Assessing the extent of utilization of biopsychosocial model in doctor–patient interaction in public sector hospitals of a developing country

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Background: Biopsychosocial (BPS) model has been a mainstay in the ideal practice of modern medicine. It is attributed to improve patient care, compliance, and satisfaction and to reduce doctor–patient conflict. The study aimed to understand the importance given to BPS model while conducting routine doctor–patient interactions in public sector hospitals of a developing country where health resources are limited. The study was conducted in Rawalpindi, Pakistan.

Materials and Methods: The study design is qualitative. Structured interviews were conducted from 44 patients from surgical and medical units of Benazir Bhutto Hospital and Holy Family Hospital. The questions were formulated based on patient-centered interviewing methods by reviewing the literature on BPS model. The analysis was done thematically using the software NVivo 11 for qualitative data.

Results: The study revealed four emerging themes: (1) Lack of doctor–patient rapport. (2) Utilization of a paternalistic approach during treatment. (3) Utilization of a reductionist biomedical approach during treatment. (4) Patients’ concern with their improvement in health and doctor’s demeanor.

Conclusion: The study highlights the fact that BPS is not given considerable importance while taking routine medical history. This process remains doctor centered and paternalistic. However, patients are more concerned with their improvement in health rather than whether or not they are being provided informational care. Sequential studies will have to be conducted to determine whether this significantly affects patient care and compliance and whether BPS is a workable model in the healthcare system in the third world.

Key words: Behavioral science, biomedical approach, biopsychosocial model, doctor centered, medical interview, patient centered

INTRODUCTION

World Health Organization defines health as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”[1] This definition, therefore, elaborates and underscores the role of healthcare professionals, suggesting that doctors are not just responsible to treat the organic cause of a patient’s ailment but are also required to take into account its psychosocial aspects. George L. Engel, realizing the need for an inclusive model of healthcare, put forth biopsychosocial (BPS) model. He states that “The dominant model of disease today is biomedical, and it leaves no room...
within its framework for the social, psychological, and behavioral dimensions of illness. A BPS model is proposed that provides a blueprint for research, a framework for teaching, and a design for action in the real world of health care. Since Engel’s proposal, the BPS model has remained a frequent topic of research and discussion, but its proper application in a clinical setting remains obscure and subject to interpretation. Some researchers support the model and conclude that patient-centered application of BPS model has the potential to make practice of medicine more scientific as well as humanistic. BPS model has been regarded as a way of guiding application of medical knowledge to the needs of each patient. Its utilization has been linked with improved patient satisfaction, better adherence to prescriptions, more maintained behavior change, better physical and psychological health, and less of a tendency to initiate malpractice litigation. It also increases efficiency of care by reducing diagnostic tests and referrals and influences patient’s health through perceptions that a common ground can be achieved with the physician. The applicability of the model has specifically been researched in managing patients suffering from chronic disorders, autoimmune diseases, and psychological illnesses. Application of BPS model in the field of gastroenterology has attempted to explain that even some organic diseases (e.g., peptic ulcers) with well-established etiology (e.g., Helicobacter pylori infection) affect some individuals more than others, and a BPS approach can help physicians in developing rational diagnostic and treatment strategies. The model has also been applied by rheumatologists in the management of controversial syndromes such as fibromyalgia and chronic fatigue syndrome, in an attempt to unite organic versus non-organic models of patient care. BPS model was also used as a predictor of pain and depression in rheumatoid arthritis patients and a study conducted by Covic et al. concluded that rheumatoid arthritis needs to be considered from a BPS approach, in which the physical aspect of the disease may dominate but is mediated by psychological factors that, given attention, can be targeted with an appropriate intervention. By doing so, better health outcomes may be achieved. Katon and Kleinman describe step-by-step approach to BPS model in managing pre- and post-operative patients and conclude that this approach is linked to high patient satisfaction, compliance, and reduced doctor–patient conflict. In light of overwhelming support and popularity of this model, it has become an integral part of medical curricula round the globe. A study by Margalit et al. researching the effectiveness of teaching a BPS approach to patient care concluded that such an approach may reduce healthcare expenditure and enhance patient satisfaction without markedly changing the duration of doctor–patient encounter. Patient-centered care has the potential to improve quality of care in the healthcare system of a developing country such as Pakistan. Traditionally, concepts such as patients’ perceptions and holistic medicine have largely been ignored by healthcare providers in developing countries. In an attempt to alleviate the situation, University of Health Sciences, Lahore, included behavioral sciences in the curriculum of public-sector medical colleges and conducted its first examination in 2007. This was done to introduce medical students to a BPS approach for a better doctor–patient relationship. Moreover, the clinical training is also based on principles of behavioral sciences. Since BPS model has proven to be helpful in administering better patient care and it has been vigilantly taught in medical schools, the aim of this study was to determine the extent to which residents and consultants are applying the BPS model, especially in the demanding public hospitals’ clinical setting of a developing country.

MATERIALS AND METHODS

The study was constructed to interview patients seeking treatment in public-sector hospitals of Rawalpindi to gauge their interaction with doctors. Patients were selected from Holy Family Hospital (HFH) and Benazir Bhutto Hospital (BBH), two of the busiest hospitals in twin cities in terms of number of outpatients, emergencies, and workload on healthcare professionals. The patients seeking treatment usually belong to socioeconomically disadvantaged class, and healthcare provided at public sector hospitals is free of charge.

An inductive methodology was used, and research design was qualitative using structured interviews. Interviews were conducted in wards. The interviewees participated in face-to-face interviews lasting 10–15 min. The data were collected from August to November 2016. The interview questions were structured and formulated after review of the literature regarding patient-centered medical care according to BPS model. Questions were asked according to the interview guide given in Table 1. A sample of the questionnaire used is presented as Figure 1. Only one researcher conducted the interviews. Responses were transcribed verbatim in Urdu. They were then translated to English using Google Translate. The transcripts were then exported to NVivo package for managing and analyzing qualitative research data.

| Phase | Description |
|-------|-------------|
| Phase 1 | Setting of the medical interview  
Creating a rapport with the doctor |
| Phase 2 | Doctor’s attempt at eliciting patient’s perception  
Doctor’s attempt at educating the patient regarding the diagnosis  
Doctor’s attempt at educating the patient regarding the treatment |
| Phase 3 | Doctor’s display of empathy  
Doctor’s attempt of understanding patient’s psychosocial structure |
| Phase 4 | Involvement of the patient in decision-making  
Factors shaping patient’s experience |
data were coded and categorized to conceptualize emerging themes highlighted by the patients. All the answers from the participants were transported to the software, and the relevant sections from each questionnaire were coded and put into different categories. Using concept maps, the coded categories were further grouped to derive a particular theme from each group. Most representative quotations from the patients were used to bolster the themes.

RESULTS

Forty-four patients were selected randomly (n = 44), among whom 20 (45.45%) were males and 24 (54.54%) were females. The mean age of men was 40 years. All men were literate. Six (30%) had a matriculation degree whereas the rest (70%) had primary level education. The mean age of females was 26.6 years. Seven females (29.1%) had a matriculation degree. Four women (16.67%) had no formal education whereas 13 (54.1%) were literate having primary level education. Out of the 44 patients, 23 (51%) were selected from the ward at medicine units in HFH whereas 21 (49%) were selected from surgery units at BBH. In the medicine department, the ailments were various. Six (26%) patients were suffering from diseases related to liver particularly hepatitis C. Five (23%) had various renal disorders presenting with nephrotic and nephritic syndromes. The remaining patients had various illnesses such as infectious diseases, anemia, and pancytopenia. In the surgery department, 8 women out of the 21 patients interviewed (38%) were suffering from cholelithiasis. Two women (9.5%) were admitted for the purpose of breast tumor resection. One (4%) patient was suffering from hyperthyroidism. Among the male patients, 5 (23%) were admitted due to inguinal hernias, 2 (9.5%) due to varicose veins, 2 (9.5%) due to pancreatitis, and 1 (4%) due to a lipoma. The results presented here outline the themes that emerged from the interviews, elucidated by quotes from the interviewees.

Lack of doctor–patient rapport

According to the patients, doctors attending to patients in outpatient departments (OPDs) did not attempt to create a rapport, instead resorting to simply ordering the patient or his/her attendants. The doctors at the OPD were mostly postgraduate trainee. This is highlighted by the fact that

- Doctors generally did not introduce themselves. Out of the 44 patients interviewed, 37 (84.09%) said that despite visiting OPD several times, most of the doctors they encountered never introduced themselves
- After listening to patients’ complaints, doctors started prescribing medicines or tests instead of explaining the reason for the workup to the patient. As one patient recalled that “The doctor asked me other questions regarding my symptoms, whether I was angry often, how was my sleep, menstrual cycle, TB but never explained the reason, they just prescribed medicine.”
Another patient said, “I was only suggested endoscopy. I wasn’t informed of the whole process this would take. They have taken me for different tests.”

This suggests that a doctor–patient relationship was not established during history taking. Conversation with the patient was strictly related to his/her presenting complaints and further plan of action regarding the diagnosis.

**Utilization of a paternalistic approach during treatment**

A patient was quoted as saying, “The doctor has said that I have gall stones, I would have an operation and they will put me on the list.”

Another patient said, “The doctor told me that I have a lump and I will be operated upon as soon as possible.”

Patients said that they were not involved in decision-making regarding possible treatments and modes of action in treating their disease.

Doctors also did not explain the diagnosis or inform the patient regarding the cause of illness. As illustrated by the quote given by a concerned parent,

“The doctor just told us that she is suffering from some sort of cancer and her liver is affected. Other than this, they haven’t told us anything. She has been admitted here for 19 days and everything has been the same since we arrived in the hospital. We are extremely worried.”

**Utilization of reductionist biomedical approach during treatment**

Doctors only considered biomedical causes of disease while establishing a diagnosis or treating the disease as can be seen by the following quotes. They did not take into account the psychosocial aspects of disease or illness. A patient suffering from cholelithiasis was asked whether any doctor had ever asked her about her lifestyle before the illness or any change in lifestyle that she will have to undertake, she replied,

“No. Although I wanted to know what had caused it and how I can remain healthy in the future.”

Patients suggested that the doctors also did not consider psychosocial aspects interfering with their recovery while considering treatment options as one patient said,

“I have been admitted into this ward without any clue when I will get the operation. My family back home is suffering because of the uncertainty.”

Another patient said,

“My family resides in a far-flung area. If I stay admitted here for long, I might start facing financial issues. No doctor has ever inquired about whether the duration of treatment would affect my finances.”

**Patients’ concern with their improvement in health and doctor’s demeanor**

A patient is quoted as saying,

“I am satisfied with the treatment, I have talked to other patients in this ward and they are also satisfied with their treatment, the doctor has said I’ll be operated on Friday and I think it’ll be alright.”

Another patient said,

“I came to the public hospital in an emergency; we could’ve sought treatment in a private hospital. But up till now, I am satisfied with the treatment I have received.”

Despite the results showing that doctors generally did not follow the BPS approach, patients were not concerned with whether or not they had received information regarding their diagnosis and treatment. Rather, they were more focused with measures taken by the doctor for their health.

One patient said,

“I am satisfied with the doctor’s behavior. And I have seen improvement in my condition.”

Another said,

“My lump has healed and I will be discharged soon. I was treated nicely here.”

These statements suggest that patients tended to be more satisfied with their treatment if they had noticed improvement in their health.

One patient said,

“I think all the doctors are very good and have treated me very well and I have great respect for them. They have been always very kind.”

Patients expressed opinions about doctor’s tone and behavior even if he/she was not involving them in the decision-making process. One patient said,

“The doctor spoke with me in a calm manner and answered any question I asked.”

**DISCUSSION**

The results support the finding that BPS model is being ignored by physicians. There can be multiple reasons for this. The physicians might believe such an approach would
increase their workload, they might not be convinced of its importance, or some ambiguity remains in their minds regarding its transition from theory to practice. However, the patients, in most cases, do not express concern overtly in spite of being disregarded by the physicians.

It is often erroneously believed that a patient-centered approach utilizing BPS is time-consuming and expensive, but studies suggest that a BPS approach is cost-effective since it leads to better diagnosis, treatment, and follow-up. This ultimately reduces utilization of healthcare services, unnecessary prescription of drugs and procedures, multiple visits and admission into the hospital.\[^{25}\] This is especially true regarding certain medical conditions with complex etiologies such as diabetes and chronic pain.\[^{26}\] BPS model has been part of the medical curriculum for over two decades, but its integration into the curriculum in Pakistan has been relatively new.\[^{16}\] BPS has not functioned well in the teaching of medical students. It is often interpreted simplistically. Students attain only a superficial understanding of a particular case unable to delve into either the psychological or social aspect of the case.\[^{27}\] This reason might factor into the physician’s understanding and use of the BPS model. Despite its popularity, wide acceptability and multiple frameworks suggested for its integration; Suls and Rothman conclude that the full potential of the BPS perspective and in particular, the ability to advance theory and practice through its use remains untapped. The reason for this might be a gap between theory and practice since in the interest of creating tight designs and precise measures, researchers can create manipulations and measures that fall far short of what is practical and implementable in clinics or in health promotion campaigns. Studies suggest that any medical intervention considering biological, psychological, and social aspects should do better than treatments grounded on any single class of variables, but the field of behavioral sciences is far from presenting definitive evidence in this regard.\[^{28}\]

Patients seeking treatment in the public-sector hospitals usually belong to the lower socioeconomic stratum of the society.\[^{29}\] A correlation exists between education, income, and level of patient satisfaction, especially in developing countries such as Pakistan. Patients with low education attainment and income have higher satisfaction with their healthcare system. Geographical and cultural factors influence patients’ perception as well.\[^{29}\] These factors explain the relative passivity shown by the patients regarding the doctors’ conduct. Patients are treated at a low cost in public-sector hospitals.\[^{21}\] Patients receiving subsidized healthcare are more obliged and tend to overlook the faults in the current system. Such behavior is dictated by the traditional norms of the patients since medical professionals are still revered in many cultures. This situation, however, is rapidly changing. Patients are now more aware of their rights and want to discuss treatment options and complications. Easy accessibility of information technology can be attributed to this change.\[^{28}\] Doctor–patient conflicts are also increasing in many hospitals of Pakistan, attitude of doctors being cited as the most common cause of contention by the patients.\[^{30}\]

In light of this evidence, researchers have presented limitations of the model. The major criticism faced by the model is that it is too broad and vague for its proper inclusion in medicine. Lines between biological, psychological, and social factors are blurred. Current views of biology and disease are much broader, incorporating interactions of genetics and environment into the very definition of the biological.\[^{31,32}\] This complicates matters for the physician since a time tested, workable integration of the BPS model in routine clinical scenario is yet to be formulated. Physicians interpret the BPS model simplistically and the BPS model flounders when a one-to-one correlation between type of cause and type of treatment fails to hold since the result is that clinicians are left with even less guidance on what means what.\[^{33,34}\] Since the BPS model does not provide a definitive framework, physicians of public-sector hospitals of Rawalpindi can very well argue that their practices fall into the domain of the model according to their own interpretation. And this is where the BPS model becomes philosophically inconsistent. It has ended in a new dogma. Due to its broadness and vagueness, it provides weak arguments against dogmas. It provides little resistance to other forces in society that propound their particular dogmas.\[^{34}\] Pilgrim states that the BPS model is limited due to its ontological sophistication being compromised by its proneness to epistemological naivety. It is a model to explain the emergence of disease and disability, not a reflexive theory applicable to the whole field of health research.\[^{35}\] Therefore, a revamped effort to revitalize the BPS model is required whereby it can be molded into a framework that can be stapled to medical curriculum, training, and clinical practice without it being open to interpretation. Moreover, the gap between the BPS theory and its application needs to be bridged by ending the debate of its applicability in healthcare settings through sequential researches.

Since the BPS model has mainly been formulated by the physicians in developed countries where healthcare facilities are better and the patient more informed, data regarding its integration into the healthcare practices of a developing country are sparse. Most medical schools in developing countries, in their effort to modernize the curricula, have blindly incorporated BPS model without conducting sufficient research of what works in our poorly funded and ill-managed setups. As there is sufficient evidence in favor of the BPS model, need dictates that the physicians and psychiatrists of the developing countries incorporate BPS aspect in their own revised model which should take into consideration the local healthcare setup and patient’s level of education. This modified model
should undergo pilot studies to analyze its efficacy and applicability. After this, it should be incorporated into curriculum. Moreover, physicians should be given special training through workshops to assure the utilization of this model into practice. Only then, the patients and the healthcare system at large will benefit from the effects of a properly functioning BPS model.

CONCLUSION

The study highlights the fact that BPS is not given considerable importance while conducting routine medical history taking which remains doctor centered and paternalistic. However, patients are more concerned with their improvement in health rather than whether or not they are being provided informational care. Sequential studies will have to be conducted to determine whether this significantly affects patient care and compliance and whether BPS is a workable model in our healthcare system.

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