

Article

Medical student perceptions of a behavioural and social science curriculum

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ABSTRACT

Background In 2006, Oregon Health & Science University began implementing changes to better integrate mental health and social science into the curriculum by addressing the Institute of Medicine's (IOM's) 2004 recommendation for the inclusion of six behavioural and social science (BSS) domains: health policy and economics, patient behaviour, physician–patient interaction, mind–body interactions, physician role and behaviour, and social and cultural issues.

Methods We conducted three focus groups with a purposive sample of 23 fourth-year medical students who were exposed to 4 years of the new curriculum. Students were asked to reflect upon the adequacy of their BSS training specifically as it related to the six IOM domains. The 90-minute focus groups were recorded, transcribed and analysed.

Results Students felt the MS1 and MS2 years of the curriculum presented a strong didactic orientation to behavioural and social science precepts.

However, they reported that these principles were not well integrated into clinical care during the second two years. Students identified three opportunities to further the inclusion of BSS in their clinical training: presentation of BSS concepts prior to relevant clinical exposure, consistent BSS skills mentoring in the clinical setting, and improving cultural congruence between aspects of BSS and biomedicine.

Conclusions Students exposed to the revised BSS curriculum tend to value its principles; however, modelling and practical training in the application of these principles during the second two years of medical school are needed to reinforce this learning and demonstrate methods of integrating BSS principles into practice.

Keywords: behavioural sciences and social sciences, education, focus groups, medical, undergraduate

Introduction

Behavioural and social science (BSS) curricula aim to integrate mental health and social sciences into healthcare education. Both the World Health Organization (WHO) and the World Organization of Family Doctors (WONCA) emphasise the need to provide adequate mental health and social science training for primary care providers.¹ Family medicine residents in three Western countries agree that the primary objectives of family medicine are the BSS values of patient advocacy and continuity of care.² Similarly, patients and community stakeholders identified five principle tasks of family medicine, and only one of those was related to diagnosis and management, with the other four relating to socio-cultural and behaviour elements of patient care.³ The behavioural and social sciences provide important strategies for addressing cross-culturally relevant family medicine concerns including suicide,⁴ depression,⁵⁻⁷ homosexuality,⁸ equitable access to healthcare,⁹⁻¹¹ understanding and respecting pluralistic health care systems,¹² patient-centred care¹³ and care for at-risk populations.¹⁴

Many countries now have BSS elements in their medical school curricula including Israel,^{15,16} the UK,^{17,18} New Zealand¹⁹ and the USA^{20,21} among others worldwide.^{22,23} However, all identified countries report difficulties fully integrating BSS into the medical school curriculum^{15,18,24,25} and the USA is no exception.²⁶

The Institute of Medicine (IOM) is an independent, non-profit US organisation that provides healthcare advice to the public and policy makers. In 2004, the IOM issued a recommendation that BSS curricula be integrated throughout the entire four years of medical school.²⁴ After thorough study of the roles that culture, communication and behaviour play in healthcare outcomes, the IOM committee concluded that most medical schools did not include adequate BSS education in the USA.²⁴ Six domains with 26 subtopics were identified by the IOM that should be included in all medical school curricula. The six domains are health policy and economics, patient behaviour, physician-patient interaction, mind-body interactions in health and disease, physician role and behaviour, and social and cultural issues in health care.²⁴

The IOM made this recommendation despite a long history of efforts to integrate BSS in US medical education.²⁷ Efforts began in the 1940s, reflecting the growth of psychiatry, changing disease and demographic trends, and the inclusion of social scientists in health care.²⁸ In 1951, the Association of American Medical Colleges encouraged medical schools to further elaborate the role that BSS would

play in education.²⁹ Soon thereafter, in 1958, the National Institutes of Mental Health offered grant opportunities to enhance BSS education for medical students,²⁷ and in 1959 the University of Kentucky established the first department of behavioural science in a US medical school.²⁸ However, obstacles persisted for integration of BSS curriculum as the scientific advances demanded the teaching of increasingly technical medical knowledge. Again, in the mid-1970s, another national plea was made for the inclusion of more BSS in the medical school curricula.³⁰

The largest influence upon US BSS curricular improvement occurred during the late 1980s and early 1990s, with the publication of the American Association of Medical Colleges' Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine (the 'GPEP report').³¹ This comprehensive critique of both teaching methods and content prompted curricular revisions with an emphasis upon 'patient-centred care' and the inclusion of more 'active learning formats' such as patient care simulations and early clinical exposure which are now utilised in most medical schools. Although the degree of penetration of BSS training into clinical practice is disputed,^{22,32} the 2004 IOM recommendations indicated a further need for improvements in BSS training in the medical school curriculum.

In part, as a result of the GPEP report, Oregon Health & Science University (OHSU) initiated major curricular revision in 1992. In the previous curriculum, BSS training was limited to one medical psychology and one public health course taught in the pre-clinical years, with very little preparation for third-year patient care rotations. The 1992-1994 revision, supported by a Robert Wood Johnson grant and taking two years to fully implement, restructured the curriculum and freed up time in the first two years for weekly clinical preceptorship experiences and over 240 hours of didactics and small group/experiential learning of BSS knowledge, skills, and attitudes in the two-year longitudinal course called 'Principles of Clinical Medicine' (PCM).³³

In 2005, OHSU was one of nine US medical schools selected for a five-year (2006-2011) National Institutes of Health (NIH)-funded K07 award to improve BSS education. OHSU proposed a comprehensive plan and additional BSS curriculum to provide effective education in all 26 recommended IOM topics. Due to the exigencies of hospital-based clinical rotations, BSS revision was primarily focused upon the PCM curriculum taught in the first two years of medical school. We report on the perceptions of the BSS curriculum identified by OHSU fourth-year medical students who experienced all four years of the revised format.

Methods

Study design

This focus group assessment was part of a mixed-methodology assessment of outcomes in the undergraduate BSS curriculum at OHSU. The focus group design is a commonly used qualitative strategy in medical education research to ascertain students' experiences and opinions, and to unveil characteristics of the hidden curriculum.^{34,35} In a focus group, individuals converse with each other and remember shared and divergent experiences.³⁶ This joint experience of recalling occurrences helps to explain not only what individuals think, but also why they think that way.³⁴

Sampling and participant profile

A purposive sample of fourth-year medical students was recruited through an email announcement inviting all graduating students to participate in focus groups held during their Transition to Residency course. As incentives to participate, lunch was provided and a raffle for three \$100 gift cards was held, one prize for each group drawn at the end of their discussions. It was agreed students would be selected in order of their email responses, with a minimum of 12 and a maximum of 30 students. Participating students gave informed consent. Twenty-three students participated, 18% of a graduating class of 127. They were assigned randomly by gender to three focus groups. The first focus group had five males and three females. The second focus group had four males and four females. And the third focus group had four males and three females.

Interview instrument

The focus group interview instrument was created by a team of qualitative researchers to reflect the topics emphasised in the BSS curriculum (Box 1). Students were asked to reflect on how well the curriculum prepared them for doctor-patient interactions and how well prepared they were at including a sociocultural component to health care. Facilitators elicited examples from students of specific classes and situations that illustrated their experiences. Probes for each overarching theme attempted to capture the 26 subtopics identified by the IOM.

Data collection and analysis

The focus groups each met once for 1.5 hours. Each focus group was moderated by an experienced focus group leader who was also involved in the development of the instrument. For each group, a trained note-taker noted key phrases to help guide the transcriptionist. Focus groups were audio-taped and transcribed verbatim by a professional transcriptionist. All researchers received copies of the transcripts to review. The transcripts were read multiple times by an experienced qualitative researcher (CP) and thematic patterns were noted. The software program MaxQDA (VERBI GmbH, Marburg Germany) was employed to hierarchically code the text using predetermined codes of the six BSS curriculum domains. After coding those deductive themes, emergent subcodes were identified and coded. Deductive and emergent main themes were identified by noting what ideas were discussed by all three focus groups repeatedly and in depth. Student quotes were selected to best represent the discussion relevant to each theme. Content validity was established by providing focus group participants and researchers with a report of findings and requesting input for accuracy. Only minor changes were suggested. Convergent validity was established by comparing the results of the focus groups with the literature on medical school education. The study conformed to the Declaration of Helsinki and the OHSU Institutional Review Board approved the study and study instrument.

Results

We found that students reported that after their first two years of medical school they recognised the importance of applying BSS concepts in medical practice. However, they were disappointed to find their internalised BSS values were not apparent in much of their third and fourth years of medical school. Three main themes emerged about the difficulties of integrating BSS principles into clinical practice:

- the curriculum provided BSS information before it became clinically relevant and with no BSS follow-up offered in the clinical years
- attendings and residents inconsistently modelled BSS principles in the clinical setting and
- dissonance still exists between the culture of BSS and the culture of biomedicine.

Overall, students were pleased to have BSS incorporated into the curriculum and congratulated the institution:

Box 1 Focus Group Instrument 2010**Focus group introduction**

My name is _____. I am a researcher at OHSU and will be the moderator of this focus group. _____ is our note taker. Thank you for participating in this focus group. The purpose of the focus group is to discuss your experiences and your opinions about how effectively your classes and clinical experience were able to prepare you to interact with patients and colleagues, and to identify ways of how sociocultural and behavioural factors influence health. The NIH wants to know how well prepared you feel. The goal is to improve the curriculum, so we want both your positive and negative feedback.

By being here you're consenting to voluntarily participate in this research study. Our conversation today is confidential so that each of you will feel comfortable sharing potentially sensitive thoughts and feelings. This focus group session will be tape-recorded. A code will be used for you rather than your name in all focus group transcripts so that nobody except those of us in the room will know who said what. The point of the focus group is for you to engage in a conversation. My participation will be minimal. You don't need my permission to speak. Talk amongst yourselves. My job is to guide the discussion and to be certain all voices are heard. Please be respectful of each other as you share your ideas. Thank you for your participation. Since you already know each other we will begin without introductions. Just so you know I'm not affiliated with curriculum development or the grant project.

Specific topic questions

I'm going to be asking for feedback on two overarching curriculum domains: doctor-patient interaction and sociocultural factors influencing health and health care. Take a moment now and think back to clinical and classroom situations during your four years of medical school where you have learned about and experienced doctor-patient interactions and sociocultural factors influencing health. We are interested in knowing about which teaching strategies and experiences helped you become a caring doctor who is socioculturally sensitive.

Let's begin by talking about doctor-patient interaction. Provide an example to illustrate to us how well prepared you feel to engage in the doctor/patient encounter. And let us know what classes or situations allowed you to learn those skills.

- Probes

Mind-body interactions in health and disease

- Biological mediators between psychosocial factors and health.
- Psychosocial factors in chronic disease.
- Psychosocial aspects of human development that influence disease and illness.
- Psychological aspects of pain.
- Somatisation – psychosocial, biological and management issues.
- Interaction among illness, family dynamics and culture.

Patient behaviour

- Health risk behaviours.
- Principles of behaviour change.
- Impact of psychosocial stressors and psychiatric disorders on manifestations of other diseases and on health behaviour.

Physician-patient interactions

- Basic communication skills.
- Complex communication skills.
- Context of patient's social and economic situation, capacity for self-care and ability to participate in shared decision making.
- Management of difficult or problematic physician-patient interactions.

We would also like to spend some time talking about how you address sociocultural components of health and health care. Provide an example to illustrate to us how well prepared you feel to address the sociocultural components of health and health care. Let us know what classes or situations helped you to learn those skills.

- Probes

Box 1 Continued

Physician role and behaviour

- Ethical guidelines for professional behaviour.
- Personal values, attitudes and biases as they influence patient care.
- Physician well-being.
- Social accountability and responsibility.
- Work in healthcare teams and organisations.
- Use of and linkage with community resources to enhance patient care.

Social and cultural issues in health care

- Impact of social inequalities in health care and the social factors that are determinants of health outcomes.
- Cultural competency.
- Role of complementary and alternative medicine.

Health policy and economics

- Overview of US healthcare system.
- Economic incentives affecting patients' health-related behaviours.
- Costs, cost-effectiveness and physician responses to financial incentives.

Closure

Thinking back on our discussion, do you have any other final thoughts on how the curriculum has prepared you to practise as a clinician who sees the patient as embedded in a larger sociocultural environment and is responsive to individualised communication and intervention?

Thank you for your time and ideas. You have made an important contribution to enhancing the curriculum quality at OHSU.

'They've made the honest ivory tower effort to make sure that we were exposed and we actually thought about a lot of these things.' (#22)

Although students acknowledged the exposure to and discussion of BSS topics, the 'ivory tower' comment reflects a concerning and pervasive disparity between classroom and subsequent clinical experiences (Table 1) throughout their reflections upon all six IOM domains.

Health policy and economics

In the case of health policy and economics they felt unprepared to decipher the healthcare system themselves. Further, they enjoined:

'How do we expect our patients to be able to navigate a system that we don't comprehend?' (#24)

Patient behaviour

Similarly, students related that although the curriculum did teach them strategies to guide patient behaviour, they felt these scripts were too regimented.

Some preceptors offered students examples of gentle encouragement and celebration of small steps in behaviour modification that contrasted with their didactic training.

'I would go in and I would say "Oh, you need to stop [smoking]. You need to do this. You need to do that"'. Then my physician would come in and say "Oh, ok. Just half a pack now? That's great!"' (#21)

Physician–patient interaction

Students reported their first exposure to appropriate physician–patient interaction was in the classroom in the form of assigned readings, lectures, problem-based learning and role playing. However, observing and participating in actual clinical encounters primarily informed the type of physician–patient interaction skills students developed. Students reported a wide range of behaviour modelling with regard to physician–patient interactions.

'I had a lot of great role models to watch in my clinical experiences. Outside of school I had trial by fire experiences. I felt school really prepared me to be flexible and just be willing to adapt and not assume anything about patients.' (#25)

Table 1 Major themes identified by focus group participants regarding the BSS curriculum

IOM domain	Sense of preparation
Health policy and economics	Strength: Good exposure to alternative models of health care (e.g. VA, medical home, rural practice, free clinics) Weakness: Scant sense of prices of procedures and products, no knowledge of billing, no acknowledgement of the personal debt burden students carry and what healthcare reform and specialty mean to individuals
Patient behaviour	Strength: Motivational interviewing class, some good modelling Weakness: Inadequate instruction on how to deal with modification of patient behaviour in delicate or challenging situations such as sexually transmitted diseases and irritable bowel syndrome. Inadequate preparation for conflict resolution with no instruction available in the clinical years
Physician–patient interaction	Strength: Didactic training in the first two years helped students to value a patient-centred model of care. Palliative care and psychiatric rotations offer more consistent patient-centred care, debriefing and self-care focus Weakness: Clinical modelling of a patient-centred model of care was inconsistent at best
Physician role and behaviour	Strength: Professionalism very well covered in the first two years of classes Weakness: Professionalism inconsistently mentored in the clinical setting, no emphasis on self-reflection and development of emotional intelligence, teamwork is mostly titular and students feel disenfranchised through much of the process
Mind–body interaction	Strength: Exposed to didactic evidence for mind–body interaction Weakness: Presented in a way that sets it in direct conflict with the biomedical paradigm and thus very difficult to understand or incorporate into clinical practice; clinical mentors largely sceptical of mind–body interaction (with notable exceptions)
Social and cultural issues in health care	Strength: A lot of didactic exposure. Free clinics presented real-life experience with cultural differences Weakness: The principles of cultural sensitivity are not internalised and not modelled or reaffirmed in the clinical setting. Books, essays and reports are an inadequate way to internalise cultural sensitivity
Emergent themes	
Mentor modelling third and fourth years	Strength: Some mentoring, particularly in family medicine, palliative medicine and psychiatry BSS centred Weakness: Most mentors do not apply the principals of BSS to clinical practice
Timing and orchestration of BSS courses	Strength: Solid exposure to BSS in first two years of curriculum Weakness: No recursiveness to BSS curriculum once students are in third and fourth year. BSS curriculum taught as something outside standard medical curriculum
Dissonance between BSS culture and biomedical culture	Strength: Students recognise the disparity between the values of BSS and dominant biomedical values Weakness: It is hard for students to practise patient-centred culturally sensitive care in the extant biomedical culture

Perhaps because of their BSS training students were able to recognise effective and ineffective communication by clinicians. For example, one student reported that while it was clear to her in certain situations that patients were confused, physicians often did not appear to be aware that adequate communication was not occurring.

‘Sometimes I can understand what the attending is saying [in Spanish] because I know the accent. But a lot of the times the patient just doesn’t know what’s going on. So afterwards I would come back and be like “Did you understand what was said?”’ (#16)

Physician role and behaviour

Above all, students agreed that the concept of professionalism was thoroughly covered during the first two years of the curriculum. Students recalled classroom presentations of case after case of appropriate and inappropriate behaviour. However, there appeared to be a breakdown between the didactic professionalism students are presented with in the classroom and the professional modelling they experience in their rotations.

'Maybe it's a credit to our classroom experience that we can right away identify in a clinical setting what we are uncomfortable with ... If we have an experience where we see unprofessional behaviour again and again and again in a certain specialty it's going to turn us off from that specialty.' (#24)

Unlike other BSS domains, students appeared to feel uneasy about their ability to understand and work with mind-body interactions and social and cultural issues in health care.

Mind-body interactions in health and disease

Students admitted they did not feel well equipped to differentiate symptoms arising from the physical body versus the mind. Part of this could be secondary to what students reported as a prevalent attitude of physician role models toward patients without clear-cut diagnoses as either suffering from somatisation or 'faking it'. One student concluded that this physician attitude was 'just so pervasive that it was astonishing to me!' (#27)

'People think "Oh, it's chronic pain. It's fibromyalgia. It's something that you can't do anything about". [The assumption is] people who are in that are kind of controlling it in some kind way. They're getting some kind of benefit from the disability, or the narcotics, or whatever.' (#21)

Social and cultural issues in health care

Students asserted that the curriculum did a 'pretty reasonable job' of teaching sociocultural elements of health and health care. One student, however, raised questions about the teaching methodology and timing of cultural training.

'You can't teach someone cultural [sic] in a classroom. You've got to experience it.' (#8)

Students reflected that teaching culture through interviewing someone from a different culture, read-

ing a book, or writing an essay might not be the best way to inculcate culturally sensitive behaviour.

'Why are we just talking to them? Is talking to this person and interviewing them the best way to understand? What about actually going and serving alongside this person?' (#26)

Students acknowledged the overall breadth and depth of BSS didactic training during their first two years, but maintained that the curriculum was perceived as separate from patient care, despite the fact that these students are in clinical preceptorships for four hours every week during the first two years of the curriculum. They saw primary limitations to applying the BSS principles revolved around the structure of the curriculum, inconsistent modelling of BSS principles in the clinical setting, and the dissonance between the culture of biomedicine and BSS values.

Structure of the BSS curriculum

Students wished core elements from the first two years of education could be revisited and contextualised in the second two years.

'As a first- and second-year student things are presented out of context. You really don't have much clinical contact. You haven't had to face an angry patient. You haven't had to face a dying patient. You have to go off your imagination of what it would be like to be in those scenarios. Whereas as a fourth year there are a lot of those things where you're like "Gosh, I wish I would have paid attention to that [in the first and second year]".' (#25)

Students suggested reintroducing BSS themes into the third and fourth year curriculum in an interdisciplinary setting that would enable learners to bring their relevant experiences to the discussion.

'We get introduced to a lot of things in the first 2 years that at some point become relevant in the third and fourth years, but are never really explicitly readdressed.' (#13)

Modelling of the BSS principles

Students repeatedly offered examples of authoritative care models that were not patient-centred and provided patient care inconsistent with principles taught in the BSS curriculum.

'It seems like a lot physicians don't explain things well ... Two years ago I felt like I was kind of in-between. Like I could understand what they were saying, but I also knew that the patient had no

idea what they were saying. You can watch and the patient usually isn't very empowered to say "Hey, I don't know what you're saying. Can you rephrase it?" Instead they just say "Okay. Sure". They're just getting hit with this foreign language. It seems like that happens a lot with a lot of physicians. The physician/patient communication has quite a bit of breakdown.' (#14)

Although no student described the patient-centred model of care with shared decision making, one student edged toward that model as she described the type of physician-patient encounter she wished she could experience:

'The one thing that is useful is instead of saying to the patients, "This is what we want you to do", and "These are things you need to do", and "You call us if this happens", I think it's useful for us to explain the underlying reason, which we forget to do sometimes ... Kind of explain why you're thinking what you're thinking.' (#12)

Students reported that in general they did not feel comfortable talking with attendings or residents when they witnessed problematic physician-patient interactions. Instead, they made promises to themselves not to be like the role models they witnessed.

Cultural dissonance between the BSS and biomedicine

Part of the reason BSS did not migrate adequately from the classroom to the clinical setting appears to be the still competing cultural paradigms of BSS and biomedicine. Students observed that the BSS curriculum components of mind-body medicine and the sociocultural aspects of health care did not conform well to biomedical and economic values, including the pace of the clinical interaction. Students with an interest in mind-body medicine were not comfortable talking about it with attendings and residents.

'There's lots of really fascinating [neuroscience] research going on, like conversion disorder ... I just didn't feel comfortable presenting it to the group of resident physicians because I didn't want to be scoffed at.' (#27)

Students feared that mind-body medicine remained at odds with the tenants of biomedicine even when it was presented in the idiom of research.

Although students recalled reading culturally sensitising materials such as *The Spirit Catches You and You Fall Down*, those principles were perceived as being low priority or even intrusive real-life medical practice. At least one student related that the expectation to provide culturally sensitive care at

times actually impinged on the accepted application of biomedicine:

'It's a frustrating idea that in an emergency situation if you somehow don't understand the importance of somebody muttering that they're a Christian Scientist and go ahead and perform a surgery on them that you could get sued. I think that seems ridiculous to me.' (#12)

Rather than respecting a patient's known belief system, a patient's unwillingness to go along with a physician's plan was not only seen by the student as a liability to the patient, but to the physician as well.

Culturally sensitive care was also considered to be too time-consuming. This was evidenced from student reflections on 'The Kleinman Questions',³⁷ a series of questions developed by the physician/medical anthropologist Arthur Kleinman over 30 years ago to elicit information about the patient's health paradigm. Students recalled these questions were 'drilled' into their heads during the first two years, but note that they had never observed anyone use them in clinical practice and that they have ceased to think in that manner.

'[The Kleinman Questions] may be useful to consider if you recognise that there is a disconnect between the patient's understanding or belief in what is wrong with them and the team's. That disconnect is recognised far less than it probably exists ... It does come up, only when it creates a problem. And only when it creates a problem that the physician sees.' (#13)

While time pressure might prevent providing culturally sensitive care, students gave multiple examples of how health care delivery dramatically slowed when cultural components of health were not considered. Although students described extensive curricular exposure to Jehovah's Witness beliefs as they relate to health care, one student illustrated how knowledge does not always translate into practice. In the example, a Jehovah's Witness patient deemed to be in need of blood products, did not want blood products.

'It was really hard for the attending and the team as a whole to come to terms with [the patient's] decision and to try to understand. Finally, we got a consult from the Ethics Committee or Palliative Care who found an article about Jehovah's Witnesses ... It helped us understand where he was coming from.' (#17)

A consultation with experts was required along with evidence from the literature to finally allow a team to permit a patient to receive the type of care he preferred.

Discussion

For the most part, fourth-year medical students in our OHSU focus groups believed that the curriculum topics recommended by the IOM were thoroughly covered in the first two years of medical school. In contrast to medical students at other institutions,¹⁵ we found that OHSU medical students valued the IOM domains of health economics and policy, physician–patient interaction, patient behaviour and physician role and behaviour. Furthermore, they believed that knowledge of those domains would benefit clinical practice. Students had more difficulty finding the clinical relevance of the IOM domains of mind–body interactions in health and disease and the social and cultural issues in health care, but desired more clinically oriented training in these domains. However, students reported that it was difficult for them to continue developing the conceptual and behavioural seeds sewn in the first two years of the curriculum when they advanced to clinical training.

Three factors were identified that limited the bridging of BSS across the four years of medical school: frontloading of BSS classes in the curriculum without reiteration in the clinical years, inconsistent BSS role-modelling during clinical rotations and a biomedical culture that is incongruent with BSS values.^{38,39} These are the same three limitations identified over 50 years ago in the US medical school curriculum,⁴⁰ and the same three limitations that have been repeatedly identified in other countries and over time.^{15,18,24,25}

The difficulty in addressing these barriers comes, in part, because they reside not only in the overt curriculum, but also in the hidden curriculum. The hidden curriculum are influences at the organisational structure and cultural level that are not overtly defined or often noticed by persons embedded in that structure.⁴¹ It was the hidden curriculum that the students spoke of when they discussed the dissonance between the BSS principles they were taught in the first two years of the curriculum and the practices they observed and participated in during the second two years of their training. Although successful integration of BSS principles in the curriculum and successful internalisation of the precepts within practitioners remains a challenge, the medical school curriculum has responded successfully to other challenges in the past such as incorporating problem-solving skills^{42,43} and clinical reasoning skills^{44,45} in the curriculum. However, the competing demands of learning new technology, compartmentalisation of patient encounters

and demands to see more patients in less time mean that deeper penetration of BSS into clinical practice would require a commitment from key stakeholders in each division of the medical school curriculum.

Other US medical schools are developing creative strategies to address the concerns identified by our students. For instance, the University of Michigan medical school has woven sociocultural content into general undergraduate courses rather than having stand-alone BSS classes. They also have faculty development materials and exercises to help faculty develop the requisite skills to help students become competent in BSS.⁴⁶ The University of California San Francisco medical school has integrated BSS throughout the curriculum in part by eliminating the 2 + 2 curriculum design and substituting three phases of learning: Essential Core, Clinical Core and Advanced Studies.²¹ We hope to continue developing the BSS curriculum at OHSU and recognise that the finest role models are attending physicians who have internalised key BSS values^{47,48} and that professionalism is partly taught through modelling.⁴⁹ Thus, training of clinical mentors is essential for full realisation of the BSS curriculum and patient-centred care.²⁶

Our study is limited by several factors. Focus group participants were not randomly selected and thus the sample might not have been representative and alternative opinions might not have been exposed. However, students related a wide range of experiences and perspectives. Although they differentially weighed the value of the BSS curriculum, student input did converge upon several themes that are also concordant with the published literature. Also, because the focus group was scheduled for only 90 minutes, all topics of interest were not able to be covered in detail, and thus we have an incomplete understanding of students' experience with the BSS curriculum. Focus groups might also become dominated by a few voices. However, the focus group moderators were trained to prompt quieter voices. Transcripts of the focus groups captured students drawing out each other and helping less vocal students to find their voice. We encouraged honest input by having the focus group at the end of the term and by assuring them that their names would not be associated with the transcript or findings. The potential biases inherent in analysis of qualitative data were ameliorated by presenting the transcripts to all researchers on the project and by providing a summary of the research findings to participating researchers and students and asking for feedback. Their input informed and further clarified the findings.

Conclusions

OHSU implemented BSS curricula to improve integration of behavioural health and social sciences into primary healthcare education. We found that the first two years of the medical school curriculum at OHSU was successfully modified to teach principles of behavioural and social science as recommended by the IOM, WHO and WONCA. Findings from our initial focus groups reflected that students exposed to the new curriculum largely felt didactic training in BSS has been extensive. Furthermore, they embraced most of the BSS precepts taught. However, they felt they would be better prepared to put BSS principles into practice if they received more continuous training and observed BSS more consistently integrated into patient care in their clinical rotations.

To further integrate BSS into students' clinical training, the OHSU Family Medicine Clerkship has taken steps to increase emphasis on BSS principles in both small group learning activities and clinical instruction. We are also specifically addressing BSS modelling in individualised faculty development meetings with clinical preceptors. From a broader perspective, focus group results have been shared with all third-year course directors and leadership in the School of Medicine. As a result, third- and fourth-year BSS integration will be addressed in an interdisciplinary manner through improved faculty development focused on the teaching and modelling of BSS principles throughout students' clinical training.

ETHICAL APPROVAL

Ethical approval was acquired from OHSU IRB for this study number 3773.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest. This paper has not been submitted elsewhere for publication and duplicate publication has been avoided.

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