

Teaching biopsychosocial competence and the principles of primary health care (PHC) at the patient's bedside

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Abstract

The importance of behavioural and social determinants in health was recognised long ago, yet we still grapple with the challenges of developing appropriate teaching pedagogies to bring these principles into routine clinical practice. A teaching pedagogy blending the biopsychosocial approach and the principles of primary health care (PHC), as expressed in the Alma-Ata Declaration of 1978, is lacking in the literature. This report hopes to address this need.

In 1994 the University of Cape Town (UCT), South Africa, adopted a PHC-based approach to health sciences education to equip its graduates with the necessary knowledge, skills and attributes required to meet the challenges of providing health care in a country

with vast socio-political inequalities. This paper describes an educational pedagogy which weaves these principles into clinical practice in an undergraduate medical clerkship. The methodology uses real patient encounters linked to an interactive seminar and a portfolio of case studies.

Students described the teaching pedagogy as interesting and informative. They recognised the importance of holistic, patient-centered care based on a biopsychosocial approach and the importance of the PHC principles. Barriers to implementing this approach were also highlighted. The pedagogy, in use for four years, is being adopted by another department, indicating the sustainability and success of the course.

Introduction

The need for physicians to recognise the importance of behavioural and social factors in human health and illness is not disputed.¹ Engel's pioneering work on the biopsychosocial model of illness challenged us to 'see our patients as united, biopsychosocial persons rather than biomedical persons divorced from their psychological and social dimensions'.² In 1978 an international conference on PHC in Alma-Ata described a health care approach aimed at protecting and promoting 'the health of all people of the world'; this was reinforced by The World Health Report 2008.^{3,4} Over the past three decades these two key developments have led to an international recognition of the critical elements of holistic health care and an acquired state of fluency which draws upon appropriate knowledge, skills and attitudes enabling practitioners to offer culturally responsive care.⁵⁻⁷ Statutory bodies regulating the training of health professionals in the USA and Canada (Liaison Committee on Medical Education) and the UK (General Medical Council) now require cultural competence teaching in medical training programmes, and guidelines have been developed in the USA to facilitate this process (Association of American Medical Colleges).⁸⁻¹⁰

Despite the importance of this key component of physician education, health sciences faculties are still grappling with the challenges of developing teaching pedagogies that address these issues in the clinical teaching context. A recent paper from the USA provided an excellent outline of a preclinical curriculum that teaches students about social and behavioural factors that influence health care delivery, but a teaching model for the clinical years was not mentioned.¹¹ The lack of biopsychosocial competence teaching in the clinical setting was highlighted by a US report in which senior medical students and postgraduate trainees indicated that they recognised the need for a biopsychosocial approach to patient

care, but lacked effective training in this approach. Of most concern was the observation that few students indicated an interest in receiving further training in the psychosocial aspects of clinical practice.¹ The need to address the challenges faced when teaching a biopsychosocial approach to illness in real clinical practice is apparent.

There is limited literature about the factors that constrain the teaching of psychosocial determinants of health and illness at the bedside. A recent paper identified three key barriers to implementing a biopsychosocial approach to patient care when teaching medical students and postgraduate trainees: a lack of time to explore psychosocial determinants of health and illness; physicians' lack of expertise in teaching this approach; and discomfort with the feelings of uncertainty that arise when addressing psychosocial factors in the clinical setting.^{1,12,13}

An interesting approach to teaching biopsychosocial competency at the bedside has been suggested by Kleinman and Benson (2006). They suggested that an ethnographic approach in the use of mini-ethnographies could bridge the divide between the biomedical model of illness and the psychosocial determinants of illness and health. The core feature of an ethnographic approach is that it attempts to describe 'what life is like in the world of the patient'.¹⁴ For physicians with limited experience in the use of this anthropological method, Kleinman and Benson recommended that patient interviews should focus on five psychosocial aspects: the patient's ethnic identity; what is at stake for the patient and their family as they face the current illness; what the illness means to the patient, including its cultural meaning; psychosocial stressors associated with the illness and its treatment; and the impact of culture on the clinical relationship with the patient, as perceived by the physician. In so doing this approach blends the biopsychosocial approach with the philosophy of PHC as iterated in the Alma-Ata Declaration 1978.³

In this paper we describe an educational strategy in which an anthropologist facilitates the use of the biopsychosocial model as expressed in mini-ethnographies to teach medical students a comprehensive and holistic approach to patient care at the bedside. We chose this setting because 'novices learn best to apply technical knowledge within skilled actions in rich, relevant contexts'.¹⁵ This context also reinforces the development of the professional identity of the student.

Table I. Principles of primary health care

- Promote equity and human rights in health care
- Display biopsychosocial and cultural sensitivity towards the patient
- Practise health promotion at the individual and population level
- Promote evidence-based health care
- Treat patients at the appropriate level of care
- Promote multiprofessional health care
- Promote broad intersectoral collaboration
- Encourage communities to assert their rights and interests
- Monitor and evaluate the efficacy, efficiency and equity of health services

Background

In 1994, when the first democratic government of South Africa was elected, apartheid was abolished and the new government pledged itself to an equity-driven approach to health care. The foundations of this approach were embedded in the principles of PHC as laid out in the Declaration of Alma-Ata in 1978. With the advent of the new government in South Africa, the Faculty of Health Sciences at the University of Cape Town adopted a PHC-based approach to education in order to equip its graduates with the knowledge, skills and values necessary to meet the changing demands of health care in a country with vast social, political and economic inequalities. The faculty adopted a single definition of PHC as 'an approach to health care that promotes the attainment by all people of a level of health that will permit them to live socially and economically productive lives. PHC is health care that is essential; scientifically sound (evidence-based); ethical; accessible; equitable; affordable; and accountable to the community'.¹⁶ Nine key principles outlining the PHC approach, shown in Table I, were used to design a cross-disciplinary PHC theme spanning all six years of the MB ChB programme.¹⁷ Within the PHC theme, three sub-themes were identified:

- culture, psyche and illness
- health promotion
- evidence-based practice.

The biopsychosocial model is the paradigm that 'enfolds' knowledge from different disciplines, and the ethnographic model has been incorporated into this approach to teach students a multidisciplinary approach to patient care. The purpose of the paper is to demonstrate how the biopsychosocial model has been interleaved in the teaching of PHC principles. We understand PHC to be a philosophy and approach, rooted in the mandate given in the Alma-Ata Declaration. Rather than PHC being a public health approach to medicine, the faculty embraces PHC as an interdisciplinary approach which should be implemented and function at all levels of the health system as an integrated approach.

Table II shows how these sub-themes were integrated into the pre-clinical and clinical courses offered in the programme. For the purpose of this paper we will restrict our focus to the 'culture, psyche and illness' sub-theme and describe how clinical teaching around this sub-theme was developed and integrated into a fourth-year medical clerkship at the University of Cape Town.

Course design

The 'culture, psyche and illness' component of the PHC theme specifically focuses on four PHC principles: cultural sensitivity and the biopsychosocial model of illness; the role of multi-professional teams; intersectoral collaboration in health care provision; and pathways to care. In the first three years of the MB ChB programme the disciplines of psychology and anthropology teach students 'psychosocial' theory; this is integrated into the cases used in the problem-based learning curriculum adopted by the faculty in 2001. At this early stage students learn about the biopsychosocial model of illness and how to develop biographies drawn from mini-ethnographies and psychological narratives. All summative assessments in the preclinical years focus on learning objectives derived from both the basic sciences as well as the social sciences components of the integrated courses offered.

Fourth-year students rotate through a 12-week general medicine clerkship and are required to develop a portfolio of 32 patient encounters which must include mini-ethnographies for at least 15 patients interviewed. The ethnographies need to provide a description of the patient's experience of the illness from a personal and cultural perspective, the impact of the illness on their family, any psychosocial stressors related to the illness and any other points raised by the patient during the interview. The case histories also need to reflect on any other PHC principles relevant to the patient's health care experience. Students learn to construct these mini-ethnographies based on their prior learning and active participation in a 2-hour seminar centered on real patient encounters in a busy district hospital.¹⁸

The pedagogy, developed in 2005, commences with a ward round jointly conducted by a senior physician (VB) and a medical anthropologist (LV), who review newly admitted patients and select those who best demonstrate psychosocial and/or ethnocultural issues relevant to their illness experience and/or demonstrate other PHC principles important to their care. The anthropologist notes down the patient's details, the biomedical diagnosis, psychosocial and/or ethnocultural issues relevant to the illness presentation and other PHC principles relevant to the case. Medical students attending the ward round are then sent, in pairs, to interview the selected patients and any family present at the bedside. In a 20-minute interview they are expected to develop a mini-ethnography using the three-stage approach. Students are specifically instructed not to focus on the biomedical diagnosis, and an observational, empathic approach to the interview is stressed. An example of mini-ethnography is shown in Box 1. After completing the patient interviews students participate in a seminar (8 - 10 students) in which the patient ethnographies are presented and the anthropologist uses 'trigger questions' to focus the discussion on the PHC principles relevant to the patients interviewed. During the seminar particular emphasis is placed on the importance of a psychosocial, including ethnocultural, interpretation of illness from the patient's perspective.

Course assessment

Each portfolio of fifteen ethnographies is assessed using a structured interview in which two cases are selected for discussion, focusing specifically

Table II. Components of the primary health care theme in the MB ChB programme at the University of Cape Town, South Africa

Year of programme	Course name	PHC theme focus within the course
1st year	Becoming a Health Professional Part IA	The principles of PHC and the concept of a District Health System
2nd year	Integrated Health Systems Part IA	Biopsychosocial and cultural issues; relevant PHC principles
	Becoming a Doctor Part IA	PHC and equity in global health; introduction to evidence-based medicine
	Becoming a Doctor Part IA	Health promotion and the principles of developing health education messages
	Becoming a Doctor Part 1B	Introduction to health promotion approaches and behaviour, and health promotion ethics
	Special Study Modules	<ul style="list-style-type: none"> • Alternative medical practices, e.g. acupuncture • Medical anthropology methods • Bringing medical practice to students • Collaborative role of traditional healers in health care, cultural beliefs and folk illnesses
3rd year	Integrated Health Systems Part 2	Biopsychosocial and cultural issues; relevant PHC principles
	Becoming a Doctor Part 2A	Causation and evidence
4th year	Public Health	Introduction to PHC principles, specifically equity, evidence-based practice and human rights
	Primary Health Care/Health Promotion	Ethics of health promotion, including community participation and partnerships; behaviour change theories and health promotion approaches, planning cycle process (models)
	Medicine	Teaching biopsychosocial competence and PHC principles at the bedside
5th year	Primary Health Care Elective	All PHC principles relevant to the setting of the clinical attachment
6th year	Family Medicine	Evidence-based practice, health promotion, culture psyche and illness

on psychosocial and/or ethnocultural issues relevant to the presenting illness and health care-seeking behaviour as well as other PHC principles demonstrated by the patient's health care experience. This portfolio-based interview forms part of a series of four portfolio interviews, each of 15 minutes' duration, in which a panel of examiners discusses cases from the portfolio relevant to primary health care, internal medicine, psychiatry and obstetrics. Each station uses its own scoring method based on the original model described by Burch and Seggie.¹⁹ The scores achieved at the medicine station and the PHC station both contribute to the final course mark for internal medicine in the fourth year.

Course requirements

The course requires three core elements:

- A medical anthropologist who has sufficient social science expertise to critically analyse a patient's place in his/her larger community's social and cultural framework, its belief systems and biases. S/he needs to be able to make inferences about psychosocial factors relevant to the illness based on astute observation and verbal and non-verbal communication. The anthropologist should also be comfortable working in a busy clinical setting and must be able to probe prior knowledge and facilitate analytical thinking.

- Students who have sufficient social science and psychology theory to participate in a discussion of illness experiences, health-seeking behaviour and beliefs that are culturally bound. They also need to be familiar with the nine PHC principles described in the University of Cape Town curriculum, be able to perform a three-stage (biopsychosocial) patient assessment and have a broad overview of the socioeconomic and political determinants of health and illness in South Africa.
- A clinician who is familiar with the concept of ethnography and a three-stage patient assessment as well as the PHC principles described by the faculty. In addition, time needs to be apportioned to case identification on busy ward rounds. The latter is a particular challenge but the provision of holistic patient care informed by the PHC principles, as endorsed by the faculty, constitutes an essential part of student education at the University of Cape Town.

Course evaluation

By 2009, a total of 590 students had participated in the course. We selected a convenience sample of 73 students in 2009 to provide anonymous written feedback about their experience of the interactive seminar sessions. Students are randomly assigned to groups in the fourth year of

Box 1. Mini-ethnography based on a patient interview

Biomedical diagnosis provided by the senior clinician

A 28-year-old Xhosa-speaking black African female presents with a crusting skin rash covering her entire body except her face. Skin scrapings confirm a diagnosis of Norwegian scabies. She also has a right pleural effusion due to active pulmonary tuberculosis (TB). Her previous medical history includes an episode of pulmonary tuberculosis in 2004 at which time she was told that she was HIV-positive. She has never attended an HIV clinic, does not know her CD4 count and is not receiving antiretroviral therapy.

Personal context derived from the student interview

She lives with her mother and brother and 'they don't know I am HIV'. She had two children but one was taken away by a traditional healer at the age of seven and the other child 'died from HIV' in 2004. She also says that she was raped by her stepfather when she was younger and says 'I tried to kill myself' three years ago. For the past three years she has been too weak to work and stays at home most of the day. She cannot apply for a disability grant because she does not have a birth certificate.

Social context derived from the student interview

She says that she has been too frightened to tell anyone 'about my HIV' because she is scared that her family will 'throw her out of the house'. She says she does not want to visit an HIV clinic because 'then everyone will know that I have HIV'.

PHC principles relevant to the case discussion

Equity

The HIV pandemic in South Africa raises major issues about equitable care for all infected patients. Public sector budgetary constraints and the scale of service required limit access for the poorest to basic primary care, which is overburdened and overcrowded. In this setting confidentiality is difficult to maintain and patients with HIV infection are often required to attend an 'HIV clinic', which automatically discloses their status to the broader community. In contrast, patients with health insurance have access to the best available care and confidentiality is easy to maintain.

Intersectoral collaboration

This patient needs a birth certificate so that she can apply for a temporary disability grant because she is not fit to work in her current state. Since she is only barely literate, the doctor looking after her in hospital will need to help her apply for the birth certificate from the Department of Home Affairs. Once she has a birth certificate she will be able to apply for a disability grant from the Department of Social Services. Once again she will require medical assistance with this application process.

Multiprofessional health care

This patient requires intensive counselling by an HIV counsellor to bring her to a point where she can accept her HIV status and seek appropriate health care. Ideally she should also be seen by a community psychiatry liaison nurse to determine whether she is still clinically depressed (previous suicide attempt) and whether she requires therapy for depression. She also needs to be seen by a doctor to be assessed for antiretroviral therapy and she needs to attend the local TB clinic for the next six months.

Table III. Results of student evaluation of the interactive case-based seminars

Categories	Themes
Educational value of seminars	<ul style="list-style-type: none"> Based on real patient encounters Made learning more interesting Reinforced prior learning Learnt from peers Showed how to integrate PHC principles and biopsychosocial approach Challenged perceptions and perspectives
Personal benefits derived from seminars	<ul style="list-style-type: none"> Importance of good communication skills Holistic approach to taking a history Improved critical thinking skills Improved observation skills
Importance of biopsychosocial approach to patient care	<ul style="list-style-type: none"> Patient-centered Holistic patient care Improve patient care Does not take too much time
Importance of PHC principles in clinical practice	<ul style="list-style-type: none"> Applicable at all levels of care Does not take too much time Easily integrated into clinical practice PHC principles not practiced by doctors
Challenges to implementing PHC principles in clinical practice	<ul style="list-style-type: none"> Resource constraints limit holistic care Doctors don't know about PHC principles A negative attitude to PHC

study and there was no reason to consider an element of systematic bias in the groups surveyed. The Research Ethics Committee of the University of Cape Town granted approval for this aspect of the project. Two open-ended questions were used to prompt student responses: (1) Did you benefit from the teaching methodology; and (2) What did you learn from the process?

The written responses were reviewed by applying the principles of thematic analysis.²⁰ An open coding process was used to identify key responses and develop themes. The codes were reviewed and grouped into 21 themes. The raw data were then reviewed to ensure that no emerging themes were missed during the initial coding process. The coding process was verified by another researcher. The themes were then arranged into five categories empirically derived from the data. The five categories were:

- The educational value of the case-based seminars
- Personal benefits derived from participation in the case-based seminars
- The importance of a biopsychosocial approach to patient care
- The importance of PHC principles in clinical practice

- Challenges to implementing PHC principles in clinical practice.

The results are shown in Table III and some examples of students' comments are listed in Box 2.

The feedback demonstrated that students enjoyed the interactive learning activity centered on real patient encounters. Their prior knowledge was reinforced and this also facilitated peer teaching. An unanticipated positive outcome of the seminars was a perception on the part of the students that other skills were also improved; these included communication, critical thinking and direct observation of the patient. The feedback received from the students made it clear that minimal extra time was required to apply the biopsychosocial model of illness to patient assessment and that the model was applicable at all levels of care, i.e. not only at the primary care clinics in the community. The students also felt that a patient-centered holistic approach was likely to improve patient care. Aside from all the positive comments, students also pointed out that there were challenges to implementing the PHC principles in clinical practice. These included the observation that clinicians did not routinely apply PHC principles to clinical practice in the teaching environment; resource constraints appeared to limit implementation of holistic care; a lack of understanding of PHC principles by clinicians and a negative attitude towards PHC by some clinicians and students.

Box 2. Quotes from student feedback

Educational value of seminars: 'Yes, the approach of letting students go to the ward and practise and actually bring back the information puts the student in the situation of actually taking into consideration not only the history and diagnosis but also the family and social situation, including education and doctor-patient relationships.'

Importance of biopsychosocial approach to clinical care: 'Lots of issues have to be considered when seeing a patient. It is very important to look at the biopsychosocial circumstances of a person so that the best possible treatment can be given. PHC is very important in assessing the patient completely and ensuring that we do our jobs efficiently.'

Importance of biopsychosocial approach to clinical care: 'Culture and psyche play an important role in illness and the outcomes thereof; therefore we as health practitioners need to pay special attention to these issues. Also how the system operates plays an important role. It can assist or hinder the process.'

Importance of PHC principles in clinical practice: 'I learned that PHC principles are actually quite easily integrated into general medicine – it really takes only a few minutes to ask them PHC-related questions that are extremely essential in the diagnosis, and probably the treatment of the patient as well.'

Importance of PHC principles in clinical practice: 'I learnt that PHC principles apply to all patients in some way; that dealing with the primary health care issues at hand can actually help in the recovery process of patients and assist in health promotion.'

Challenges to implementing PHC principles in clinical practice: 'It is very easy to do the medical approach to the patient, as we learn from our superiors. We need to remind ourselves that we are treating patients and not diseases. It would be nice to have a way of reminding students of this on a regular basis.'

Personal benefits derived from seminars: 'I learnt that taking a few minutes in a history-taking consultation to ask some important questions can give imperative insight into the patient and their needs.'

Sustainability

This project, in place since 2005, demonstrates the feasibility of using a combined approach of case-based seminars and a portfolio of patient ethnographies to teach biopsychosocial competence at the bedside. Based on the current success of the course it is being extended to include a paediatric clerkship in the fifth year of the MB ChB programme, thereby further increasing student exposure to key principles of PHC and a biopsychosocial approach to health care. This will reinforce transfer of these skills to other clinical settings. Furthermore, the Education Development Unit in the faculty has recognised the need to teach clinician educators about the principles of PHC, including a biopsychosocial approach to clinical care. A teaching module focusing on these aspects has been included in the faculty development programme for clinician educators working in the University of Cape Town-affiliated teaching hospitals.

Conclusion

This paper demonstrates that the principles of PHC and a biopsychosocial approach to patient care can be taught at the bedside using ethnographic methods. Not only is the method feasible and sustainable, but the students readily perceived the educational benefits and broader implications of the skills learnt.

The integrated approach described in this paper casts the net much wider than cultural competence since it also incorporates the relevant PHC principles contained in the Declaration of Alma-Ata. These principles have not received enough emphasis in the current literature, which mostly focuses on ethnocultural competence and to some extent on socioeconomic and political factors as relevant to developing country immigrants living in developed world countries – so-called transnational competence.^{5,21}

The benefit of bringing a medical anthropologist to the bedside to teach medical students about the broader aspects of health care that lie outside the strict biomedical approach is not widely appreciated. As can be seen from our work, clinicians and anthropologists can bring complementary aspects of health care together in a seamlessly integrated manner without the need for clinicians to learn about the finer details of anthropology or for anthropologists to learn about biomedical diagnoses. Indeed, the combined approach led by a clinician emphasises the importance of a holistic approach to patient care and directly addresses the misconception that learning about the psychosocial components of a patient's illness is 'soft science'. This addresses Astin *et al.*'s three barriers to implementing the biopsychosocial approach by allocating dedicated time in clinical settings where students and clinicians have to engage in an often uncomfortable discourse on holistic care.¹ Our feedback data show that students recognised the importance of the comprehensive model of health and illness. As one student commented: 'I think this method is more practical, less "airy-fairy" and less idealistic (my early perception of PHC)'.

The major limitation of this study is that it only reports student perceptions about the educational value of this approach to bedside teaching. A study is being designed to evaluate the impact of this learning experience on the routine clinical practice of students in subsequent years of study. The relationship between the latter and student performance in the final examination will also be evaluated. We do not report the summative assessment results of student performance in the oral assessment (OSCE).

The need to take the biopsychosocial model of patient assessment and a PHC-driven approach to treatment plans to the bedside is long overdue. This paper makes a contribution to the literature by describing a simple strategy which advances interdisciplinary and complementary approaches to health care and provides students with authentic learning

opportunities which facilitate their learning of the fundamental principles of holistic patient care, perhaps the most important learning outcome of any medical training programme offered across the globe.

Declaration of interest

The study was reviewed and passed by the Human Research Ethics Committee at the University of Cape Town. The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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