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ORIGINAL RESEARCH

Structural Competency of Pre-health Students: Can a Single Course Lead to Meaningful Change?

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Abstract

Scholars within the medical sciences recently have called on undergraduate educators to incorporate the social sciences in order to teach pre-health students structural competencies – or the ability to articulate how social structures produce racial, ethnic, gender, class, and other disparities – in order to better serve these populations medically. Authors used a semester-long course to assess how experiential learning focused on the topic of structural inequities improves structural competency. In Fall 2018, 27 students completed a hands-on, experiential, course focused on structural factors and health disparities. The authors conducted a mixed-methods, pre-/post-test design to solicit data on students' views on the reasons for high rates of obesity, gender pay disparities, and racial/ethnic housing segregation. Using systematic qualitative data analysis and statistical analysis of coded answers, the authors were able to detect pre-/post-test differences in the number of times students identified structural reasons for the disparities. Statistical analysis showed that students were able to identify an average of 4.63 structural reasons at pre-test, and that increased to 5.93 reasons at post-test (statically significant ($p = 0.007$)), indicating an increase in structural awareness after participation in the course. Qualitative analysis, using systematic methods of coding and a modified constant comparison method, demonstrated that students' ability to articulate structural reasons for inequality greatly improved. This experiential learning course, while relatively short, was found to increase students' ability to identify structural factors and articulate them with deeper understandings. Future curriculum development should consider incorporating experiential learning to promote structural competency, rather than a more traditional passive, content-delivery method of training.

Keywords Structural competencies · Pre-health · Experiential learning · Curriculum development

There is an increasing call for new, effective, and replicable approaches that emphasize "structural competency" in medical and health training [1–5] (see also https://structuralcompetency.org/). The approach aims to increase awareness of the effects of high and low power and privilege within social structures that produce inequalities – such as those enacted in policies, economic systems, and sociopolitical institutions [6, 7]. People experience these inequities because of their place within complex social hierarchies, usually at the intersection of factors such as class, wealth/poverty, ethnicity, gender, body size, sexuality, and location [8–10].

The call for more pre-health training in structural competency also directly addresses some key concerns with the current teaching of "cultural competency." In this lens, efforts to improve cultural competency tend to paint "culture" as an individual choice and/or relatively immutable quality of the patient rather than the practitioner and hence something to be clinically managed or navigated [4, 11, 12]. A key concern is that this does not encourage practitioner self-reflection in ways that would grow empathy and humility, nor does it adequately encourage critique of or desire to change broader medical practices and other relevant institutions (e.g., judicial, educational, governmental) – that ultimately create and reinforce illness [13–15]. The rationale for teaching structural competency generally is that increased awareness will not just improve clinical interactions with diverse patients and accordingly improve clinical practices but may encourage action to transform the unequal (stigmatizing, discriminating, poverty-

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reinforcing) systems in which they work [14]. The argument for teaching it earlier (rather than say, once in residency, e.g., Mathis et al) [16] is that it should allow students to interrogate, thoughtfully, the role of the very structures they will later be trained in before they are fully embedded in ways that make recognizing their own structural privilege harder to see and redress. For example, stigma within clinical encounters is often embedded in learned medical practice, such as how doctors talk to patients [17, 18].

Here, we test if it is possible to achieve measurable and meaningful improvement in undergraduate students' awareness of structural inequality – a theoretically complex concept representing a difficult challenge – in the context of just one-course intervention early in pre-health training. Our hypothesis is thus that we will observe significant improvement in measurements of structural competency between the start and end of a single semester. We test this through a mixed-methods, pre-/post-test design to solicit data on students' views on the reasons for high rates of obesity, gender pay disparities, and racial/ethnic housing segregation. Using systematic coding of qualitative data and statistical analysis of coded answers, we were able to detect pre-/post-test differences in the number of times students identified structural reasons for the disparities, suggesting the efficacy of our pedagogical approach.

What Works for Improving Structural Competency?

Explicitly identifying the need for effective structural competency training within medicine is a relatively new endeavor. As such, it remains unclear the extent and forms of training needed for students to noticeably advance basic awareness of complex – and often hidden – power structures [19]. It seems reasonable, however, that purposeful design of an entire undergraduate curriculum that emphasizes the origins and implications of social inequality should be effective.

To this end, Metzl, Petty, and Olowojoba [20] (see also Metzl and Roberts) [4] assessed an undergraduate, interdisciplinary pre-health degree program that incorporates courses from health sciences, social sciences, and humanities. They found that, compared to incoming pre-med freshman and graduating pre-med students in life sciences majors and to non-declared pre-health freshmen students, the interdisciplinary majors were able to better identify and explain structural inequalities on negative health outcomes (such as being more likely to select explanations above the level of genetics or individual behavior for geographic differences in child obesity). However, it is not clear if there was some selection bias into the major that favored more structurally aware students, as the incoming and existing students within the interdisciplinary major were not compared.

In one study on a specific course, Rabinowitz et al. [21] had 39 undergraduate students subjectively identify their levels of comfort, knowledge, and skills on a 52 item, Likert-type scale in a pre- and post-test survey for a peer-taught course explicitly addressing structural inequalities. Positive change was statistically evident immediately after course completion and 6 months later in some items. While not conducted at the undergraduate level but rather during medical residency, Bromage et al. [22] report on a study of a short-term experiential intervention, where 18 residents were taken on community tours by local guides who had an experience of mental illness and as a culminating experience, students completed class presentations on their perspective neighborhoods. Feedback collected in focus groups was the basis for their conclusions that the programming increased awareness of structural factors in mental health. Within our study, we test the level of measurable change in structural awareness achievable in the context of a single upper-division undergraduate course, using systematic coding of qualitative pre- and post-test student response data.

Methods

Course Design

On these bases, we designed a one semester, upper-division, pre-health elective course ("Urban and Environmental Health" in Fall 2018) that included theory-based instruction in structural contexts of illness, stigma, and suffering but placed primacy on co-creating knowledge in the community with diverse community members about structural barriers. Course design was strongly influenced by Metzl and Hansen's [4] core learning outcomes: increasing capacity to notice exclusionary and disadvantaging structures, to understand how individual patient's lives are embedded in such structures and adjust clinical practice accordingly, to allow for an extra-clinical language of structure, to reclassify "culture" in structural terms, and to observe and imagine structural interventions.

The course itself focused on awareness around three potential structural vulnerabilities: female gender, Latinx/immigration status, and obesity. Gender is a well-established basis for disempowerment in all societies, including the USA [8, 23]. Ethnicity, immigration, and non-majority language use are also well-established structural vulnerabilities with potential severe health effects; as we were conducting the course in the US Southwest, we focused on Latinx/immigration status, a well-established factor in environmental and health disadvantage in the city [24, 25]. Very large bodies associated with obesity are both socially and physically excluded within mainstream US society. For example, teasing and social rejection and extreme feelings of stigma are often reported, and the physical environment also is exclusionary, such as insufficient space to sit on seats or exit from parking

spaces [26]. Obesity-related discrimination is not just legal but often socially tolerated, and health professionals are reported to place significant and health-damaging blame on people for their weight even, while scientific evidence suggests a key role of structural factors such as poverty [27].

The single-semester class facilitated students' collaborative data collection related to structural barriers faced by local community members in public spaces. Students initially read, discussed, and reflected on the theoretical literature surrounding systematic discrimination and institutional exclusions, such as social stigma and environmental injustice. Students were trained as field assistants, and as such, basic in-classroom training on how to deploy observational tools (e.g., transect walk, environmental assessment) was then given. Students were divided into groups and completed focused literature searches regarding distinct structural exclusions on the basis of the three domains: immigration status/ethnicity, high body weight, and female gender. They then discussed their findings in class.

Following these classroom learning activities, each student was then assigned to visit two community locations to evaluate potential exclusionary public spaces aligned to these three domains, as examples of how social structures and discriminatory practices become embedded and normalized in everyday locations. These can have profound effects on those being excluded. These student observations were then pooled and analyzed by the students to select the physical locations in the community where structural exclusions might be most apparent.

As trained field assistants, the students then completed IRB training and facilitated the piloting of a transect walk protocol and then recruiting and training diverse community members (on the basis of language, age, ethnicity, and gender) as their own research collaborators. Under the guidance of the students, each community participant used the same transect to walk through nine community sites, identifying and recording items in the environment that could be exclusionary on the basis of three focus demographic factors: race/ethnicity/immigration status, female gender, and very large body size (see Supplemental Digital Appendix 1). Students also completed a follow-up interview with each community member, conducted data entry, and did some preliminary analysis of the resulting dataset.

Participants

Of 33 students enrolled in the course, 27 agreed to the study and completed both pre- and post-tests. Eighteen of the 27 students self-identified as females, 7 as males, 1 as non-binary, and 1 as undisclosed. Their self-reported ethnicity is as follows: 11 White, 9 Latinx, 3 American Indian, 2 Asian, 1 two or more races, and 1 undisclosed. A "feelings thermometer" tool was used for reports of warmth (as degrees) toward different groups, where 0 degrees reflects "extremely unfavorable" feelings and 100 degrees reflects "extremely favorable" ones. Overall, students reported warmth toward all the different groups (Fig. 1). Using a paired samples t-test to identify differences in mean levels of warmth, at baseline students indicated more favorable feelings on average toward women than men ($p = 0.000$), toward Mexican-Americans than Anglo-Americans ($p = 0.034$), and to Mexican-Americans than undocumented immigrants ($p = 0.000$). There was no apparent difference in the mean level of warmth toward African-Americans versus Anglo-Americans ($p > 0.05$).

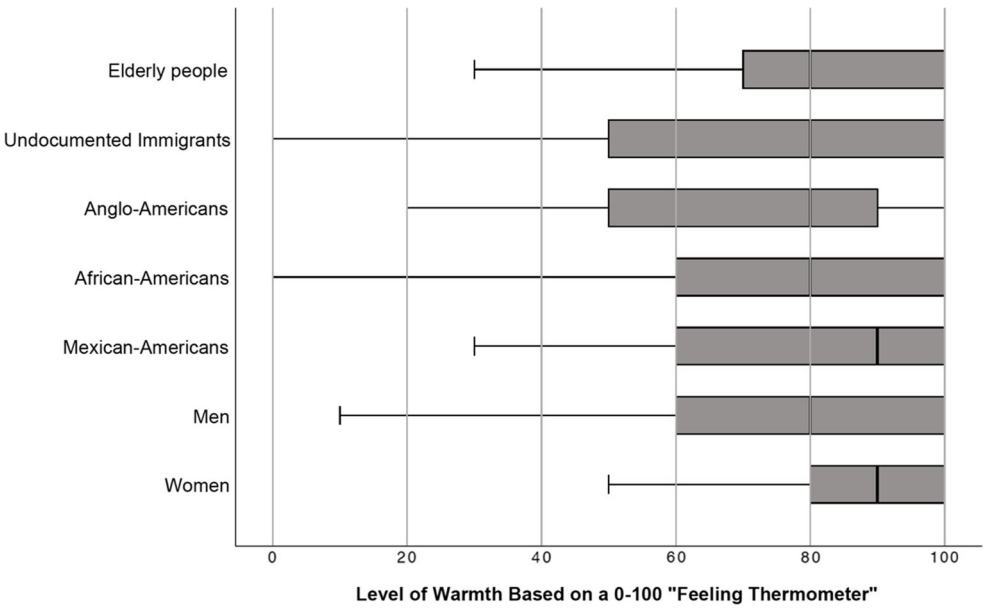

Fig. 1 Mean reported levels of feeling warmth toward different groups, based on a 0–100 "feeling thermometer", where 100 means they feel the most favorable

Pre-/Post-Test Design

We utilized a pre-/post-test of coded open-ended response data designed to assess change in structural awareness, aligned with the approach taken by Metzl and Petty [6]. Before the class met for the first time, students responded to three vignettes (Supplemental Digital Appendix 2). Each vignette included a visual representation and a written description of a research finding, and students were asked to provide three possible explanations for the finding. The first asked about the higher rates of obesity in the southern US states. The second asked for an explanation for the clustering of Latinx immigrants in lower-income neighborhoods in our city, and the third asked about the US gender gap in average pay. The same vignettes were presented at the close of the course.

To analyze data, we first created a deductive codebook to manage the open-ended responses to the vignettes [28], informed by the broader theoretical literature on structural exclusions and suffering [8]. The initial analyses resulted in the following two codes based on level and type of explanation offered: (1) *Social structural* (our key outcome code), which reflected responses that identified policies, economic systems, and other institutions or explained differences along the lines of disadvantages created by social categories such as race, class, gender, and sexuality [29], and (2) *other explanations*, including *individual/personal* that point to qualities or actions of an individual/group of people, focused on an inner state or personal characteristics, behaviors, personal histories, or genetics; *cultural* explanations that focus on cultural norms and values for a particular group, but not society as a whole; and *social network* explanations that exhibit social and personal influences upon an individual by other people with whom they have contact. Prior to coding, the first and second authors conducted interrater reliability of these definitions to establish code validity and reliability [28]. Cohen's Kappa for the social structural code was .827, and the strength of agreement was considered to be very good [30].

The second author then coded each response to the three vignettes. Codes were applied exclusively, meaning that each response could only be assigned one of the four codes. Since there were three possible responses per vignette, an individual could receive a maximum score of nine by providing three structural reasons for each of the three vignettes. Any reason coded as individual, cultural, or social network was considered "other explanations" and assigned a score of zero. Upon finalization of coding, we conducted a statistical analysis by looking at the number of times students identified a structural reason versus alternative (3 for each scenario, so the maximum possible score was 9).

We then reviewed the individual answers again to assess qualitatively how an individual's responses had changed between pre- and post-testing, also showing the ways students switched from non-structural to structural explanations. Using a modified version of the constant comparison method [31], we systematically compared responses within and across students. Specifically, we compared each student's answers in the pre-test and post-test. In addition, we compared answers across students (e.g., comparing women vs. men, Latinx vs. non-Latinx). This analytic process included identifying specific exemplar responses to illustrate these analytical findings [32].

Results

Statistical Analysis

In the pre-test, there were students who offered no structural explanations for any of the scenarios ($n = 2$), but by the post-test, *all* of the students offered at least three structural explanations ($n = 27$). A paired sample t-test performed on the pre- and post-test data ($n = 27$) showed statistically significant differences in the number of structural explanations offered once students had completed the course (Fig. 2, ($p = 0.007$), t = 2.9, CI = .39–2.2, SD = 2.28). The pre-test mean was significantly lower at 4.63 (+2.22) than the post-test mean of 5.93 (+1.54).

Qualitative Analysis

As shown in the following exemplars, the qualitative analysis showed similar results to the statistical one, in terms of positive change between the pre- and post-test. However, it also yielded an important additional finding: students who offered structural explanations at pre-test also developed more sophistication in their structural reasoning in ways not captured in the quantitative analysis of the code responses.

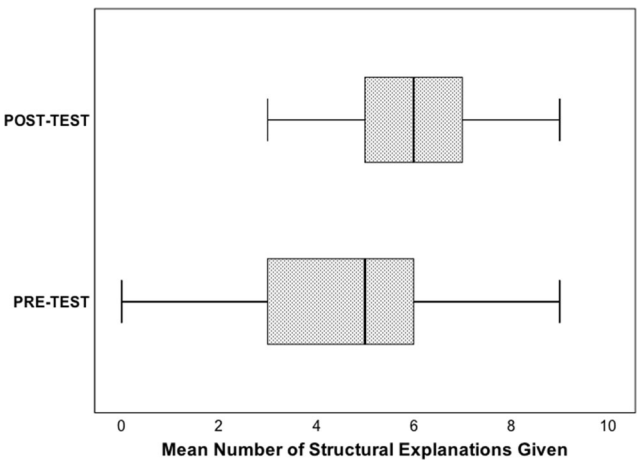

Fig. 2 Comparison of pre-test and post-test means ($N = 27$), with median also displayed

Explanations for Obesity

Exemplar 1 (Native American female):

Pre: *There are large numbers of poor, black families in the south.* (coded as structural because the mention of poverty affecting a racial group).
Post: *The south has a higher black population than the rest of the United States. Black Americans have higher levels of obesity because of a mixture of current racialized stress, historical racialized stress, and lower income based on discrimination*. (coded as structural because the reasoning includes systems that create poverty and historical discrimination).

Exemplar 2 (White female):

Pre: *The south historically has superior agriculture, and it may be possible that an abundance of food is contributing to the obesity rates.* (coded as other/cultural because mentioning the "an abundance of food" suggests there is a culture of eating too much food).
Post: *Higher obesity rates in the south are due to the fact that food deserts are more in this area*. (coded as structural because the reasoning includes a system/structure that creates a lack of healthy foods).

Explanations Gender Pay Gap

Exemplar 1 (Latina female):

Pre: *Females do not negotiate when they get a job because it's not in her nature*. (coded as other/individual because the response suggests this is a biological/natural pre-disposition).
Post: *Old and outdated ideals that women are not as capable as men and only belong in the kitchen and/or at home taking care of children*. (coded as structural because the reasoning points to social beliefs that disadvantages one gender over another).

Exemplar 2 (White female):

Pre: *Men think they are the superior to women*. (coded as other/cultural because it references cultural norms of a specific group).
Post: *Men say women have more responsibilities at home that will distract them from being able to give their 100% to their job to get paid equally.* (coded as structural because it discusses institutional structures that disadvantage an entire social group within a workplace).

Explanation Latinos in Low-Income Neighborhoods

Exemplar 1 (White female):

Pre: *Many employers get away with paying Hispanics lower wages, thus they can only afford to live here.* (coded as structural because the statement references economic systems that disadvantage a racial group).
Post: *Cities, including XXXX, have historically been known to push certain demographics in the worst parts of town which are usually food deserts, have low-income employment opportunities, have little to no public transportation, and just so happen to be situated right by Superfund sites.* (coded as structural because the reasoning discusses policies and systems that disadvantage a racial group).

Exemplar 2 (Latino male):

Pre: *Cultural identity is massively important and one of the most identifying aspects of a culture is the language.* (coded as other/cultural because it specifically references culture).
Post: *English is the predominant language in the USA and the inability to speak it or comprehend it fully will hinder one's access to quality jobs*. (coded as structural because the statement references the policies that disadvantage a racial group).

These exemplar quotes demonstrate two important learning outcomes. First, students who initially listed structural reasons developed greater nuance and specificity for those reasons by the end of the class. Second, students who initially had non-structural/other reasons (including individual, cultural, and social network) revised them to be social structural. Therefore, this one-semester course that engaged students in an experiential learning process as co-creators of knowledge proved to show meaningful change, quantitatively and qualitatively. Specifically, through completing literature searches, discussing in class, designing the protocol, recruiting participants, and conducting a preliminary analysis, students were able to increase their abilities to identify and articulate structural inequalities.

Discussion

There is a growing recognition that pedagogies that successfully build structural competencies in pre-health students can have profound effects on their clinical effectiveness, capacity to enact needed change to reduce health disparities, and even reduce burnout and attrition from medical professions. Compared to "cultural competence," however, teaching

structural competency is arguably more challenging. It requires the means to reveal and address often-hidden structures in which pre-health students, who often may be privileged themselves, can have vested interests.

In this case, informed by best practices from experiential learning and the broader literature on structural vulnerabilities and suffering, we designed a single course that facilitated students to directly address three different inequalities that play out in most communities, including their own (gender, immigrant status, large body size). The quantitative and qualitative findings from the pre-/post-test design suggest that it is possible pedagogically to markedly and meaningfully increase structural awareness as one key aspect of competency through a single experientially-focused undergraduate course. The study also demonstrates a novel means to test for the relevant impacts on how students process and respond to relevant information. While we are confident in our methods of measuring significant change in students' understanding, perhaps we did not change their structural awareness, but rather gave them better terminology to describe with more clarity structural factors in ways required to pass the course. If so, we agree with Metzl and Hansen that this in itself can be viewed as a success if it refines the skills and abilities to better articulate contextual factors that can affect health, and/or reduces reliance on biological/genetic explanations of health disparities [6].

This demonstrated success, maximizing a single course design for enhancing structural awareness, which can be explained based on three key literatures. First, the broader literature on experiential learning suggests that actively engaging students in the learning process, rather than having them be passive receivers of transmitted information, is more beneficial for students (most especially as co-producers of knowledge). Students engaged in experiential learning are reportedly better able to grasp complex, abstract ideas when these are linked to concrete experiences, and then more likely to also apply them in their everyday lives [33]. This instructional modality typically engages a circular, nonlinear process of four stages: experiencing, reflecting, thinking, and acting [33, 34]. Experiential learning, like cultural competency training, has been around for several decades and has been regularly incorporated into cultural competence training for health care practitioners [35–37]; we expand on this approach by testing its efficacy in advancing structural competency training. There are not many published examples of testing impacts. In the interdisciplinary degree program described in the literature review, "immersion interventions" (e.g., internships) were seen as valuable but their impact was not specifically tested [6, 20]. Second, there is a general understanding from the structural competency training literature that moving students outside of the clinic and classroom, and into community-engagement, is key to making pre-health students more aware of, and want to actively transform, the inequitable systems in which they will work throughout their careers (i.e., lifelong impacts) [3, 15, 19]. This was central to our approach in the course we tested. Third, structural inequities are often invisibly embedded within and very easily reinforced by institutions with economic, political, or social power. This includes systems of both medical care and training. As such, we continuously remind students that when medical practices are taught and widely practiced (e.g., how clinicians examine patients), they can nonetheless inadvertently reinforce stigma and other structural vulnerabilities [18].

As social scientist health educators who have cumulatively taught 1000s of pre-health students at all levels for a combined 8+ decades, our sense is that these forms of training need to happen well before residency, preferably at the undergraduate level. If effective, this then facilitates a more critical engagement with all aspects of medical training practice from inception, which better aligns with theories of how structural privilege can best be undone. However, it is likely even better if engagement with learning, diagnosing, and prescribing interventions for health conditions related to structural factors is widely integrated and diffused throughout medical school curricula. This should help reinforce and strengthen deeper understandings of how such social and structural disadvantages produce negative health outcomes in ways that later make medical practitioners better able to connect with a diversity of patients and more effectively understand their needs. There is much still to learn about the best ways to engage student learning around structural competence, particularly based on what pedagogies and at what point in their education are most effective at creating transformative, career-long impacts.

Compliance and Ethical Standards

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical Approval This study was approved by the Arizona State University's Institutional Review Board in Fall 2018 (STUDY00008248). All research activities were performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Statement of Informed Consent Informed consent was obtained from each participant included in this study.

References

1. D'Eon M. Systems thinking and structural competence in and for medical education. Canad Med Edu Journ. 2017;8(1):e1.
2. Downey MM, Gómez AM. Structural competency and reproductive health. AMA Journ of Ethics. 2018;20(3):211–23.
3. Eichbaum Q, Rowthorn V, Allison J, Myser C. Challenging paradigms of global health education: examining critiques of competency-based education. In: Global Health experiential education. Abingdon, UK: Routledge; 2017. p. 23–31.

4. Metzl JM, Hansen H. Structural competency: theorizing a new medical engagement with stigma and inequality. Soc Sci & Med. 2014;103:126–33.
5. Tsevat RK, Sinha AA, Gutierrez KJ, DasGupta S. Bringing home the health humanities: narrative humility, structural competency, and engaged pedagogy. Acad Med. 2015;90(11):1462–5.
6. Metzl JM, Petty J. Integrating and assessing structural competency in an innovative prehealth curriculum at Vanderbilt University. Acad Med. 2017;92(3):354–9.
7. Metzl JM, Roberts DE. Structural competency meets structural racism: race, politics, and the structure of medical knowledge. AMA Journ of Ethics. 2014;16(9):674–90.
8. Bourgois P, Holmes SM, Sue K. More structural vulnerability: operationalizing the concept to address health disparities in clinical care. Acad Med. 2017;92(3):299–307.
9. Donald CA, DasGupta S, Metzl JM, Eckstrand KL. Queer frontiers in medicine: a structural competency approach. Acad Med. 2017;92(3):345–50.
10. Donald C, Fernández F, Hsiang E, Mesina O, Rosenwohl-Mack S, Medeiros A, et al. Reflections on the intersection of student activism and structural competency training in a new medical school curriculum. In: Structural competency in mental health and medicine. New York, NY: Springer Publishing; 2019. p. 35–51.
11. Krishnan A, Rabinowitz M, Ziminsky A, Scott SM, Chretien KC. Addressing race, culture, and structural inequality in medical education: a guide for revising teaching cases. Acad Med. 2019;94(4): 550–5.
12. Yates-Doerr E. Translational competency: on the role of culture in obesity and interventions. Med Anthro Theory. 2018;5(4):106–17.
13. Hansen H, Metzl JM. New medicine for the US health care system: training physicians for structural interventions. Acad Med. 2017;92(3):279–81.
14. Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. Lancet. 2017;389(10077):1453–63.
15. Geiger HJ. The political future of social medicine: reflections on physicians as activists. Acad Med. 2017;92(3):282–4.
16. Mathis W, Cyrus K, Jordan A, Rohrbaugh R. Introducing a structural competency framework for psychiatry residents: drawing your neighborhood. Acad Psych. 2019:1–4.
17. Kleinman A. Patients and healers in the context of culture: an exploration of the borderland between anthropology, medicine, and psychiatry. Berkeley: University of California Press; 1980.
18. Brewis A, Wutich A. Lazy, crazy, and disgusting: stigma and the undoing of Global Health. Baltimore, MD: Johns Hopkins University Press; 2019.
19. National Academies of Sciences, Engineering, and Medicine (NASEM). A framework for educating health professionals to address the social determinants of health. Washington, DC: National Academies Press; 2016.
20. Metzl JM, Petty J, Olowojoba OV. Using a structural competency framework to teach structural racism in pre-health education. Soc Sci & Med. 2018;199:189–201.
21. Rabinowitz MR, Prestidge M, Kautz G, et al. Assessment of a peer-taught structural competency course for medical students using a novel survey tool. Med Sci Edu. 2017;27(4):735–44.
22. Bromage B, Encandela JA, Cranford M, Diaz E, Williamson B, Spell VT, et al. Understanding health disparities through the eyes of community members: a structural competency education intervention. Acad Psych. 2019;43(2):244–7.
23. Hunnicutt G. Varieties of patriarchy and violence against women: resurrecting "patriarchy" as a theoretical tool. Viol Against Women. 2009;15(5):553–73.
24. Bolin B, Grineski S, Collins T. The geography of despair: environmental racism and the making of South Phoenix, Arizona. USA Hum Eco Rev. 2005:156–68.
25. Wutich A, Ruth A, Brewis A, Boone C. Stigmatized neighborhoods, social bonding, and health. Med Anthro Quart. 2014;28(4):556–77.
26. Brewis A, Trainer S, Han S, Wutich A. Publically misfitting: extreme weight and the everyday production and reinforcement of felt stigma. Med Anthro Quart. 2017;31(2):257–76.
27. Tomiyama AJ, Carr D, Granberg EM, Major B, Robinson E, Sutin AR, et al. How and why weight stigma drives the obesity 'epidemic' and harms health. BMC Med. 2018;16(1):123.
28. Bernard HR, Wutich A, Ryan GW. Analyzing qualitative data: systematic approaches. Thousand Oaks, CA: SAGE Publications; 2016.
29. Neff J, Holmes SM, Strong S, Chin G, De Avila J, Dubal S, Duncan LG, Halpern J, Harvey M, Knight KR, Lemay E. The structural competency working group: Lessons from iterative, interdisciplinary development of a structural competency training module. In: Structural Competency in Mental Health and Medicine. Eds. Hansen H, Metzl J. New York, NY: Springer Publishing; 2019: 53–74.
30. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Hoboken, NJ: Biometrics; 1977. p. 159–74.
31. Boeije H. A purposeful approach to the constant comparative method in the analysis of qualitative interviews. Qual and Quan. 2002;36(4):391–409.
32. Bernard HR. Research methods in anthropology: qualitative and quantitative approaches. Lanham, MD: Rowman & Littlefield; 2017.
33. Kolb AY, Kolb DA. Experiential learning theory: a dynamic, holistic approach to management learning, education and development. The SAGE HndBk. 2009:42–68.
34. Kolb A, Kolb D. Eight important things to know about the experiential learning cycle. Aus Edu Lead. 2018;40(3):8.
35. Kim BS, Lyons HZ. Experiential activities and multicultural counseling competence training. Journ of Counsel & Develop. 2003;81(4):400–8.
36. Kohlbry PW. The impact of international service-learning on nursing students' cultural competency. Journ of Nurs Scholar. 2016;48(3):303–11.
37. Lockhart JS, Resick LK. Teaching cultural competence. Nurse Edu. 1997;22(3):27–31.