# MEDICAL STUDENTS' SELF-REPORTED PREPAREDNESS AND ATTITUDES IN PROVIDING CARE TO ETHNIC MINORITIES

Charlie Zhang; Jackson Chu; Kristy Cho; Jonathan Yang, BA; Kevin McCartney, BA; Kendall Ho, MD

**Background:** To assess medical students' self-reported preparedness to provide care to ethnic minorities, factors that influence preparedness, and attitudes toward cultural competency training.

**Methods:** A cross-sectional study, which invited University of British Columbia medical students to participate in a survey on student demographics, knowledge and awareness, preparedness and willingness, and personal attitudes. Of 1024, eligible, 301 students consented to study.

**Results:** Students across all year levels felt significantly less ready to provide care for non-English speaking Chinese patients compared to ''any'' patients. Proficiency in working with interpreters was correlated with readiness, OR 4.447 (1.606–12.315) along with 3rd and 4th year level in medical school, OR 3.550 (1.378–9.141) and 4.424 (1.577–12.415), respectively. Over 80% of respondents reported interest in learning more about the barriers and possible ways of overcoming them.

**Conclusions:** More opportunities for cultural competency training in the medical curriculum are warranted and would be welcomed by the students. (*Ethn Dis.* 2014;24[1]:116–121)

**Key Words:** Medical Education, Cultural Competency, Immigrant Health, Multiculturalism

From Faculty of Medicine, The University of British Columbia, Vancouver.

Address correspondence to Charlie Zhang; Suite 101, 590 West 12th Avenue; Vancouver, BC V5Z1M2, Canada; +1-778-889-4332; czhang825@outlook.com

## BACKGROUND

Cultural competence is essential in order for health care providers to provide quality care to diverse populations. It is the ''behaviors, attitudes, and policies that…ensure… [an] individual can function effectively and appropriately in diverse cultural interaction and settings.''[1] In the United States, data from 2006 reported ethnic minorities to be 30% of the country's population and suggested they will, collectively, become the majority by 2050.[2] As of 2008 in Canada, more than 16% of its citizens belonged to visible minority groups; in major cities such as Vancouver and Toronto, minority groups were 42% and 43% of the cities' populations, respectively.[3] The cultural milieu of the United States and Canada is rich and diverse and although this increasing diversity enriches communities, it also introduces challenges for health care delivery.

Chinese Canadians of all generations, but particularly first-generation immigrants, often maintain languages, cultural values, and belief systems that are underrepresented in the health care system, and profoundly influence their interactions with Western health care professionals.[4] In order for physicians to acquire the skills and knowledge to address these challenges, cultural competency training programs in medical schools have emerged. In Canada, sociocultural competency is a stated objective on the Licentiate of the Medical Council of Canada Examination and both Canadian and American medical schools have adopted and integrated additional training into their curricula.[5–7]

Our study was carried out at the University of British Columbia, the second largest medical school in Canada, and is one of the first to assess Canadian medical students' attitudes towards cultural competency training as well as their self-perceived preparedness to provide care to ethnic minorities. More specifically, we asked students about their willingness to work with the Chinese population as this is one of Canada's largest visible minority groups with more than 1.2 million individuals represented nationwide.[8]

*Our study … is one of the first to assess Canadian medical students' attitudes towards cultural competency training as well as their self-perceived preparedness to provide care to ethnic minorities.*

Thus, we first aimed to assess whether a patient's cultural background influences a medical student's preparedness or willingness to provide care. Secondarily, we sought to investigate the associations between self-perceived preparedness to care for a Chinese patient and various demographic factors such as student's primary spoken language, year of study, and clinical exposure.

## METHODS

### Participants

Students from all four years of medical undergraduate education at-

tending the University of British Columbia in Vancouver, Canada were invited to participate in this study. Of the 1024 eligible students, 301 (29.4%) voluntarily consented to completing the online survey. We recruited participants via email and each participant completed an online consent form prior to accessing the survey. This study was carried out in accordance with the University of British Columbia's Behavioural Research Ethics Board.

## Data Collection

Vovici software was used to collect data for the online survey, enabling the use of both open-ended and multiple-choice questions.[9] The survey contained four main sections: demographic history of the student, knowledge and awareness of Chinese immigrant populations and culture, preparedness to work in a clinical setting with Chinese patients, and personal views and attitudes towards Chinese patients. Survey questions were adapted from previous studies exploring cross-cultural competencies among medical students and resident physicians,[7,9] and knowledge-testing questions were created from primary sources.

## Measures

### *Demographics*

Demographic data was obtained from respondents, including sex, current year in medical school, first spoken language, reported ethnicity, ability to communicate in Chinese, and preferred setting of practice (urban vs rural). Ethnicity was assessed in the study to determine if there are ethnic differences in self-identified readiness when providing care for ethnic Chinese patients.

### *Knowledge and Awareness*

A list of questions from a literature review of population-based peer-reviewed studies[10–13] was developed to assess knowledge and awareness of existing barriers to accessing health care for Chinese immigrants. These questions also assessed the understanding of the health care views and tendencies among the Chinese immigrants.

### *Preparedness*

Students were asked whether they agreed with the following statement, ''I feel ready to provide care for a non-English speaking Chinese patient'' using a five-point Likert scale. As a control, respondents were asked to comment on the statement, ''I feel ready to provide care for any patient.'' Respondents were also asked to rate their self-perceived skill in working with interpreters in a clinical setting using a five-point Likert scale. Furthermore, respondents were asked whether the University of British Columbia medical curriculum has taught them specific strategies to provide optimal care to non-English speaking patients, and if so, to identify the strategies.

### *Views and Attitude*

The personal attitudes of medical students were explored regarding the issue of cross cultural health care. Respondents were asked whether they felt the Chinese immigrant population in British Columbia faces barriers in accessing the Canadian health care system. They then reported if they felt there are barriers for them as health care professionals to provide optimal care to this population, and if so, what those specific barriers were and whether they were interested in learning more about them.

## Analysis

SPSS (IBM, Version 20) was used for all statistical analysis in this study. Associations between categorical variables were determined using chi-square tests of significance (not shown). A logistic regression model was constructed to predict rates of self-perceived readiness among the sample of 301 students. This regression was carried out in two stages. Step one (A1) presents as a series of unadjusted models to examine the bivariate relationship between the independent variables and the dependent variable. Step two (A2) contains seven variables – sex, ability to communicate in Chinese (Cantonese or Mandarin), years in medical school, intended setting of future practice (urban or rural), intention to serve non-English speaking patients, self-perceived skill working with an interpreter, and whether the student was taught strategies for working with this population in medical school. These variables form a deductively constructed model, which accounts for known factors of readiness identified through consideration of the relevant literature, as well as factors of readiness believed to be important by the authors. The goal of this model is to consider the potential for teachable strategies and skills to mitigate demographic and experiential factors in the readiness of medical students to care for non-English speaking patients, and reflect on the role of the medical school in teaching said strategies and skills. Other variables – ethnicity, first language, self-perceived readiness to care for any patient – were considered and excluded from the final model due to multi-colinearity.

The reference person for this fully adjusted model is a male in his first year of medical school who cannot communicate in Chinese, intends to practice in an urban setting, expresses low willingness to work with non-English speaking patients in future practice, self-identifies as having limited skill with an interpreter, and has not been taught strategies to provide care for non-English speaking patients. The dependent variable – self-perceived readiness to care for non-English speaking Chinese patients – was coded as 0 or 1. As there are no best practices currently existing for collapsing this variable, a conservative approach was taken in which completely disagree and disagree were coded together as 0, and agree and completely agree were coded as 1, while the middle of the five-point scale (neither agree nor disagree) was removed from the analysis.

**Table 1. Demographics of survey respondents and key variable frequencies, *N*=301**

| | *n* (%) |
|---|---|
| Sex | |
| Male | 124 (41) |
| Female | 177 (59) |
| Year in medical school | |
| 1st | 109 (36) |
| 2nd | 89 (30) |
| 3rd | 52 (17) |
| 4th | 51 (17) |
| Self-identified ethnicity | |
| Caucasian | 137 (46) |
| Asian, Chinese | 104 (35) |
| Asian, other[a] | 31 (10) |
| Other[b] | 25 (8) |
| First language | |
| English | 228 (76) |
| Chinese, Cantonese | 26 (9) |
| Chinese, Mandarin | 28 (9) |
| Other[c] | 18 (6) |
| Ability to communicate in Chinese | |
| Not capable | 202 (67) |
| Somewhat capable | 58 (19) |
| Very capable | 42 (14) |
| Planned setting of practice after graduation | |
| Urban | 185 (61) |
| Rural | 27 (9) |
| Unsure | 89 (30) |
| Willingness to take non-English speaking patients | |
| Low | 44 (15) |
| Not sure | 48 (16) |
| High | 205 (68) |

[a] Includes Southeast Asian, Persian.
[b] Includes students of mixed ethnicity.
[c] Includes Vietnamese, Farsi, Tamil, Korean, Urdu, Russian, Japanese, Hindi, Spanish, Serbo-Croatian.

## RESULTS

The study population includes 301 total respondents from all four years of medical school education at the University of British Columbia. The demographic characteristics of survey respondents are presented in Table 1, alongside descriptive frequencies of sex, year in medical school, ethnicity, first language, ability to communicate in Chinese, planned setting of practice after graduation, and willingness to take on non-English speaking patients. The modal group in this study are first-year students, with the majority (66%) in years one or two. Slightly more females participated (59%) and the majority of respondents spoke English as their first language (76%) or did not speak Chinese (67%).

In order to assess students' attitudes and preparedness towards working with Chinese immigrants, the respondents were asked for their views on several key statements shown in Table 2. A slight majority (57.2%) of respondents reported being taught strategies to care for non-English speaking patients. The use of translators (97 responses) and understanding the specific barriers to health care faced by non-English speaking patients (49 responses) were the most common strategies taught to students.

To identify what factors affect readiness to provide care for Chinese patients, a logistic regression model was

**Table 2. Student responses to key questions, *N*=301**

| | *n* (%) Agreeing |
|---|---|
| I feel ready to provide care for a non-English speaking Chinese patient. | 81 (26.9) |
| I feel ready to provide care for any patient. | 126 (41.9) |
| I believe I am (or would be) skilled in working with interpreters in a clinical setting. | 170 (59.8) |
| In my future practice, I will be as willing to accept non-English speaking patients as English speaking patients. | 205 (68.1) |
| The Chinese immigrant population in British Columbia faces certain barriers in accessing the Canadian health care system. | 256 (85.0) |
| Do you feel that there are barriers for you as a health care professional to provide optimal care to the Chinese immigrant population? | 235 (78.9) |
| (For those that identify themselves as having barriers) Are you interested in learning more about the barrier(s) and possible ways of overcoming it (them)? | 199 of 235 (84.7) |
| Physicians and medical students should be provided with ongoing training to enhance their knowledge and skills in working with various immigrant populations. | 246 (81.7) |
| Health promotion, awareness and education programs targeted toward the Chinese immigrant population are warranted. | 256 (85.0) |
| I have been taught specific strategies to provide optimal care to non-English speaking patients in the program curriculum. | 172 (57.2) |

**Table 3. Binary logistic regression for predictors of self-perceived readiness among medical students to care for Chinese-speaking patients**

| | Model A1 (Unadjusted) | | Model A2 | |
|---|---|---|---|---|
| **Variables** | **OR** | **95% CI** | **OR** | **95% CI** |
| Sex | | | | |
| Men | 1.00 | | 1.00 | |
| Women | .655 | .382–1.121 | .639 | .322–1.267 |
| Ability to communicate in Chinese (Cantonese or Mandarin) | | | | |
| Not capable | 1.00 | | 1.00 | |
| Somewhat capable | 1.899 | .944–3.821 | 1.919 | .812–4.533 |
| Very capable | 9.049[a] | 4.013–20.405 | 10.752[a] | 3.911–29.561 |
| Year in medical school | | | | |
| 1st | 1.00 | | 1.00 | |
| 2nd | 1.061 | .518–2.172 | 1.072 | .454–2.528 |
| 3rd | 3.349[a] | 1.520–7.378 | 3.550[a] | 1.378–9.141 |
| 4th | 3.182[a] | 1.471–6.883 | 4.424[a] | 1.577–12.415 |
| Intended practice setting | | | | |
| Urban | 1.00 | | 1.00 | |
| Rural | .473 | .178–1.260 | .479 | .150–1.534 |
| Unsure | .324[a] | .163–.642 | .252[a] | .106–.598 |
| Willingness to accept non-English speaking patients | | | | |
| Low | 1.00 | | 1.00 | |
| Not Sure | 1.203 | .365–3.970 | 1.758 | .458–6.747 |
| High | 3.778[a] | 1.501–9.508 | 3.105[a] | 1.091–8.838 |
| Skill with using an interpreter | | | | |
| Low | 1.00 | | 1.00 | |
| Not Sure | 1.729 | .611–4.890 | 1.712 | .503–5.824 |
| High | 4.950[a] | 2.088–11.735 | 4.447[a] | 1.606–12.315 |
| Have been taught strategies to provide care to non-English speaking patients | | | | |
| No | 1.00 | | 1.00 | |
| Yes | .854 | .497–1.467 | 1.929 | .920–4.047 |

[a] Significant at .05.

constructed (Table 3). The number of respondents included in each model was reduced to 244 after removing those who responded with neither agree nor disagree to the dependent variable. As a result, some sample size issues arise in calculating significance and confidence intervals when looking at variables with limited response, such as intention to practice in a rural setting.

The odds ratios shown are congruent with initial expectations in many cases. One's ability to communicate in Chinese was the most significant factor in the relative readiness of a student to care for a Chinese-speaking patient. As well, as students move through medical school, their confidence increases. Critically, readiness also improves with improved self-rated skill with an interpreter. This lends strong evidence to the teaching of this strategy as an effective tool to improving student readiness to care for non-English speaking patients.

## DISCUSSION

Our study looked at the self-reported preparedness of medical students to provide care for Chinese immigrant patients and their self-identified barriers. Self-assessment had been recognized as an important component of adult, self-driven learning[14] and had been shown to be a valid predictor of examination scores and faculty evaluations.[7,15,16] One systematic review also reported reasonable association between self assessments and external review in evaluating physician cultural sensitivity.[17] Another study concluded that higher scores in physicians' self assessment of linguistic and cultural competency were correlated with better patient satisfaction with care.[18] For these reasons, it was expected that self-reported preparedness will correlate with the student's competency in providing care for this population.

Study results showed that students across all four year levels felt significantly less ready to provide care for non-English speaking Chinese patients than for "any" patient. It was shown that 15% of students were less likely to accept non-English speaking patients compared to English speaking patients. Nevertheless, there was no significant difference among students of various ethnicities in the willingness to accept non-English speaking patients (70.2% for students of Chinese ethnicity vs 67.0% for students of all other ethnicities). The ability to fully communicate in Chinese was the best predictor of preparedness, implying that the language barrier (rather than, say, cultural barriers regarding concepts of health and care) is particularly important in undermining readiness. Skill with an interpreter was associated with significantly improved readiness.

Gaining the skills necessary to work adequately with a translator can be challenging for students. After a three hour workshop on working with interpreters, 39% of second year UCLA medical students were still unable to

*Study results showed that students across all four year levels felt significantly less ready to provide care for non-English speaking Chinese patients than for "any" patient.*

achieve the passing grade on the post-workshop clinical examination.[19] With less than two hours dedicated to interpreter utilization education and no mandatory clinical training with interpreters, this seems to be an area of weakness in the University of British Columbia medical program's cultural competency training.

Level of training in medical school was a significant predictor of readiness (Table 3). There was no significant difference in readiness between first and second year students. However, students in third and fourth years were more than three and four times as ready as first year students, respectively. There was also a significant increase in readiness to provide care for any patient, regardless of patient ethnicity, as students move up to third year. It is possible that this was due to the entry from mainly lecture-based learning in the first two years to full time clinical work in the third and fourth years.

As over 80% of respondents, who identified themselves as having barriers, were interested in learning more about the barriers and possible ways of overcoming them, it is clear that more in-depth cultural competency training should be provided to medical students. However, it is important to consider the effectiveness of cultural competency training in preparing medical students to work with those of another culture. In a 2010 systematic review, cultural competency training showed a positive impact on patient outcomes in the articles evaluated.[20] In our study, 66.1% of students reported interest in learning more about how to overcome barriers when interacting with the Chinese Canadian population. However, the current University of British Columbia medical curriculum has little to no cultural competency training specific to working with ethnic minorities.

In addition, one must not make the connection that self-report of general readiness equals the whole of culturally competent care, as such care is multifaceted in nature, and self-perceived competence and willingness are necessary but insufficient aspects of it. We learned that students who speak Chinese and who feel comfortable using an interpreter also feel more ready to provide care for Chinese patients. However, we must be careful to not reduce culturally competent care to merely a language-related concern. Future research may incorporate more skill- and cultural understanding-specific questions to further elucidate the component of culturally competent care.

In the survey, medical students suggested online modules, workshops, seminars, classroom sessions, discussion groups, and mentoring as some of the ways for providing ongoing training. There is currently no consensus as to the most effective method of cultural competence training. Thus, there exists a variety of teaching styles employed at different facilities.[2] Lecture, workshop, and case study based approaches are among the most common methods for providing cultural competency training in medical schools.[2] Regardless of the method of delivery, the most effective approach to cultural competency training appears to focus on helping students address cultural differences in the clinical setting, as opposed to simply teaching students aspects of individual cultures.[20] A 2010 study by Ho et al revealed that students with formal cultural competency training retained more knowledge than the group without.[21] It also showed that ongoing opportunities to refresh and renew knowledge and skills can prevent loss of cultural competency skills.[21]

A potential limitation of our study is that the dependent variable is a self-rated measure of confidence, which may affected by sociodemographic characteristics, personality types, and other factors. However, self-rated measures have been shown to correlate well with independent measures and analysis reveals this measure to be reliable, if not yet proven valid.[7] In addition, we cannot exclude the possibility of a self-selection bias as individuals who participated in the study may have underlying personal values regarding cultural competence education or willingness to provide care for Chinese immigrants.

Canada is one of the most culturally diverse countries in the world. With that also comes the challenge of providing optimal health care to visible minority groups despite cultural and language barriers, and while respecting each individual's unique cultural, religious and personal beliefs. Although our study specifically evaluates students' attitudes towards the Chinese Canadian population, its findings may be applicable to predict student attitudes and preparedness with regards to other cultural minorities in North America. The authors believe that more opportunities for cultural competency training in the medical curriculum are warranted and would be welcomed by the majority of students. Recommendations to improve the current training process include encouraging multicultural exposure in clinical training, providing ongoing education in cultural competency, and formal teaching on working with interpreters.

## CONCLUSIONS

Medical students across all four year levels at UBC felt significantly less ready to provide care for non-English speaking Chinese patients than for any patient. The ability to speak Chinese, skill in working with interpreters, and higher year level correlate with student preparedness in working with the non-English speaking Chinese population. More cultural competency training in the medical curriculum is warranted and would be welcomed by the students.

### ACKNOWLEDGMENTS

We acknowledge Joanne Mah and Helen Novak Lauscher for their contributions to this study. Joanne Mah, DPAS 420 tutor, provided guidance for the study design and

conduct, and data collection. Helen Novak Lauscher, Assistant Director of Research at eHealth Strategy Office, was involved with data interpretation and manuscript revision.

## REFERENCES

1. Berry-Cabán C, Crespo H. Cultural competency as a skill for health care. *Hisp Health Care Int*. 2008;6(3):115–121.
2. Kripalani S, Bussey-Jones J, Katz M, Genao I. Prescription for cultural competence in medical education. *J Gen Intern Med*. 2006;21: 1116–1120.
3. Statistics Canada. Topic-based tabulations 2006 census of Canada: visible minority groups. www12.statcan.gc.ca/census-recensement/2006/index-eng.cfm. Accessed September 28, 2012.
4. Berger J. Culture and ethnicity in clinical care. *Arch Intern Med*. 1998;158:2085–2090.
5. The Medical Council of Canada. Objectives for the qualifying examination. www.mcc.ca/pdf/Complete_Objectives-e.pdf. Accessed January 5, 2012.
6. Azad N, Power B, Dollin J, Chery S. Cultural sensitivity training in Canadian medical schools. *Acad Med*. 2002;77(3):222–228.
7. Weissman J, Betancourt J, Campbell E, et al. Resident physicians' preparedness to provide cross-cultural care. *JAMA*. 2005;294(9): 1058–1067.
8. Statistics Canada. Canada's Ethnocultural Mosaic, 2006 Census: National Picture. www12.statcan.ca/census-recensement/2006/as-sa/97-562/p2-eng.cfm. Accessed February 25, 2012.
9. Vovici Survey Software. http://www.vovici.com/.
10. Lai D, Kalyniak S. Use of annual physical examinations by aging Chinese Canadians. *J Aging Health*. 2005;17:573–591.
11. Lai D, Chau S. Effects of service barriers on health status of elderly Chinese immigrants in Canada. *Soc Work*. 2007;52:261–269.
12. Chen A, Kazanjian A, Wong H. Why do Chinese Canadians not consult mental health services: health status, language or culture? *Transcult Psychiatry*. 2009;46:623–641.
13. Leong F, Lau A. Barriers to providing effective mental health services to Asian Americans. *Ment Health Serv Res*. 2001;3:201–214.
14. Biernat K, Simpson D, Duthie E, Bragg D, London R. Primary care residents self assessment skills in dementia. *Adv Health Sci Educ Theory Pract*. 2003;8:105–110.
15. Hawkins R, Sumption K, Gaglione M, Homboe E. The In-training examination in internal medicine: resident perceptions and lack of correlation between resident scores and faculty predictions of resident performance. *Am J Med*. 1999;106:206–210.
16. Fincher R, Lewis L, Kuske T. Relationships of interns' performances to their self-assessments of their preparedness for internship and to their academic performances in medical school. *Acad Med*. 1993;68:S47–S50.
17. Davis DA, Mazmanian PE, Fordis M, Harrison RV, Thorpe KE, Perrie L. Accuracy of physician self-assessment compared with observed measures of competence- a systematic review. *JAMA*. 2006;296(9):1094–1102.
18. Fernandez A, Schillinger D, Grumbach, Rosenthal A, Stewart AL, Wang F, Pérez-Stable EJ. Physician language ability and cultural competence: an exploratory study of communication with Spanish-speaking patients. *J Gen Intern Med*. 2004;19(2):167–174.
19. Fung C, Lagha R, Henderson P, Gomez A. Working with interpreters: how student behavior affects quality of patient interaction when using interpreters. *Med Educ Online*. 2010;1:15.
20. Lie D, Lee-Rey E, Gomez A, Bereknyei S, Braddock C. Does cultural competency training of health professionals improve patient outcomes? a systematic review and proposed algorithm for future research. *J Gen Intern Med*. 2010;26(3):317–325.
21. Ho M, Yao G, Lee K, Hwang T, Beach M. Long-Term effectiveness of patient-centered training in cultural competence: what is retained? what is lost? *Acad Med*. 2010;85(4): 660–664.

## AUTHOR CONTRIBUTIONS

*Design and concept of study:* Zhang, Chu, Cho, Yang, Ho
*Acquisition of data:* Zhang, Chu, Cho, Yang
*Data analysis and interpretation:* Zhang, Chu, Cho, Yang, McCartney, Ho
*Manuscript draft:* Zhang, Chu, Cho, Yang, McCartney, Ho
*Statistical expertise:* Zhang, Chu, McCartney
*Acquisition of funding:* Zhang, Chu, Ho
*Administrative:* Zhang, Chu, Cho, Yang, Ho
*Supervision:* Zhang, Chu, Yang, Ho