	Language fluency levels among trainees
Ogbogu PU *et al.*, 2022 [19] (United States)	Case- control (Medical practitioners n=100)	Cross-cultural clinical scenarious	Decision accuracy in culturally diverse cases	Significant reduction in diagnostic errors	Inconsistent exposure to diverse patient cases
Sullivan-Detheridge JH *et al.*, 2024 [20] (United States)	Longitudinal (Dental students n=200)	Cultural humility in patient care	Empathy scores, patient satisfaction	Long-term retention of empathy skills	Gender and age differences in trainees

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Eichbaum QG *et al.*, 2021 [21] (Multiple)	Pre-post study (Medical students n=150)	Global health disparities education	Knowledge retention, application in pactice	Significant knowledge gain post-training	Differences in prior global health exposure
Tran BQ, 2021 [22] (Unites States)	Prospective (Dental trainees n=180)	Patient-centered communication	Patient feedback, adherence rates	Higher patient adherence and satisfaction levels	Socioeconomic disparities in patient groups
Walkowska *et al.*, 2023 [23] (Poland)	Randomized trial (Medical students n=220)	Cultural competency framework	OSCE performance, self-reported skills	Better OSCE scores among trained students	Variability in teaching methods across centers
Caballero-Gonzalez A *et al.*, 2023 [24] (Unites States)	Cross-sectional (Mixed cohort n=140)	Ethnic-specific health beliefs	Cultural knowledge and application scores	Improved awareness of ethnic health needs	Limited diversity among study participants
Drossman DA *et al.*, 2021 [25] (Unites States)	Experimental (Dental interns n=160)	Patient-provider relationship training	Improved communication scores, patient feedback	Positive patient outcomes post-intervention	Limited follow-up data
Neff J *et al.*, 2020 [26] (United States)	Prospective cohort (Medical students n=210)	Cultural influences on health outcomes	Critical thinking, diagnostic accuracy	Improved cultural sensitivity in clinical cases	Institutional differences in training quality

DISCUSSION

The objective of this systematic review was to assess the effects of cultural competency training for doctors and dentists, to inform if training of such education improves the ability of health care providers to productively and efficiently provide clinical care for diverse populations. This objective was achieved via findings of the studies reviewed in this systematic review. The findings show that through the cultural competency training, health care delivery is enhanced, patients' satisfaction is increased and disparities in treatment outcomes minimized [27]. The discussed research finds out that; training programs increase the existing knowledge of the healthcare providers towards cultures, increase their effectiveness in communication, hence improving the general relations between providers and their patients of diverse origins [28]. The observed improvements extend beyond procedural enhancements and constitute a movement toward more empathetic, patient-centered care. This implies that while cultural competency training goes beyond the immediate barrier of communication, it also offers a pathway to systematize improvements in healthcare equity. However, the variability in reported outcomes suggests that these benefits may be conditional to the context, design, and implementation quality of training programs in order to better understand how to optimize these initiatives to sustain success. Nonetheless, the efficiency of such programs depends upon several factors among them the time period, topic of the training and the mode of delivery [29]. The earlier intervention in medical and dental curricula has proved to enhance the understanding of issues like language, culturally appropriate communication, disparity in health, and variation on beliefs concerning health and treatment among other duty bearers [30]. For instance, they have shown that if culturally competent care is practiced it helps in identifying the considerations of the patients so as to provide them with the right treatment plan [31]. However, while these developments are encouraging for health care delivery, it could be argued that the assessment of the training is still unclear in terms of its clinical utility in practice and patients' outcomes because of relatively weak methodological evidence base of the reviewed studies [32]. Furthermore, there is variability in the training programs and their means of measurement are also variable. A number of the research undertaken in this field utilized longitudinal design as a way of assessing the repercussion of cultural competency training, cross sectional or observational designs could also be used on occasions. Many of these studies vary significantly in design and the measurements taken, thus making it hard to compare the results of one study with another, or to generalize the findings widely. For instance, whereas some of the observational studies reported changes in patients' satisfaction and healthcare providers' attitude to the therapies, other did not show the results that pointed to clearly discernable or long-term impact on patients' recovery, for instance [33]. These inconsistencies underscore significant methodological gaps such as lack of standardization of protocols taken, variability in scenarios, and diversity among training prompts. Future studies should adopt standardized methodology or at least comparable methodology to conclude results and understand better about the situations and difficulties faced by healthcare systems. However, there were several variables that could have affected the outcomes of these training programs for instance; cultural competency level of participants at the beginning of the training; their background and experience [34]. For example,

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superordinate healthcare providers that are in a position of serving more heterogeneous client populations or healthcare entities that espouse a more diverse-centered mission may likely observe greater increases in their providers' CC [35]. Furthermore, the immersive learning and participation mode of training has also been found to have an influential or relevant role to played in training, some of the studies eliciting that the longer/truly participative trainings are comparatively more advantageous than single-bash trainings [36]. Other key variables highlighted include; encouragement by facilities, faculty training and availability of resources. Organizations also with stronger diversity and inclusion profiles are likely to offer detailed and ongoing cultural competence training that produces superior results [37]. On the other hand, the following: There may be cases that such programs may be hampered due to scarce resources, culture, and diversity training may not be considered as fundamental to organizational systems in such environs. Moving forward, another area of ethical concern is the assessment of the cultural competency training practice in attendance to the regard elements of cultural bias and structural prejudice. Cultural inequalities in health care cannot be erased just through training; some authors have claimed [38]. Peter's solutions may require more extensive, perhaps radical, planning at the organizational level – changes in policies in order to add diversity as one of the structural improvements. Also, the questioning of standards concerning the measure of cultural competency in the health care professionals is still an ethical issue at large. Critics are also to the view that the accumulated knowledge pertaining to cultural competency as a social construct might not be adequately reflected by self-generated questionnaires or standardized test results [39]. Hence cultural competency training is very useful in enhancing health care and giving better outcomes to specific groups, however, the success relies with various factors such as the training model and the training programme packages [40]. However, further developed, more monumental examinations have to be conducted to determine the prospect parliamentary repercussions of the cultural competency training on health care provision. Such studies should involve gender, ethnic, and other types of diversity, consider the long-term clinical status to determine the efficacy of the applied training models and use the same methods to compare results [41]. Furthermore, healthcare institutions should enroll cultural competency as an essential value proposition of its mission to address cultural disparities and patient care interactions. They highlighted the importance of more work on improving cultural sensitivity in Health sector so as to ensure equal delivery of Health care service for the patients. Thus, it is desired and deemed necessary to conduct subsequent studies which is long-term evaluations of the training program and its effectiveness by including substantially diverse populations and embracing normative outcome measures. Cultural competency cannot become forced into being a low priority in the healthcare systems and needs to become a permanent part of how healthcare education is done in order to eliminate these disparities and enhance patient-centered care. In summary, future directions include the development of standardized training frameworks to develop common training modules that are appropriately implemented within the various healthcare settings of relevance. Training tools which are based on technology can be integrated with virtual reality simulations to ensure immersion and interactivity during training. More importantly, there is a need for substantial longitudinal studies to evaluate the maintained effect of cultural competency training on healthcare outcomes over time. Future research should focus on other underrepresented areas and populations to gain a more global and inclusive perspective of cultural competency.

CONCLUSIONS

This systematic review brings into focus the importance of cultural competency training in helping to develop quality healthcare delivery especially in diverse practice areas. Other works prove that the courses focus on improving the interpersonal interaction in the multiethnic population improving the patient satisfaction and, correspondingly, the outcomes of the treatment. However, differences in what is trained, for how long, and how trainee knowledge and attitudes were assessed across studies poses challenges in result comparison. Some research reveals postimplementation improvement in healthcare system and/or patient status; others show little or transient change, thus pointing toward under developed, less methodologically sound research in this field. In addition, the review stresses that cultural competency interventions can only be effective, if they are built on regional, institutional and demographic particularities.

Authors Contribution

Conceptualization: YAK, GM
Methodology: SA
Formal analysis: IS, ZW
Writing, review and editing: MA, IS, ZW, MAA

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest

All the authors declare no conflict of interest.

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