

Impact of Cultural Competency Training in Naturopathic Medical Students: Self-Assessed Changes in Awareness, Knowledge, Skills, and Attitudes



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ABSTRACT

Introduction: Cultural competency training is a growing requirement in medical schools across North America. Although accredited naturopathic medical schools now include some elements of cultural competency training throughout their programs, no literature to date has evaluated the effect of cultural competency curriculum among naturopathic medical students. This study evaluated the impact of a cultural competency training program of 4th-year naturopathic medical students at an accredited naturopathic medical educational institution in North America.

Methods: Pre- and post-training online surveys were completed by naturopathic medical students using a 1 to 5 numerical scale (least to most confident), self-evaluating their awareness, knowledge, skills, and willingness to change behaviours, with some survey items adapted from the short version of the Cross-Cultural Care Survey (Harvard). Descriptive statistics were calculated, and a paired two-sided Wilcoxon signed-rank test was used to examine changes between pre- and post-training responses.

Results: Out of 134 students enrolled in the training, 46 participants completed both the pre- and post-training surveys and were included in the final analysis. There was a statistically significant increase in self-rated confidence from pre- to post-training across all individual survey items spanning improvements in cultural competency awareness, knowledge, skills, and attitudes among students who completed both surveys.

Conclusions: Results from this study indicate that cultural competency training of naturopathic students may improve their subjective assessment of their awareness, knowledge, skills, and attitudes related to working with diversity in clinical practice. Future research would benefit from using validated assessment scales, reducing loss to follow up, and investigating factors such as social demographics, prior training, and lived experience amongst participants.

Key Words Medical education, anti-racism, anti-oppression, cross-cultural care, professionalism, diversity, health equity, DEI

INTRODUCTION

Cultural competency is an intervention-based approach focused on building skills, knowledge, and attitudes that allows people, in particular health professionals, to work respectfully and effectively with people from other cultural, religious, racial, or other demographic backgrounds. It was developed primarily in response to the recognition that implicit bias and barriers exist between healthcare providers and patients that both perpetuate and propagate health inequities.¹ As a result of the growing understanding of the impact of physician bias on healthcare providers' performance and patient health outcomes, cultural competency is now considered one of the main core competencies for entering medical students.² It has therefore increasingly become a key aspect of medical education in schools across North America to better prepare health professionals to deliver care that is patient-centred,

acknowledges the health impacts associated with social determinants, and seeks to redress existing health disparities related to racial, socioeconomic, and other demographic sociocultural and historical inequities.³

In North America, cultural competency training is included as a requirement in many medical schools; however, training is not standardized and varies significantly depending on the school.⁴ Training typically includes material intended to increase cultural awareness, develop an understanding of cultural differences, and teach specific strategies for adapting healthcare delivery and communication. Interventions range from skills-based approaches with prescriptive "do's and don'ts" to deeper analyses of physician bias and the institutional and structural sociocultural barriers to health care.⁵ In spite of significant heterogeneity that exists between learning objectives, curriculum content, delivery of the

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To cite: Gilbert C, Cardozo V, Vedadi H. Impact of cultural competency training in naturopathic medical students: self-assessed changes in awareness, knowledge, skills, and attitudes. *CAND Journal*. 2021;29(2):18-24. <https://doi.org/10.54434/candj.113>

Received: 27 February 2022; **Accepted:** 28 April 2022; **Published:** 28 June 2022

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training, and methods of evaluating efficacy, medical schools across North America have worked to incorporate cultural competency training into their programs, using a variety of practical interventions, and workshops.^{6,7}

Measuring Efficacy of Cultural Competency Training

Measuring the effectiveness of these programs presents its own specific challenges, as there are many different instruments currently in use to measure the outcomes of the interventions used in cultural competency training.⁸⁻¹¹ The most common validated instruments used in the training of medical professionals include the Tool for Assessing Cultural Competence Training (TACCT), Health Beliefs and Attitudes Survey (HBAS), Trans-cultural Self-Efficacy Tool (TSET), Cultural Self-Efficacy Scale (CSES), and the Cross-Cultural Care Survey (CCCS).^{1,7,10,12-20}

Developed by the Liaison Committee on Medical Education (LCME), the TACCT was introduced, and later shortened and validated, in order to evaluate curricula but is not appropriate for individual use.^{14,21} The HBAS assesses attitudes towards how cultural competency relates to healthcare quality but does not measure knowledge, preparedness, or skills.^{15,16} Both the TSET and CSES are geared towards nurses. The TSET is a lengthy tool with 83 items and not readily available for use, while the CSES assesses confidence in caring for members of limited, specific cultural groups.^{17,18} The CCCS, originally developed for medical residents, has been shortened and adapted for medical students, and it measures identification of training received as well as attitudes, skills, and preparedness in working to deliver cross-cultural care.^{16,19,20} The heterogeneity in the measurement tools used in different studies makes it challenging to objectively assess the outcome of cultural competency training when reviewing the literature.¹²

There is some evidence to indicate that cultural competency interventions used to train healthcare providers can improve patient satisfaction, health outcomes, communication, and healthcare access.^{1,5,11,22,23} Beach et al. included 34 studies in a review of cultural competency training interventions, finding improvement in health professional knowledge, attitudes and skills, as well as patient satisfaction.²² A Cochrane review included five randomized controlled trials (RCTs) to assess the effects of cultural competency training on patient outcomes, health professional outcomes, and healthcare organization outcomes. Although studies were generally of poor methodological quality and heterogeneous, results pointed towards positive evidence showing improvements in patient satisfaction and involvement of cultural and linguistically diverse patients.⁵ Govere and Govere conducted a systematic review, likewise concluding that cultural competency training improves healthcare professionals' competency in treating patients from minority groups, also using patient satisfaction as the primary outcome measure.¹²

The cultural competency training and its effects on health care have also been studied in other healthcare professional students, such as dental and physician assistant and midwifery students.²⁴⁻²⁶ Overall, data point to the benefits of integrating cultural competency training into the curriculum to positively influence cultural competency in healthcare professional students.^{25,27}

Cultural Competency Training in Naturopathic Medical Students

Naturopathy is a distinct multimodal system of traditional and complementary medicine (T&CM) recognized by the World Health Organization, defined by core therapeutic modalities and philosophical principles that bridge traditional and biomedical approaches to clinical practice and patient care.²⁸ In North America, naturopathic medical education is a standardized, accredited system with consistent training competencies leading to licensure with a defined scope of practice in regulated jurisdictions.²⁹ Unfortunately, research is lacking on the effects of cultural competency training for naturopathic medical students. There are no validated and standardized assessment tools designed to measure the outcome of cultural competency training for naturopathic medical students. Exercising cultural safety, respecting cultural diversity and addressing cultural and social determinants of health are among the core competencies of graduating naturopathic students, according to the Association of Accredited Naturopathic Medical Colleges' (AANMC) guidelines.³⁰ Licensed naturopathic doctors must also practice in accordance with ethics and jurisprudence legislation specific to their state/provincial licensing requirements as well as relevant federal law. There are currently no publications detailing cultural competency training provided within accredited naturopathic medicine schools in North America nor any studies investigating the impact of such training.

This study aims to begin to fill some of these gaps by evaluating the effects of cultural competency training on naturopathic students' subjective rating of their self-reported confidence in working with diversity in naturopathic clinical practice through the use of pre- and post-training surveys.

METHODS

Participants

Participants included naturopathic students at the beginning of their 4th year of study at the Toronto Campus of the Canadian College of Naturopathic Medicine (CCNM). There were 134 students enrolled in the mandatory course shell on the online learning platform used by the institution for all courses. Participants included naturopathic students who were enrolled in both the 4-year full-time Doctor of Naturopathy degree program as well as those enrolled in the 2-year IMG (International Medical Graduate) bridge delivery program. Demographic characteristics of participants were not included in the current study, and information about general student demographics is not currently collected by the institution.

Description of Training

Cultural competency training was delivered both asynchronously and synchronously through a combination of existing online training, live facilitated Zoom sessions, readings, videos, and discussion forums over 6 weeks in the summer of 2021. After completion of the pre-training survey, students individually completed the Stanford Unconscious Bias in Medicine online, uploading

their certificate of completion into an online assignment submission folder. Other relevant required readings and videos were posted to the online course shell to be completed prior to the first session, as well as additional material provided for asynchronous self-study throughout the 6 weeks. Three 2-hour facilitated, virtual synchronous training sessions focused on transformational learning through the use of reflective exercises, discussion, polling, annotations, and problem-based learning in breakout rooms and focused didactic teaching over Zoom. If students missed one or more of these sessions, they were expected to view the recordings. Learning was supported by short review quizzes and discussion forums on relevant topics after each synchronous session.

Although students are expected to complete all the material on the course shell, there is no numerical evaluation or grading assigned. Additionally, there are currently no academic consequences for incomplete review of the material, lack of participation, or failure to attend synchronous sessions or view recorded sessions.

It is important to note that we use certain terminology in the naming of the training as well as our reporting of results. We primarily use the term “cultural competency” as it is consistent with the terminology used to describe training in most medical schools and comparable research literature. However, it should be noted that there is significant and valid criticism of this term and associated approaches to training.^{6,31,32} Within the naturopathic educational institution, the term “cultural competency” is often used to describe the training; however, the course coordinator and facilitator of the synchronous sessions developed the sessions and training materials based on an anti-racism anti-oppression framework.^{33,34} Information is also provided about other commonly used terms, including cultural competency, cultural safety, and cultural humility throughout the training to complement and explore concepts related to privilege, positionality, oppression, bias, discrimination, harassment, and health inequities.

Pre- and Post-Training Surveys

Voluntary pre- and post-training surveys were conducted online using an 18-item 5-point linear numeric scale (least confident to most confident) to assess self-reported awareness, knowledge, skill, and attitudes across 18 competencies (Table 1).

The survey included items adapted from the preparedness section of the Cross-Cultural Care Survey (CCCS), a validated tool used to assess attitudes of cultural competency in medical students and residents across a range of specialties. Permission to use and adapt the survey was obtained from Maria Chun, PhD, omitting items on the use of alternative/complementary medicine and distrust of the US health system.^{19,20} In addition, the survey included questions specific to the learning objectives of the training program that were not derived or adapted from the CCCS. The overall survey included questions evaluating awareness and knowledge of key concepts related to cultural competency, preparedness to work with patients from diverse populations, and attitudes towards changes in behaviour, programs, policies, and procedures.

Both pre- and post-training surveys were distributed and delivered online through the online course shell developed exclusively for

the cultural competency training. Announcements of both the pre- and post-training surveys and links to complete them were listed at the top of the online course shell and in the course announcements which are sent via email to all enrolled students. Individual responses were anonymous to encourage honest participation.

The post-training survey was available online immediately after the last synchronous session with reminders to complete the survey 2 and 4 weeks later, respectively. No incentive was provided to complete the surveys nor any of the training material. Our study protocol was deemed exempt by the Canadian College of Naturopathic Medicine’s Research Ethics Review Board.

Data Analysis

Survey data were collected to analyze potential changes in self-assessed cultural competency between participants’ pre- and post-training responses. Descriptive statistics were calculated for each individual item of both pre- and post-training surveys. Given the ordinal nature of the linear numeric scale items and the non-parametric distribution of the responses, a paired two-sided Wilcoxon signed-rank test was used to examine changes in pre- and post-training responses. Significance was set to $p < 0.05$. The data were analyzed using Microsoft Excel with XLSTAT 2022.1.1.³⁵

RESULTS

Prior to the first synchronous session when the survey closed, 114 participants completed the pre-training survey (response rate of 85%). Fifty participants completed the post-training survey (43.9% of pre-training survey respondents). However, one of the post-training survey participants did not complete all the survey questions and their data was excluded from analysis. Four participants completed the post-training survey but not the pre-training survey; their results were also excluded from analysis. The pre-post analysis evaluated the scores of the 46 participants who completed both pre- and post-training surveys.

Individual baseline (pre-training, $n = 114$) survey scores spanned the full range of the linear numeric scale (1 = least confident, 5 = most confident) for 12 items (67%) and ranged from 2 to 5 for the remaining 6 items (33%) (Table 1). The lowest mean score at baseline was related to a skill-based competency, “Apply techniques for identifying unconscious bias and addressing the challenges it creates” ($M = 3.10$), closely followed by a knowledge-based competency “Describe the relationship between intent and impact in unconscious bias.” ($M = 3.11$). On the other hand, the highest mean scores were all related to attitudes “Willingness to shift my language to accommodate its impact on others” ($M = 4.36$), “Willingness to advocate for programs, policies and procedures that challenge systemic oppression” ($M = 4.19$), and “Willingness to challenge behaviours, programs, policies and procedures that reinforce systemic oppression” ($M = 4.18$).

Similarly, the lowest mean pre-training score for the paired data ($n = 46$), was for “Apply techniques for identifying unconscious bias and addressing the challenges it creates” ($M = 3.06$), followed by “Work with patients who are new immigrants or refugees” ($M = 3.11$) and “Work with patients whose religious beliefs or

Table 1. Baseline pre-training survey scores ($n = 114$).

Survey Item	Range	Mean (SD)	Median (IQR)
Awareness of my own personal culture and how it affects my perceptions of others.	(2–5)	4.01 (0.723)	4 (1)
Awareness of how I live with my privilege and my oppression.	(2–5)	3.85 (0.767)	4 (1)
Describe the effects of unconscious bias, stereotyping, systemic discrimination, and microaggressions in clinical care, clinic operations, and the educational environment.	(1–5)	3.32 (0.886)	3 (1)
Describe the relationship between intent and impact in unconscious bias.	(1–5)	3.11 (0.935)	3 (1.25)
Identify behaviours that ought to be known to be unwelcome.	(2–5)	3.95 (0.881)	4 (2)
Identify personal assumptions, biases, world views, and behaviours that impact my environment and myself.	(2–5)	3.91 (0.759)	4 (1)
Work with diverse populations and navigate the impact of culture and systemic discrimination.	(1–5)	3.47 (1.01)	3 (1)
Work with patients from cultures and/or religions different than your own.	(1–5)	3.71 (0.957)	4 (1)
Work with patients with limited English proficiency.	(1–5)	3.19 (1.128)	3 (2)
Work with patients who are new immigrants or refugees.	(1–5)	3.28 (1.101)	3 (2)
Work with patients who are LGBTQ2S+.	(1–5)	3.37 (1.041)	4 (1)
Work with patients living with disabilities.	(1–5)	3.42 (1.021)	3 (1)
Work with patients whose religious beliefs or cultural customs might affect clinical care.	(1–5)	3.17 (1.080)	3 (2)
Apply techniques for identifying unconscious bias and addressing the challenges it creates.	(1–5)	3.10 (0.959)	3 (2)
Address behaviours of others that reflect bias and create an unhealthy work/study/care environment.	(1–5)	3.44 (0.893)	4 (1)
Willingness to shift my language to accommodate its impact on others.	(1–5)	4.36 (0.832)	5 (1)
Willingness to challenge behaviours, programs, policies, and procedures that reinforce systemic oppression.	(2–5)	4.18 (0.868)	4 (1)
Willingness to advocate for programs, policies, and procedures that challenge systemic oppression.	(2–5)	4.19 (0.819)	4 (1)

SD = standard deviation; IQR = interquartile range. Linear numeric scale: 1 = least confident, 5 = most confident

cultural customs might affect clinical care” ($M = 3.24$) (Table 2). The highest mean pre-training scores for the paired data corresponded to highest scoring items for the entire baseline: “Willingness to shift my language to accommodate its impact on others” ($M = 4.37$), “Willingness to advocate for programs, policies and procedures that challenge systemic oppression” ($M = 4.20$), and “Willingness to challenge behaviours, programs, policies, and procedures that reinforce systemic oppression” ($M = 4.17$).

The paired two-sided Wilcoxon signed-rank test ($n = 46$) revealed a statistically significant increase in self-rated confidence across all individual items ($p < 0.05$) between the pre-training and post-training survey responses (Table 2). The largest pre–post training change was an improvement in confidence with being able to “Describe the relationship between intent and impact in unconscious bias” ($Z = -5.04$, $p < 0.05$) with a mean difference of 1.13, a median increase of 1 point, p ; the smallest improvement in pre-post confidence levels was in “Willingness to shift my language to accommodate its impact on others” with a mean difference of 0.28 and equal pre–post median ($Mdn = 5$).

DISCUSSION

Results of this study showed that cultural competency training of naturopathic students significantly improves their subjective confidence rating of items related to: their awareness of how positionality, privilege and bias impact social relations; knowledge about the effects of bias and discrimination in naturopathic medicine; skills such as working with patients who are LGBTQ2S+; and attitudes including willingness to change their own behaviour and advocate for social change.

While numerous studies have evaluated the efficacy of cultural competency training for medical students, residents, nurses, and other regulated healthcare providers,^{5,10,22,36–39} few studies exist that evaluate training and/or curriculum amongst T&CM students. In a study investigating naturopathic medicine, traditional Chinese medicine, and integrative medicine research student perceptions of diversity and institutional cultural climate, Tippens et al. noted that very few (30.9%) students reported that their school’s curriculum included information on working effectively with patients of diverse backgrounds.⁴⁰ Amongst naturopathic medicine students specifically, Hourston et al. reported year-over-year improvements in self-reported comfort working with patients living with disabilities, noting the importance of improving disability education in order to improve competency.⁴¹ The current study, however, is the first to examine the impact of more comprehensive cultural competency training among naturopathic students in North America.

The current research has several limitations, including the use of non-validated survey items, the self-report style of the survey tool, the potential for selection bias, and the absence of participant demographic data. As such, the results of this study should be interpreted with caution and the generalizability of the findings is limited.

In particular, the pre- and post-training survey questionnaire was designed to evaluate the program learning objectives as well as student cultural competency and used a single linear numerical scale for all items, which adapted the question stem and Likert scale groupings used in the CCCS – short form.^{19,20} As a result, the survey items utilized were not validated. Future research would benefit from inclusion of a greater number of items from the

Table 2. Changes in cultural competency scores between pre- and post-training ($n = 46$)

Survey Item	Pre-Training		Post-Training		Wilcoxon Signed-Rank Test	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Test statistic (Z)	p
Awareness of my own personal culture and how it affects my perceptions of others.	4.02 (0.745)	4 (1.75)	4.43 (0.501)	4 (1)	-3.19	<0.05
Awareness of how I live with my privilege and my oppression.	3.91 (0.725)	4 (0.75)	4.39 (0.577)	4 (1)	-3.76	<0.05
Describe the effects of unconscious bias, stereotyping, systemic discrimination, and microaggressions in clinical care, clinic operations, and the educational environment.	3.45 (0.935)	3.5 (1)	4.37 (0.610)	4 (1)	-4.82	<0.05
Describe the relationship between intent and impact in unconscious bias.	3.26 (0.929)	3 (1)	4.39 (0.649)	4 (1)	-5.04	<0.05
Identify behaviours that ought to be known to be unwelcome.	3.78 (1.031)	4 (2)	4.39 (0.614)	4 (1)	-3.68	<0.05
Identify personal assumptions, biases, worldviews, and behaviours that impact my environment and myself.	3.80 (0.859)	4 (1)	4.35 (0.640)	4 (1)	-3.67	<0.05
Work with diverse populations and navigate the impact of culture and systemic discrimination.	3.43 (1.109)	3 (1)	4.24 (0.705)	4 (1)	-4.36	<0.05
Work with patients from cultures and/or religions different than your own.	3.65 (1.037)	4 (1)	4.22 (0.814)	4 (1)	-3.41	<0.05
Work with patients with limited English proficiency.	3.20 (1.240)	3 (2)	3.76 (0.822)	4 (1)	-3.09	<0.05
Work with patients who are new immigrants or refugees.	3.11 (1.215)	3 (2)	3.93 (0.929)	4 (2)	-4.23	<0.05
Work with patients who are LGBTQ2S+.	3.46 (1.005)	4 (1)	4.20 (0.806)	4 (1)	-4.46	<0.05
Work with patients living with disabilities.	3.48 (0.983)	3 (1)	4.07 (0.772)	4 (1)	-3.59	<0.05
Work with patients whose religious beliefs or cultural customs might affect clinical care.	3.24 (1.079)	3 (2)	4.00 (0.730)	4 (1.5)	-4.00	<0.05
Apply techniques for identifying unconscious bias and addressing the challenges it creates.	3.06 (1.020)	3 (2)	4.11 (0.849)	4 (1)	-4.51	<0.05
Address behaviours of others that reflect bias and create an unhealthy work/study/care environment.	3.37 (0.928)	3 (1)	4.22 (0.696)	4 (1)	-4.61	<0.05
Willingness to shift my language to accommodate its impact on others.	4.37 (0.771)	5 (1)	4.65 (0.482)	5 (1)	-2.48	<0.05
Willingness to challenge behaviours, programs, policies, and procedures that reinforce systemic oppression.	4.17 (0.902)	4 (1)	4.54 (0.585)	5 (1)	-3.10	<0.05
Willingness to advocate for programs, policies, and procedures that challenge systemic oppression.	4.20 (0.906)	4 (1)	4.50 (0.658)	5 (1)	-2.63	<0.05

SD = standard deviation; IQR = interquartile range. Linear numeric scale: 1 = least confident, 5 = most confident

CCCS – short version, as well as adherence to the question stem wording and Likert scale groupings.

Further limitations relate to the self-report style of the survey tools themselves, which may be an unreliable outcome measure of professional competency.⁷ Some research suggests that training and self-reported preparedness may not necessarily translate into the application of knowledge, skills, and attitudes within clinical practice settings. Patient-centred outcomes, satisfaction, and other quality indicators may provide more accurate metrics of training efficacy, allowing for greater longitudinal evaluation of cultural competency education.^{5,12}

Moreover, there was a relatively large proportion of participants who completed the pre-training survey (44%) but did not complete the post-training survey, introducing the potential for selection bias. In particular, it is possible that students who completed both pre- and post-training surveys were more interested and engaged with the material presented during the training and, as a result, more likely to engage in self-reflection and growth (exhibiting a greater change

in awareness, knowledge, skills, and willingness to change their attitudes) than those who did not complete the post-training survey. In turn, participant self-selection may have inflated the effect size, limiting the significance of findings. Future program evaluation studies would benefit from tracking whether students completed all the elements of the training and measuring their level of engagement and participation in the training. In addition, survey completion could be incentivized or made mandatory as part of coursework to improve the response rate of the post-training survey and decrease the potential for selection bias.

Furthermore, the absence of sociodemographic survey questions and information about lived experiences of discrimination and prior training of the participants in the current study limits the generalizability and transferability of the findings. Interestingly, in studies examining the impact of sociodemographic factors on implicit bias and patient outcomes, research has demonstrated that a physician's gender and race may impact the extent of their implicit bias.⁴²⁻⁴⁵ Prior work, lived experiences of

discrimination, and previous social contacts with people of different races, ethnicities and genders, or lack thereof, can also affect a healthcare provider's degree of implicit bias. For example, several studies have shown that physicians of colour and/or female physicians demonstrate significantly less implicit bias compared with their peers who are White and/or men.⁴²⁻⁴⁴ Recent research has confirmed these findings, showing that implicit biases are less prominent in female physicians, and that cultural competency training has a positive effect on reducing physicians' unconscious biases in general.⁴⁵ Hence, being able to describe the sociodemographic characteristics, prior experiences of oppression, as well as prior training of the participants, would improve generalizability and transferability of the findings.

CONCLUSIONS

Findings from this study reveal that cultural competency training of naturopathic medicine students may improve self-reported perception of awareness, knowledge, skills, and attitudes related to working with diverse patients and populations. The results of this study provide a baseline with which program evaluation at other naturopathic medicine educational institutions and future programs can be compared. Future research should attempt to replicate these findings with improved survey design and collection of demographic data to assess whether sociodemographic factors impact the efficacy of cultural competency training of naturopathic medicine students.

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ACKNOWLEDGEMENTS

Special thanks to Douglas Stewart of Competence Consultants & Associates for developing the overall cultural competency training and facilitating the synchronous online training sessions.

CONFLICTS OF INTEREST DISCLOSURE

We have read and understood the *CAND Journal's* policy on conflicts of interest disclosure and declare the following interests: CG has received fees from CCNM for coordinating and facilitating the cultural competency training described in this study. Neither HV nor VC have any conflicts to declare.

FUNDING

This research did not receive any funding.

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