

Educating Nursing Students for Cultural Competence in Emergencies A Randomized Controlled Trial

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Abstract

Background: Racial and ethnic minorities suffer significantly more than others in the wake of disasters. Despite the growing recognition of the importance of culturally competent health services, systematic cultural competence training in the medical education system is still scarce, especially in the field of emergency. The current study aimed to examine the effectiveness of an online culturally informed intervention for increasing cultural competence in emergencies among nursing students.

Methods: A randomized controlled trial was used to test the intervention effectiveness in increasing nursing students' cultural competence in four domains: attitudes, knowledge, skills, and encounters. The study included 72 undergraduate nursing students recruited from two academic institutes. Participants were randomized (1:1 ratio) to an intervention (n=34) and control group (n=38). The study adheres to the Consolidated Standards of Reporting Trials (CONSORT).

Results: Multivariate analysis of variance with repeated measures, followed by post hoc analyses with Bonferroni correction for multiple comparisons, revealed that the intervention was effective in increasing the participants' culturally competent knowledge. The effect of the intervention on the skills domain approached significance. No group differences were identified in the attitudes and the encounters domains.

Conclusions: The current study supported the effectiveness of an online culturally informed intervention in increasing cultural competence in emergencies, especially in the cognitive domain (knowledge). Our results encourage the development of future intervention programs that are based on a deep understanding of local values, needs, and preferences.

1. Introduction

Natural and human-made disasters are priority public health concerns that are associated with adverse physical and mental impact on individuals and communities. While all population members are affected by disasters, research suggests that racial and ethnic minorities are more vulnerable than others to the physical, psychological, and economic effects of disasters [1]. An inclusive approach to disaster and emergency preparedness, response, and recovery activities requires that culturally and linguistically diverse populations are not overlooked [2]. Yet, systematic training in cultural competence is still missing from the medical education curriculum [3], especially in the field of emergency.

The current study examined the effectiveness of a culturally informed online education program in increasing cultural competence during emergencies among nursing students. The program incorporates global knowledge of emergencies with local understating of cultural norms, values, and practices. It may assist in increasing nurses' cultural competence in different settings.

1.1 Background

Cultural competence in healthcare requires a systematic understanding of the cultural and social effects on individuals' health-related beliefs and behaviors and on the multiple levels of the healthcare system [4]. The most popular conceptualization of cultural competency, proposed by Sue et al. [5], includes three aspects: (1) awareness of one's own culturally related biases, attitudes, and values, (2) knowledge about the cultural values and historical background of diverse populations, and (3) specific skills that can be applied to increase effectiveness when working with a diverse clientele. Cultural competence training has been proposed as a strategy that facilitates the provision of culturally appropriate care by enhancing cultural knowledge, attitudinal responses, or skills [6]. Studies demonstrated that cultural competence training programs could be effective in improving patient-provider communication, facilitate patient-

centered care, and increase care access [7, 8]. However, these programs' effectiveness remains elusive due to a lack of methodological rigor research in this field [4].

There are three main reasons why culturally competent healthcare may be especially crucial during emergencies. The first reason is the high vulnerability of racial and ethnic minority groups to the physical, mental, and economic effects of disasters [9]. The increased vulnerability of ethnic minority throughout the continuum of disaster phase has been attributed to multiple cultural, social, and financial factors, including the level of language proficiency, limited acculturation level, migration background, lower socioeconomic status, disparities in healthcare, reduced access to information, community isolation, and distrust in healthcare systems [10, 11]. Also, the high interconnectedness of family and community members in collectivist cultures entails that the effects of disasters may impact a wide circle of individuals beyond the direct victims [12]. The lifestyles and behaviors of collectivist countries, such as conformity and tradition, which are a source of physical and social resilience [13], may also pose a threat in times of pandemic outbreaks [14, 15].

The second reason why cultural competency is so important during emergencies is related to the key role that cultural values and traditions play in community resilience. Disaster has been defined as an event in which the social structure is disrupted and prevents the fulfillment of the society's essential functions [16, 17]. Disasters may also create or exacerbate tensions between racial and ethnic groups, increasing discrimination and racism and putting communities of severe social and economic adversities [18]. Notably, some human-made disasters, such as war, terror, or violence, are often directed towards communities with limited resources that have already experienced a severe disruption to their social fabric due to displacement, loss, trauma, and distrust [19]. Therefore, the strengthening of community reliance and cultural identity is a crucial intervention goal [20]. Finally, cultural competency is essential because crisis interventions require an immediate development of trust between people or organizations [21]. Providing a respectful, empathic, and tolerant professional attitude might be particularly challenging in emergencies because healthcare providers are expected to work under extreme levels of stress, often in non-familiar geographical and socio-cultural contexts.

Although the importance of culturally competent health services has been recognized, the influence of culturally competent intervention within disasters and emergency management has not been systematically studied [22]. There is also a lack of specific cultural competency knowledge in the emergency management scholarship of learning and teaching literature [6]. Such lack of emergency-specific cultural education, coupled with the increasing diversity of the patient population, requires that medical education systems train cultural competence among health professionals [23].

Based on the gaps described in the literature, the current study aimed to examine the effectiveness of an online culturally informed intervention in increasing cultural competence in emergencies among nursing students.

1.2 The development of a culturally informed intervention

The theoretical framework of the intervention program integrates models of culturally-sensitive mental health interventions [24, 25] with core concepts of cultural competence, such as abilities, knowledge, and skills as set by the International Association of Emergency Managers' Code of Ethics and Professional Conduct [26]. The research model proposed by Jordans and his colleagues [24] considers both universal and local knowledge of mental health issues. According to the model, developing culturally competent interventions mandates a preliminary qualitative phase to establish a systematic understanding of the community's needs and preferences and determine tentative intervention aims. Guided by this view, the described intervention was based on qualitative data collected through semi-structured interviews with ten key-informants in the fields of emergency and cultural competence healthcare. Informants were academic scholars (n = 4), military medical professionals (n = 2), community physicians (n = 3), and the head of one of the largest community emergency response teams. Most of them (70%) were affiliated with one of the ethnic minority groups in Israel (Ethiopian, Muslim-Arabs, Bedouin Arabs, Druze, former-Soviet Union immigrants, and Ultra-orthodox

Jews). The analysis was guided by a structured process [27], using the three core concepts of cultural competency [5]: attitudes, knowledge, and skills as a specific theoretical framework. Additionally, the program drew from the education literature, which states that cultural competency is learned through interactive dialogue and reflection exercises [28] and is based on the expertise of staff and faculty [29]. Therefore, the program included short, recorded lectures of academic experts and self-monitoring exercises. Recorded segments of interview data were incorporated as well.

The course syllabus follows the model of cultural competence [30, 31] and reflects the core concepts of cultural competence as set by the International Association of Emergency Managers' Code [26]. The model consists of three aspects of development. The first aspect is concerned with attitudes or awareness towards culture, race, and ethnicity. This aspect includes self-reflection of our personal beliefs, values, and cultural history and how they influence our own and our patients' lives. The second aspect is concerned with the cultural knowledge of diverse populations. This aspect involves a high motivation to learn about diverse cultures and their health-related beliefs, values, and practices. The third aspect, "skills," refers to the ability to use cultural knowledge in real-life situations [32].

2. Methods

The study is a randomized controlled trial (RCT) designed to assess the effectiveness of a cultural competence intervention for nursing students. The study adheres to the Consolidated Standards of Reporting Trials [CONSORT; 33]. Data was collected between October 2019 and January 2020. For full details about the study protocol, please see Slobodin et al. [34].

2.1 Participants

The initial sample included 186 nursing students recruited from two academic institutes in Israel. Students were offered participation by the course lecturer, who was not part of the research team. A research assistant was present throughout the online course to assist students and address questions. Inclusion criteria were: (1) Nursing students who studied in their second academic year at least. (2) Participating in pre-and post-intervention assessments while providing personal code that allowed a reliable matching. The criteria for exclusion were (1) Completing less than 80% of the questionnaire. (2) Inability to match pre-and post-intervention assessments.

All students signed an informed consent, approved by the IRB, that explains the study's aims and procedures and emphasizes their voluntary participation and the right to withdraw at any point without consequences. After signing informed consent, the 186 participants were randomized (1:1 ratio) to an intervention and control group. The intervention group were assigned to the cultural competence program. The control group was assigned to a non-intervention condition, an equivalent program addressing general guidelines for clinician-patient communication. Randomization was performed using computer-generated block randomization by an independent researcher. The principal investigators and data analysts were blinded to the group allocations of the participants. Of the 186 randomized participants, 91 participants in the intervention group and 95 in the control group completed the pre-intervention assessment (T0). A total of 115 participants completed the two-week post-intervention assessment (T1), 51 in the intervention group (56%), and 64 (67%) in the control group. After pairing pre-and post-intervention assessments, 72 participants were left and included in the final analysis; 34 in the intervention group and 38 in the control group (see Fig. 1 for a flow chart of the study's methodology). The demographic and background characteristics of the two study groups are presented in Table 1. The two study groups did not differ on age, gender, migration status, and academic year.

Table 1
Background variables of the two study groups

		Intervention group (n = 34)		Control group (n = 38)		Difference
Age (M, S.D)		33.71	85.83	32.42	9.88	t (70) = 0.58, p = .57
Academic year (M, S.D)		2	0.65	2	0.86	t (64.94) = 0.00, p = 1.00
Gender	Male	4	11.8%	8	21.1%	χ^2 (1) = 1.12, p = .29
	Female	30	88.2%	30	79.9%	
Immigrant status		12	35.3%	9	24.3%	χ^2 (1) = 1.02, p = .31
Base-line CCCQ scores		M	S.D	M	S.D	
Attitudes		3.32	0.84	3.46	0.98	F (4,66) = 2.16, p = 0.08
Knowledge		3.04	0.68	2.95	0.61	
Skills		3.11	0.83	3.47	0.73	
Encounters		3.58	0.74	3.53	0.76	

2.2 Procedure

The course was incorporated into existing academic courses and was delivered as a distant learning program. The intervention consisted of two sessions of 60 minutes, each integrated across the curriculum [35, 36]. The program included seven learning units: (1) Definitions of emergencies, (2) the unique challenges facing health services during emergencies, (3) introduction to cultural competency, (4) culturally competent attitudes, (5) culturally competent knowledge, (6) culturally competent skills, and (7) summary.

The control program- Incorporating the control program into the existing academic curricula required that the program provides relevant, educational content. As such, the first two control program units were identical to those of the intervention program (i.e., definitions of emergencies and the unique challenges facing health services during emergencies). The rest of the units focused on the social networks and aspects of community resilience during emergencies. The control program did not include any references to culture or cultural-competent care.

2.3 Measurements

Background variables- For each student, age, gender, academic program, academic year, and immigrant status were recorded.

Cultural Competency- To evaluate the pre-and post-intervention cultural competency of students, we used a modified version of the Clinical Cultural Competency Questionnaire (CCCQ) [37]. The original questionnaire was developed to assess physicians' provision of culturally competent healthcare to diverse patient populations. The questionnaire includes 63 items addressing four domains of cultural competence: attitudes (self -assessment of one's cultural values, beliefs, and behaviors, e.g., "Awareness of own racial, ethnic, or cultural stereotypes"), knowledge (search for knowledge about different cultural groups, e.g., "Knowledge on health disparities"), skills (the ability to accurately and thoroughly assess cultural need, e.g., "Providing culturally competent clinical preventive services"), and encounters (active engagement indirect interaction with different cultural groups, e.g., "Caring for patients from culturally diverse backgrounds "). The CCCQ was used in various cultural settings to measure the effectiveness of cultural competence training programs and demonstrated high reliability [38]. In the current study, the Cronbach's alphas (at T0 assessment)

were .76 for the attitudes domain, .79 for the knowledge domain, .88 for the skills domain, and .89 for the encounters domain. Cronbach's alpha for the total scale was excellent (.91).

3. Data Analyses

Based on previous findings regarding multicultural education [39, for meta-analysis], the expected effect size of the educational program was $d = 0.49$. Taking this estimation into account, the study required sample size of 35 pairs to achieve a power of 80% and a level of significance of 5%. To examine group differences in changes of CCCQ, we performed a two-way repeated-measures analysis of variance (ANOVA). CCCQ domains (attitudes, knowledge, skills, and encounters) and time (pre vs. post-intervention) were the within-subject factors, and group (intervention vs. control) was the between-subject factor. All multivariate analyses were followed by posthoc analyses with Bonferroni corrections for multiple comparisons. The Statistical Package for the Social Sciences (SPSS) version 26 [40] was used for data analyses.

4. Results

4.1 Baseline between-group comparisons

T-tests for independent samples and Chi-square tests were used to compare the two groups on baseline demographic characteristics. As seen in Table 1, no group differences were found in age, gender, academic year, and migration background. Group differences in baseline levels of cultural competence were examined using Univariate analysis of variance (ANOVA). No group differences were identified ($F(4,66) = 2.16, p = 0.08$).

4.2 Multivariate analysis of variance with repeated measures

To examine group differences in the four CCCQ domains, we performed two-way repeated-measures ANOVA (Table 2). Analyses revealed a main effect of domain, Wilks' Lamda value = 0.53, $F(3,67) = 20.21, p < .001$, and for time, Wilks' Lamda value = 0.612, $F(1,69) = 43.73, p < .001$. Post hoc analysis of the domain effect with Bonferroni correction for multiple comparisons indicated that regardless of their group affiliation (intervention vs. control) and of assessment time (pre-intervention vs. post-intervention), participants rated their culturally competent knowledge ($M = 3.23, S.D. = 0.06$) lower than their culturally competent skills ($M = 3.53, S.D. = 0.08$), and comfort ($M = 3.72, S.D. = 0.07$). In addition, participants rated their culturally competent skills lower than their comfort. No difference was found between participants' rates of their culturally competent attitudes ($M = 3.50, S.D. = 0.08$) and the other three CCQ domains.

Table 2
Group differences at base-line and post-intervention CCCQ scores

CCCQ domain	Intervention group (n = 34)		Control group (n = 38)		Between-group differences in post-intervention CCCQ*				
	Base-line	Post-intervention	Base-line	Post-intervention	Mean	S.D	Mean	S.D	
Attitudes	3.32	0.84	3.58	0.78	3.46	0.98	3.58	0.76	F (1,69) < 1
Knowledge	3.04	0.68	3.66	0.65	2.95	0.61	3.34	0.51	F (1,69) = 3.05, p = 0.02
Skills	3.11	0.83	3.84	0.77	3.47	0.73	3.71	0.69	F (1,68) = 3.33, p = 0.07
Encounters	3.58	0.74	4.00	0.65	3.53	0.76	3.80	0.65	F (1,69) = 1.77, p = 0.19
*With base-line CCCQ levels as covariates									

Post hoc analysis of the time effect with Bonferroni correction for multiple comparisons showed that regardless of their group affiliation (intervention vs. control) and of CCCQ domain, participants rated their cultural competence level higher in the post-intervention assessment (M = 3.69, S.D = 0.05) than in the pre-intervention assessment (M = 3.31, S.D = 0.06).

The two-way interaction between group and time was significant, Wilks' Lamda value = 0.934, $F(1,69) = 4.84$, $p = 0.03$ as well as the two-way interaction between group and domain, Wilks' Lamda value = 0.883, $F(3,66) = 2.96$, $p = 0.04$. The interaction between time and domain was also significant, Wilks' Lamda value = 0.882, $F(3,67) = 2.98$, $p = 0.04$. The three-way interaction group * time * domain was not significant, Wilks' Lamda value = 0.949, $F(3,67) = 1.45$, $p = 0.23$. The effect of group (between-subject factor) was not significant, $F(1,69) < 1$.

Inspection of the interaction plots (see Figs. 2–5), confirmed by univariate analysis for each CCCQ domain (with the baseline score of each domain as a covariate), revealed significant pre-/post- intervention improvement in the knowledge domain; $F(1,69) = 3.05$, $p = .024$ and a marginal effect on the skills domain; $F(1,68) = 3.33$, $p = 0.07$. No group differences were identified in the attitudes $F(1,69) < 1$ and the encounters domain; $F(1,69) = 1.77$, $p = .19$.

5. Discussion

Previous research has recognized the clinical and ethical imperative of considering socio-cultural contexts in developing healthcare interventions for various populations [41, 42]. The need for culturally sensitive interventions is especially crucial during and after an emergency due to the increased vulnerability of ethnic minorities and other underserved populations to disasters' physical, psychological, and economic effects [43]. Research examining cultural competence training programs suffered from methodological constraints, such as weak study designs (e.g., lack of RCTs), low or no reporting of consent rates, and non-validated measurement instruments, limiting rigorous evaluations on the effectiveness of interventions [3, 4].

The current study used a randomized controlled design to examine the effectiveness of an online intervention in increasing nursing students' cultural competence in emergencies.

Overall, our results supported the use of an online program incorporated in the curriculum for increasing students' cultural competence. Specifically, participants in the intervention group were more likely to report increased knowledge of socio-cultural characteristics, health disparities, and health risks experienced by particular racial and ethnic groups, as well as of alternative healing traditions and methods [44]. The effect of the intervention in increasing participants' ability

to translate this knowledge into their daily practice (skills) approached significance. However, participants did not present increased confidence (encounters) in their ability to empower patients from diverse backgrounds or increased awareness of their own cultural background, stereotypes, or biases. These findings are consistent with previous studies [45–47] and systematic reviews [48, 49] showing that cultural competence training is especially effective in facilitating cultural-competence knowledge. For instance, a systematic review of 16 studies by Jongen et al. [48] found that cultural competence training improved knowledge in 9 of 16 studies, skills in 7 of 16, attitudes/beliefs in 5 of 16 studies, and confidence in 5 studies.

Several explanations may be proposed but warrant further exploration. First, focused intervention programs incorporated in the curriculum context are more likely to enhance

the cognitive aspect of cultural competence (especially at the basic knowledge and understanding levels) than other domains. From an education perspective, culturally- diverse knowledge is easier to learn and teach than practical skills or attitudes (affective learning domain) [50]. Second, changes in culturally competent knowledge are easier to measure than changes in other domains [51]. The gains in culturally competent knowledge may also be attributed to the course delivery mode [48]. While different cultural competence training was delivered by professional trainers [45], sometimes from diverse backgrounds [46], our intervention was provided in two online sessions. Such delivery mode, especially in academic settings, may focus on the acquisition of facts rather than encouraging affective engagement or self-reflection. It is possible that longer courses that include active participation (e.g., students' presentations, classroom discussions, simulations) would increase the practical and affective domains of cultural competence.

A further explanation for our findings is related to the considerable overlap between the control and the intervention programs in content and structure. Given that the control program was incorporated within the curriculum, it was necessary to develop a course that consists of relevant educational content. The control program addressed the pivotal role of healthcare services during emergencies and emphasized the importance of social communication and networks. While not explicitly addressing culturally related topics, this program may encourage a patient-centered approach and promote sensitive and empathic attitudes among students. Indeed, our results showed that, compared to the pre-intervention assessment, both the intervention and the control groups showed an increase in their CCCQ scores. Such similarity between the intervention and control programs may explain why the culturally related knowledge was the most prominent gain from the intervention. Because most cultural competency training studies did not include a comparison group or used a non-intervention control group [3, for review], there is a need for a systematic investigation of what could be considered a "comparison condition." For example, Genao et al. [52], who examined a cultural competence curriculum for third-year medical students, presented a control program that included lectures on clinical preventive medicine, alternative medicine, and domestic violence, taught by faculty with expertise in those areas. This program, however, did not necessarily encourage a patient-centered approach, and therefore might be more distinguished from the intervention group than in our study.

The limited differences between the intervention and control group might also be attributed to the demographic nature of our sample, which consisted of a high proportion of immigrants (30%). Previous studies suggested that compared to white therapists, cultural and linguistically diverse professionals were more likely to be involved with ethnic minority communities, to use a cultural framework in their clinical practice, and to perceive their agencies as culturally sensitive [53]. Ethnic minority healthcare professionals often share patient's experiences of racism and prejudice [54], motivating them to provide more culturally competent care. It is possible that healthcare students of immigrant backgrounds were already aware of the importance of culturally- competent care and familiar with the concepts of cultural competence [55]. Therefore, the only effect of the intervention program was evident in the practical skills domain, where training was necessary.

Our findings provide further support for the usefulness of online learning in health education. Recent studies that examined the effects of online learning on nursing assessment skills and knowledge supported its effectiveness [56, for a systematic review], especially in facilitating practical skills [57]. Online learning was found to be effective in increasing medical capacity in rural settings and low- and middle-income countries, as it provides greater educational opportunities for students while simultaneously enhancing faculty effectiveness and efficiency [58]. Our study had several notable strengths. First, the study used a theory-based intervention that incorporates universal as well as local understating of crisis responses and resilience. Second, the current study is built on the model of methodological excellence in educational studies [59] that advocates for the use of blind RCTs with valid instruments and appropriate statistical analyses of subgroups. This research is also one of the few studies that examined the efficacy of cultural competence training programs outside the United States.

The reported findings should be considered under several limitations. First, this study relied on self-report measures of cultural competence and did not include an objective evaluation method, such as health outcomes [60, for a systematic review] or patient satisfaction [61, for a systematic review]. Self-report measures are also vulnerable to various biases, including social-desirability or response-shift bias, that may confound the intervention effect with bias recalibration [62]. Second, because the post-intervention assessment did not include a follow-up phase, it is difficult to determine whether the intervention's advantage would be stable over time. Third, because this study was based on healthcare students, our ability to generalize our results to other healthcare populations and setting is currently limited. Finally, due to the high attrition rate, the sample size was limited.

6. Conclusions

Immigration and the growth of multicultural societies have highlighted the need for culturally competent care worldwide, especially in times of emergencies. Our results encourage the development of future intervention programs that are based on a deep understanding of local needs and preferences and incorporate ethnographic cultural knowledge. Equally important is the usage of large-scale randomized controlled trials that would evaluate real-life, cultural competence and not only self-report measures. There is also a need to examine the applicability of cultural competence training programs to different emergencies and to adapt their content and structure to the specific needs of the disaster and the patient population.

Declarations

Ethical approval and consent to participate.

The study was approved by the Ethics Committee of the Education Department, Ben- Gurion University. The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Written informed consent was obtained from all individual participants included in the study.

Consent for publication.

Not applicable

Availability of data and materials.

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests:

The authors have no relevant financial or non-financial interests to disclose.

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Authors' contributions.

Conceptualization: [OC and OS], Methodology: [OC, OGC, and OS], Formal analysis and investigation: [YK, NC, and OGC], Writing - original draft preparation: [OC and OS]; Writing - review and editing: [YK, NC, and OGC], Funding acquisition: [OC and OS], Supervision: [OC and OS].

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References

1. Bullard R, Wright, B. *The wrong complexion for protection: How the government response to disaster endangers African American communities*. NYU Press; 2012.
2. S Department of Health and Human Services. Cultural and linguistic competency in disaster preparedness and response fact sheet. 2020. Available at: <https://www.phe.gov/Preparedness/planning/abc/Pages/linguistic-facts.aspx> Department of Human services
3. Clifford A, McCalman J, Brainbridgem R, Tsey K. Interventions to improve cultural competency in health care for Indigenous peoples of Australia, New Zealand, Canada and the USA: A systematic review. *Int J Qual Health Care*. 2015; 27: 89–98. Doi:10.1093/intqhc/mzv010
4. Truong M, Paradies Y, Priest, N. Interventions to improve cultural competency in healthcare: a systematic review of reviews. *BMC Health Ser Res*. 2014; 14: doi:10.1186/1472-6963-14-99
5. Sue DW, Bernier JB, Duran M, Feinberg L, Pedersen P. Position paper: cross-cultural counseling competencies. *Couns Psychol*. 1982; 10: 45–52. doi:10.1177/0011000082102008
6. Haupt B, Connolly Knox C. Measuring cultural competence in emergency management and homeland security higher education programs. *J Pub Aff Educ*. 2018; 24: 538-556, DOI: 10.1080/15236803.2018.1455124
7. Parisi V, Ahmed Z, Lardner D, Cho E. Global health simulations yield culturally competent medical providers. *Med Educ*. 2012; 46: 1126–1127. doi: 10.1111/medu.12012.
8. Stone J, Moskowitz GB. Non-conscious bias in medical decision making: what can be done to reduce it? *Med Educ*. 2011; 45: 768–776. doi: 10.1111/j.1365-2923.2011.04026.x.

9. Davidson TM, Price M, McCauley JL, Ruggiero KJ. Disaster impact across cultural groups: comparison of Whites, African Americans, and Latinos. *Am J Comm Psychol.* 2013; 52: 97–105. <https://doi.org/10.1007/s10464-013-9579-1>
10. Adams V. *Markets of sorrow, labors of faith: New Orleans in the wake of Katrina.* Durham, NC: Duke University Press; 2013.
11. Guha-Sapir D, Hoyois P, Below R. *Annual disaster statistical review 2012 the numbers and trends.* Centre for Research on the Epidemiology of Disasters (CRED). Institute of Health and Society (IRSS). Université catholique de Louvain; 2013.
12. Voulgaridou MG, Papadopoulos RK, Tomaras V. Working with refugee families in Greece: Systemic considerations. *J Fam Ther.* 2006; 28: 200–220. doi:10.1111/j.1467-6427.2006.00346.x
13. Morand S, Walther BA. Individualistic values are related to an increase in the outbreaks of infectious diseases and zoonotic diseases. *Sci Rep.* 2018; 8: doi:10.1038/s41598-018-22014-4
14. Centers for Disease Control and Prevention. *COVID-19*; 2020. Available at: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
15. Slobodin O, Cohen O. A culturally-competent approach to emergency management: What lessons can we learn from the COVID-19? *Psychol Trauma;* 2020; 12: 470–473. <http://dx.doi.org/10.1037/tra0000790>
16. Britton NR. Organized behavior in disaster: A review essay. *Int J Mass Emerg Disasters,* 1988; 6: 363-395
17. Fritz CE. Disasters. In Merton RK, Nisbet R, editors. *Social problems.* New York: Harcourt, Brace and World; 1961. p. 651-694
18. Schleussner C-F, Dongesa JF, Donnera RV, Schellhuber HJ. Armed-conflict risks enhanced by climate-related disasters in ethnically fractionalized countries. *Proc Natl Acad Sc.* 2016; 113: doi: 10.1073/pnas.1601611113
19. Silove D, Ventevogel P, Rees S. The contemporary refugee crisis: an overview of mental health challenges. *World Psychiatry.* 2017; 16: 130-139. doi: 10.1002/wps.20438.
20. Ghafoori B, Caspi Y, Salgado C, Allwood M, Kreither J, Tejada JL, Hunt T, ... Nadal, K. *Global Perspectives on the Trauma of Hate-Based Violence: An International Society for Traumatic Stress Studies Briefing Paper;* 2020. Available at: istss.org/hate-based-violence
21. Ward PR, Rokkas P, Cenko C, Pulvirenti M, Dean N, Carney S, Brown P, Calnan M, Meyer S. A qualitative study of patient (dis)trust in public and private hospitals: the importance of choice and pragmatic acceptance for trust considerations in South Australia. *BMC Health Ser Res.* 2015; 15: <https://doi.org/10.1186/s12913-015-0967-0>
22. Laine JS. *Cultural competence, emergency management and disaster response and recovery efforts among African Americans.* (Unpublished doctoral dissertation). Walden University, Minnesota; 2016. Available at: <https://scholarworks.waldenu.edu/dissertations/2189/>
23. Ezenkwele UA, Roodsari GS. Cultural competencies in emergency medicine: Caring for Muslim-American patients from the Middle East. *J Emerg Med.* 2013; 45: 168–174. doi: 10.1016/j.jemermed.2012.11.077
24. Jordans MJ, Tol WA, Komproe IH. Mental health interventions for children in adversity: Pilot-testing a research strategy for treatment selection in low-income settings. *Soc Sci Med.* 2011; 73: 456–466. doi:10.1016/j.socsc.2011.06.004
25. Slobodin O, Ghane S, de Jong TVM. Developing a culturally-sensitive mental health intervention for asylum seekers in the Netherlands. *Intervention, the International Journal for Mental Health, Psychosocial Support in Conflict.* 2018; 16: 86–94. doi:10.4103/INTV.INTV_2_18
26. International Association of Emergency Managers *Global administrative policies and procedures;* 2015. Available at: <http://www.iaem.com/page.cfm?p=about/code-of-ethics>

27. Moran GS, Russinova Z, Yim JY, Sprague C. Motivations of persons with psychiatric disabilities to work in mental health peer services: A qualitative study using self-determination theory. *J Occup Rehab.* 2014; 24: 32-41. doi: 10.1007/s10926-013-9440-2.
28. Ensari N, Christian J, Kuriyama DM, Miller N. The personalization model revisited: An experimental investigation of the role of five personalization-based strategies on prejudice reduction. *Group Process Intergroup Rel.* 2012; 15: 503–522. doi:10.1177/1368430211434576
29. Carrizales T. Exploring cultural competency within the public affairs curriculum. *J Public Aff Educ.* 2010; 16: 593–606. doi: 0.1080/15236803.2010.12001616
30. Padela AI, Puneekar IR. Emergency medical practice: Advancing cultural competence and reducing health care disparities. *Acad Emerg Med.* 2009; 16: 69–75. Doi:10.1111/j.1553-2712.2008.00305.x
31. Swathi JM, González PA, Delgado RC. Disaster management and primary health care: Implications for medical education. *Int J Med Educ.* 2017; 8: 414–415. doi:10.5116/ijme.5a07.1e1b
32. Papadopoulos I, Tilki M, Lees S. Promoting cultural competence in healthcare through a research-based intervention in the K. *Diversity and Health Social Care.* 2004; 1: 107–115. Available at: <https://diversityhealthcare.imedpub.com/promoting-cultural-competence-in-healthcare-through-a-research-based-intervention-in-the-uk.pdf>
33. Schulz KF, Altman DG, Moher D. CONSORT Group. CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *BMJ.* 2010; 340: doi: 10.1136/bmj.c332
34. Slobodin O, Clempert N, Kula Y. Cohen O. Educating health professionals for cultural competence in emergency situations: A study protocol for a randomized controlled trial. *J Adv Nurs.* 2020; 76: 380-386. doi: 10.1111/jan.14245
35. Carpenter R, Estrada CA, Medrano M, Smith A, Massie FS. A web-based cultural competency training for medical students: A randomized trial. *Am J Med Sci.* 2015; 349: 442–446. Doi: 1097/MAJ.0000000000000351
36. Sargent SE, Sedlak CA, Martsof DS. Cultural competence among nursing students and faculty. *Nurse Educ Today.* 2005; 25: 214-221. doi:10.1016/j.nedt.2004.12.005
37. Like RC. *Clinical cultural competency questionnaire (pre-training version)*. Center for Healthy Families and Cultural Diversity, Department of Family Medicine, UMDNJ-Robert Wood Johnson Medical School; 2001. Available at: http://rwjms.umdnj.edu/departments_institutes/family_medicine/chfcd/grants_projects/documents/Pretraining.pdf
38. Krajic K, Straßmayr C, Karl-Trummer U. Improving ethnocultural competence of hospital staff by training: Experiences from the European' Migrant-friendly Hospitals' project. *Divers Health Soc Care.* 2005; 2: 279–290. Available at: <https://insights.ovid.com/diversity-health-social-care/dhsc/2005/02/040/improving-ethnocultural-competence-hospital-staff/5/01212971>
39. Smith TB, Constantine MG, Dunn T, Dinehart J, Montoya JA. Multicultural education in the mental health professions: A meta-analytic review. *J Couns Psychol.* 2006; 53: 132–145. Doi:10.1037/0022-0167.53.1.132
40. IBM Corp. Released 2019. *IBM SPSS Statistics for Windows, Version 26.0*. Armonk, NY: IBM Corp
41. Tummala-Narra P. Working with immigrants and refugees in psychodynamic psychotherapy. In D. Kealy & J.S. Orgodinzuck. *Contemporary psychodynamic psychotherapy. Evolving clinical practice; 2019.* (pp. 281-294). Academic Press. p.281-294.
42. Slobodin O, de Jong J T. Mental health interventions for traumatized asylum seekers and refugees: What do we know about their efficacy? *Int J Soc Psychiatry.* 2015; 61: 17–26. doi:10.1177/0020764014535752
43. Bethel JW, Burke SC, Britt AF. Disparity in disaster preparedness between racial/ethnic groups. *Disaster Health.* 2013; 1, 110–116. Doi:10.4161/dish.270

44. VanZant, S. (2014). *Assessing multicultural knowledge, attitudes, skills and comfort: Medical education for a changing world*. Wright State University, Dayton, Ohio. Available at: <https://corescholar.libraries.wright.edu/mp/124/>
45. Brathwaite AC, Majumdar B. Evaluation of a cultural competence educational programme. *J Adv Nurs*.2006; 53: 470–479. doi:10.1111/j.1365-2648.2006.03742.x
46. Chapman R, Martin C, Smith T. Evaluation of staff cultural awareness before and after attending cultural awareness training in an Australian emergency department. *Int Emerg Nurs*. 2014; 22: 179–184. doi: 10.1016/j.ienj.2013.11.001.
47. McGuire AA, Garcés-Palacio IC, Scarinci IC. A successful guide in understanding Latino immigrant patients: an aid for health care professionals. *Family and Community Health*. 2012; 35: 76-84. Doi:1097/FCH.0b013e3182385d7c
48. Beach MC, Price EG, Gary TL, et al. Cultural competence: a systematic review of health care provider educational interventions. *Med Care*. 2005;43:356-373. doi:10.1097/01.mlr.0000156861.58905.96
49. Jongen C, McCalman J, Bainbridge R. Health workforce cultural competency interventions: a systematic scoping review. *BMC Health Ser Res*. 2018; <https://doi.org/10.1186/s12913-018-3001-5>
50. Jeffreys MR, Dogan E. Evaluating the Influence of Cultural Competence Education on Students' Transcultural Self-Efficacy Perceptions. *J Transcult Nurs*. 2012; 23: 188-197. doi:1177/1043659611423836
51. Oermann MH, Gaberson KB. (2009). *Evaluation and testing in nursing education* (2nd ed.). Springer.
52. Genao I, Bussey-Jones J, St George DM, Corbie-Smith G. Empowering students with cultural competence knowledge: randomized controlled trial of a cultural competence curriculum for third-year medical students. *J Natl Med Assoc*. 2009; 101: 1241-1246. DOI: 1016/s0027-9684(15)31135-4
53. Berger LK, Zane N, Hwang WC. Therapist ethnicity and treatment orientation differences in multicultural counseling competencies. *As Am J Psychol*. 2014; 5: 53–65. Doi: 10.1037/a0036178
54. Johansson P, Jones DE, Watkins CC, Haisfield-Wolfe ME, Gaston-Johansson F. Physicians' and nurses' experiences of the influence of race and ethnicity on the quality of healthcare provided to minority patients, and on their own professional careers. *J Natl Black Nurs Assoc*. 2011; 22, 43-46.
55. Greatrex-White S. Uncovering study abroad: foreignness and its relevance to nurse education and cultural competence. *Nurse Educ Today*.2008; 28: 530-538. DOI: 10.1016/j.nedt.2007.09.005.
56. Rouleau G, Gagnon MP, Côté J, Payne-Gagnon J, Hudson E, Dubois CA, Bouix-Picasso J. (2019). Effects of E-Learning in a continuing education context on nursing care: Systematic review of systematic qualitative, quantitative, and mixed-studies reviews. *J Med Internet Res*.2019; 15118. doi: 10.2196/15118.
57. McDonald EW, Boulton JL, Davis JL. E-learning and nursing assessment skills and knowledge—An integrative review. *Nurse Educ Today*.2018; 66: 166-174. doi: 10.1016/j.nedt.2018.03.011. E
58. Frehywot S, Vovides Y, Talib Z, Mikhail N, Ross H, Wohltien H, Bedada S, Korhumel K., Koumare AK, Scott J. (2013). E-learning in medical education in resource constrained low- and middle-income countries. *Hum Resour Health*, 11, 4. Doi:10.1186/1478-4491-11-4
59. Reed DA, Cook DA, Beckman TJ, Levine RB, Kern DE, Wright SM. Association between funding and quality of published medical education research. *J* 2007; 298: 1002–1009. DOI: 10.1001/jama.298.9.1002
60. Lie DA, Lee-Rey E, Gomez A, Bereknyei S, Braddock CH. 3rd. Does cultural competency training of health professionals improve patient outcomes? A systematic review and proposed algorithm for future research. *J GenIntern Med*. 2011; 26: 317–25. doi: 10.1007/s11606-010-1529-0.
61. Govere L, Govere EM. How Effective is Cultural competence training of healthcare providers on improving patient satisfaction of minority groups? A systematic review of literature. *Worldviews Evid Based Nurs*. 2016; 13:402-410.

Figures

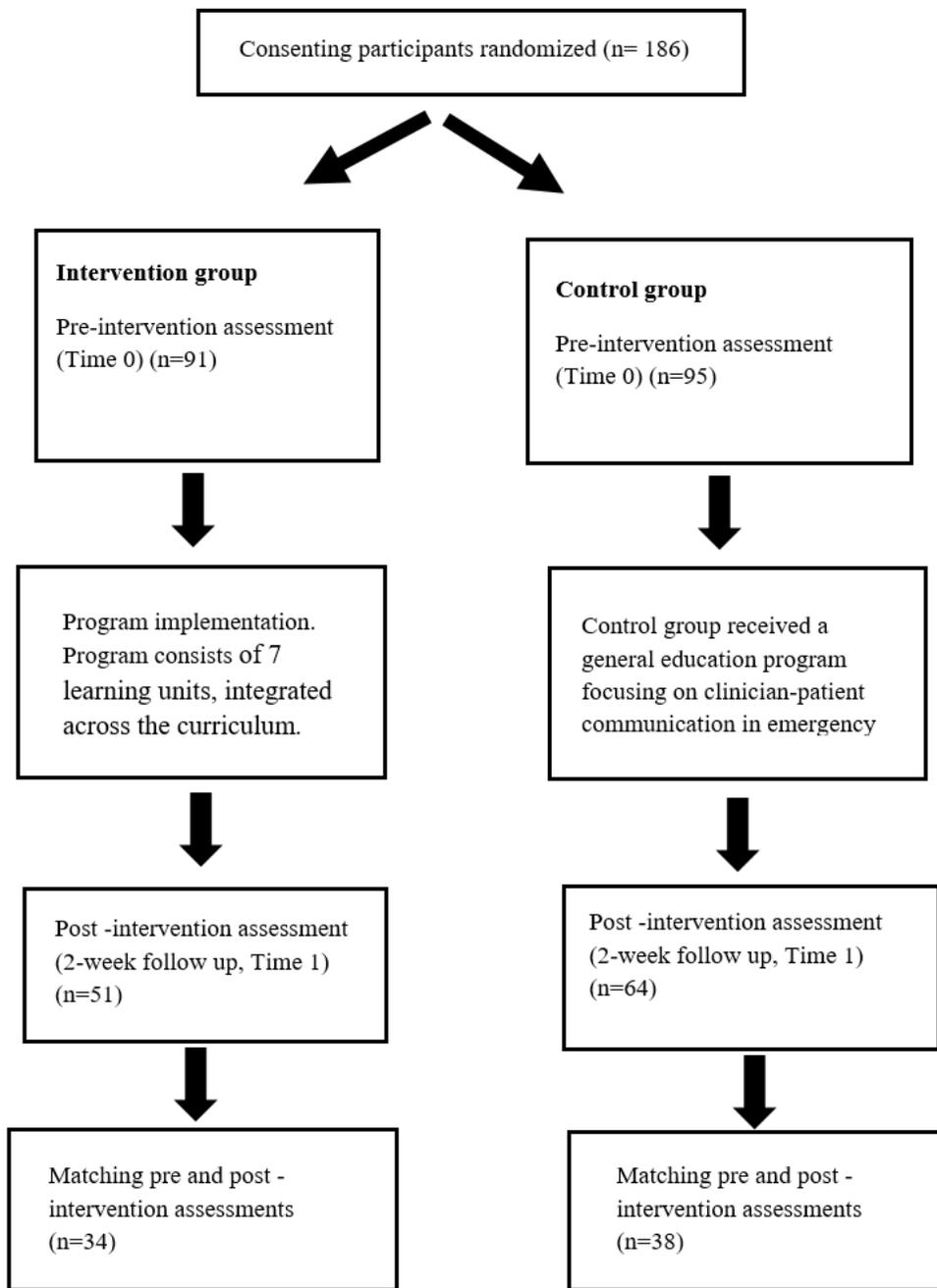


Figure 1

A flow chart of the study methodology and processes

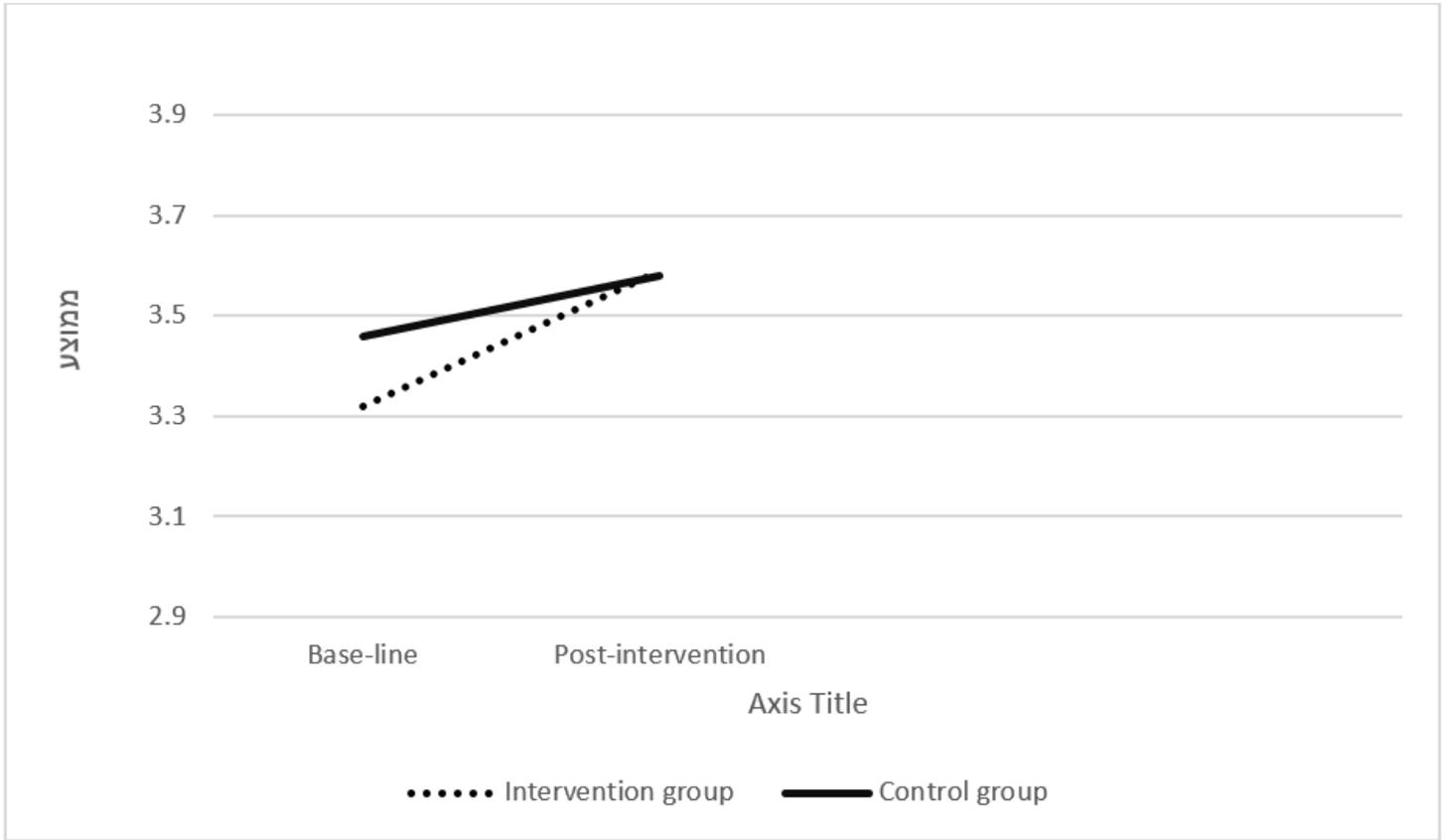


Figure 2

Group differences in the culturally competent attitudes

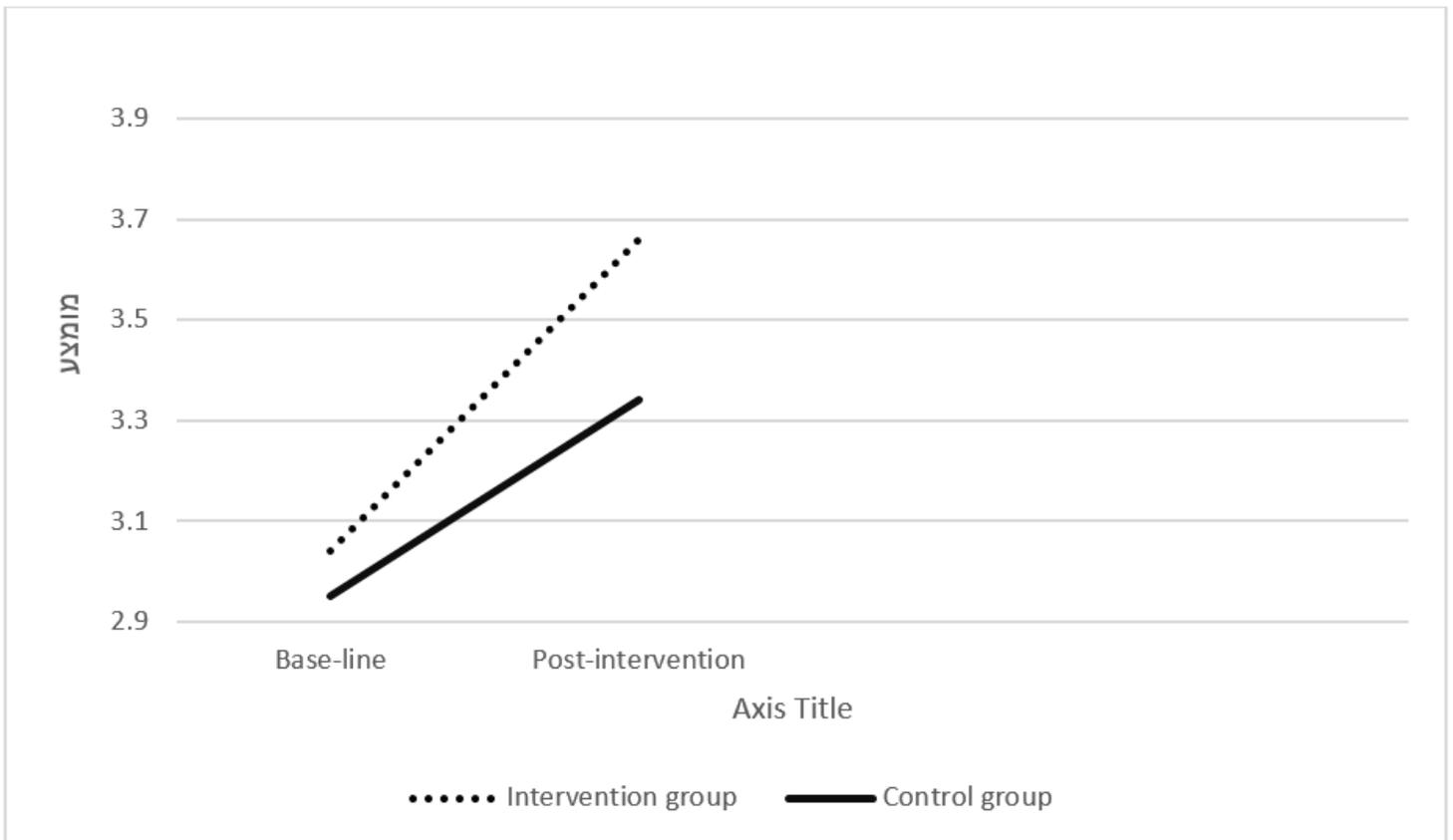


Figure 3

Group differences in the culturally competent knowledge

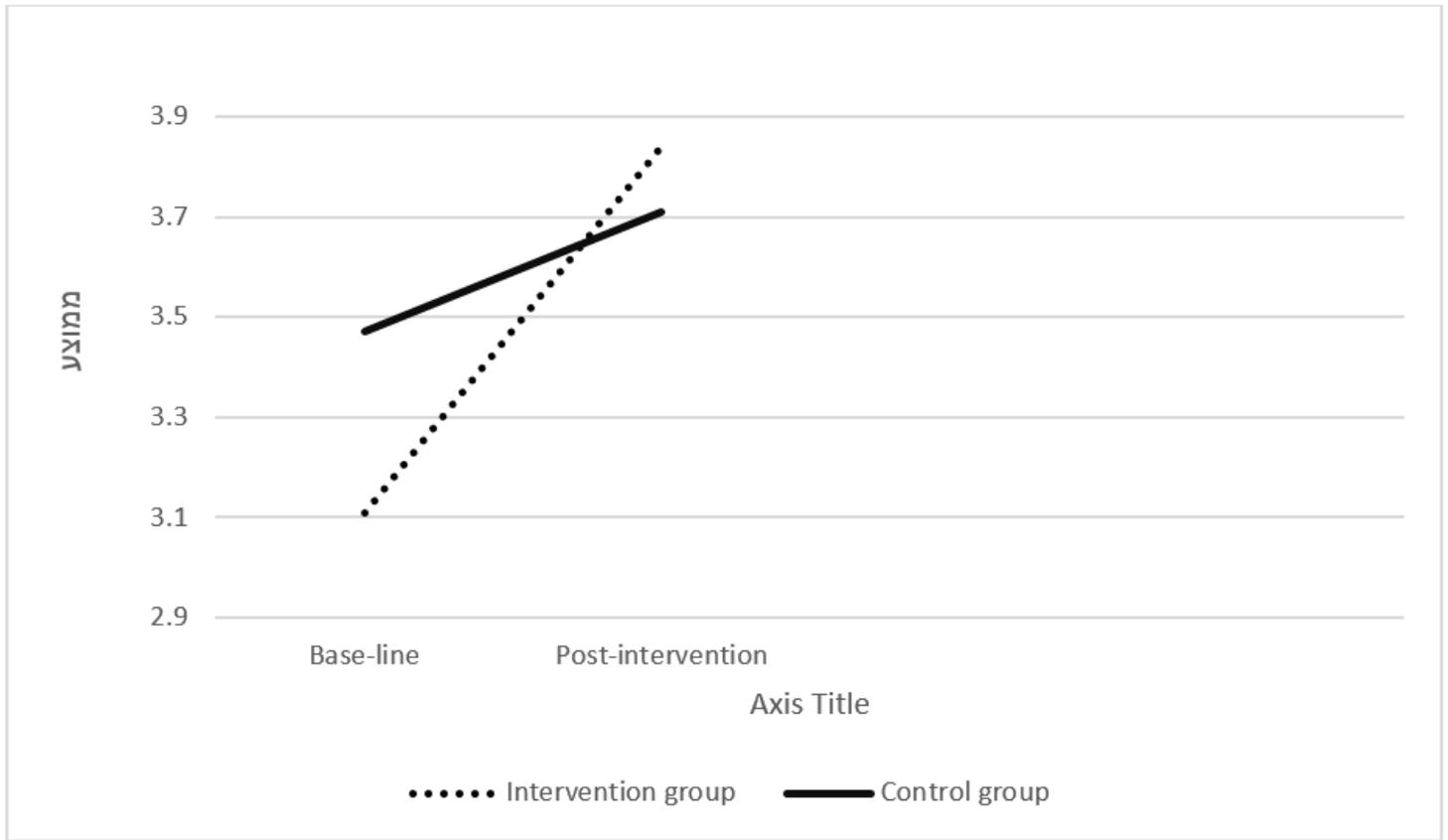


Figure 4

Group differences in the culturally competent skills

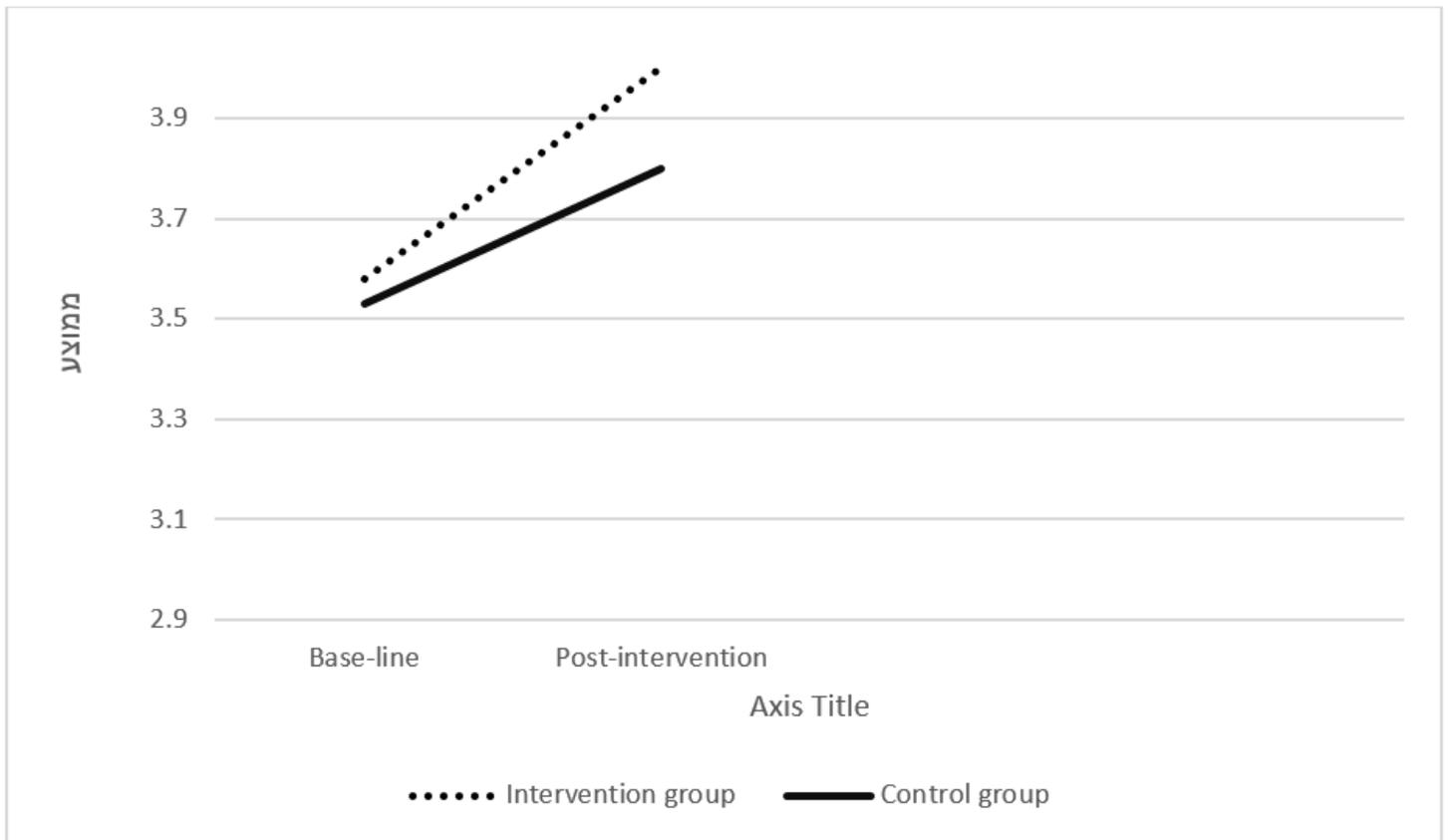


Figure 5

Group differences in the culturally competent encounters

Supplementary Files

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- [CONSORT2010Checklist.doc](#)