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Why the tremendous potential of uploading health educational material on medical institutions' website remains grossly underutilized in the era of the Fourth Industrial Revolution?

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Abstract:

Due to the short span available for consultation with clinicians, patients try to become well versed with their clinical conditions before the medical consultation. They search Google for their medical information; here comes the problem of authenticity of the sources. It is very difficult to obtain authentic medical information for the patients from the Internet. As a result, sometimes, patients ask questions to the overburdened doctors and irritate them. To solve this problem and wider dissemination of authentic medical knowledge, the existing website of Post Graduate Institute of Medical Education and Research (PGIMER) has been utilized. In PGIMER, Chandigarh, health education materials in text and video formats have been uploaded on the PGIMER website for empowering patients. All these have been successfully tested in the outpatient departments of PGIMER, Chandigarh. To our knowledge, this unique approach is the first of its kind in India. We hope this approach of sharing medical information through the PGIMER website may help patient empowerment to a large extent. Later, this concept can be replicated in all medical colleges in India.

Keywords:

Artificial intelligence, health education, medical institutions, website

Introduction

"Please do not confuse your GOOGLE search with my medical degree," this caption is quite often seen in the private clinics nowadays.

Different people interpret this caption differently. Some patients regard it as a high-headed attitude of the clinicians. Some clinicians find it as an easy way to avoid unnecessary medical questions from the patients.

Now, the moot question is why this kind of situation has arisen now? To answer this

question, we have to know about transaction analysis which is considered to be the root cause of the communication gap between clinicians and patients.

Transactional analysis [Figure 1] (TA to its adherents) is described in psychology. As per this thought, humans are multifaceted social creatures with three ego states that change when they come in contact with another person.^[1]

Parent (exteropsyché)

This is a state in which people behave, feel, and think like their parent, unconsciously when they interact with others.^[1]

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Adult (neopsyche)

In this state we behave like adults, unconsciously, when we interact with others.^[1]

Child (archaeopsyche)

In this state we behave, feel like child during interacting with others.^[1]

Kinds of Transactions

There are basically three kinds of transactions:

Reciprocal/complementary (the simplest)

It occurs when both parties satisfied each other their ego state during the interaction. This is the simplest form of all transactions.

Crossed transactions

It occurs when both parties are not satisfied with their ego state during the interaction. Hence communication failure occurs.

Crossed transactions are problematic when the other person is placed at different level. In a conventional clinic setting, the physician and the patient are at a different level due to asymmetry of their power and position in the society.

This worked well in the erstwhile orthodox society that has yet to witness the modernizing trends. Here, the doctors are still seen as “gods.” Patients complied with their prescription (diktats) without questioning (external locus of control).

This scenario has changed in the 21st century. Patients are now well educated with an internal locus of control. They want to control the situation related to their health. With an open access to a lot of medical information on the Internet and social/print media, they are in a valid position to cross-check the doctors’ advice.^[2-5]

However, due to a gap in the updating of the training/education system in medical colleges, the doctors, particularly those who graduated in the 20th century, are not quite willing to relinquish their hold

over the fate and choices of their patients. Oblivious of the exponential changes in the information society, they are adamant to retain their “parent” ego state in their clinics. This results in crossed transactions in a TA paradigm. For this reason, in most contemporary hospitals, messages are not conveyed by the doctors in a proper manner, resulting in a communication gap, which later leads to patients’ dissatisfaction.^[2,6-8]

It is the fault of neither the treating physicians nor the patients. The situation is aggravated in crowded outpatient departments (OPDs) in most hospitals of India, where the clinicians are overburdened due to high patient load. All the same, patients have every right to know about their medical problem, diagnosis, prognosis, etc.^[2,6-8]

Due to the short span available for consultation with clinicians, patients try to become well versed with their clinical conditions before the medical consultation. They search Google for their medical information; here comes the problem of authenticity of the sources. It is very difficult to obtain authentic medical information for the patients from the Internet. As a result, sometimes, they ask questions to the overburdened doctors and irritate them.^[2-4]

It creates problem; it may range from patient dissatisfaction to medical violence. Many studies from India have documented that there is an increasing trend of patients not being satisfied with the treatment provided in the hospitals. There are multiple reasons for that, some are controllable, whereas others are not. The common reasons of patient dissatisfaction are overcrowding, long waiting time to meet doctors, short consultation period (2 min), absence of a congenial environment, asymmetry of information, and communication gap. To tackle this problem, doctors in India have to change the way they deal with patients.^[2,9,10]

In 2018, the *British Medical Journal* highlighted the same thing that doctors in India see patients for barely 2 min.^[11] Such a short consultation adversely affects patient care. In Western countries, doctor–patient consultation crosses 20 min because new concepts have emerged about doctor–patient interaction, for example, patient-and family-centered care, considering patient as a person, social prescription, and information therapy. There is a focus on active collaboration and shared decision-making between providers, patients, and families.^[12]

History of Physician–Patient Bonding

It is important to understand the changes took place in the above relationship over years.

It is described in five stages as follows:

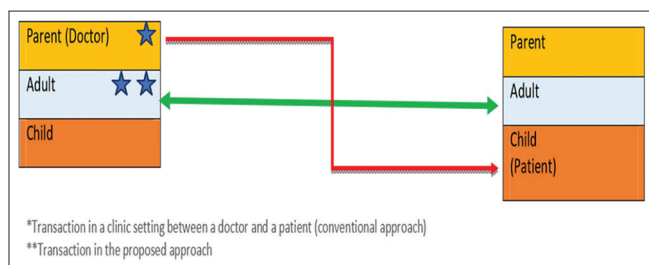


Figure 1: Transactional analysis model of communication: A comparison of two approaches

Ancient Egypt (approximately 4000–1000 BC)

Edelstein *et al.* (1937) described the physician–patient relationship that evolved from the priest–supplicant association. The paternalistic approach was in vogue. At that time, healers used to play the dual role of magicians as well as priests to dominate the helpless, sick, and moribund people and their near ones. Egyptian medicine was based on paternalistic type- or activity- and passivity-type relationship between the doctors and patients. Then, the doctors directed and patients obeyed orders without any queries or doubts.^[2,13-15]

The era of Greek enlightenment in the 5th century BC

At that time, they believed in the empirical rational approach. It meant that they depended more on observation, trials, and mistakes. They abandoned the magical and religious justifications and developed the relationship of guidance, cooperation, and a lesser degree of mutual relationship approach. They told the patient what to do after proper counseling similar to adult–adolescent relationship. The Hippocratic Oath raised medical ethics all above self-interest, irrespective of class, and status at that time.^[2,11,13,14]

Medieval Europe and the Inquisition (AD 1200–1600)

After the death of the Roman empire, the religious and supernatural world beliefs were restored. After the crusades and witch hunt, the doctor–patient relationship was destroyed. Again, the doctor regained the role of father figure; similar to the Egyptian era, where the doctor dictated and the patient obeyed.^[2,13,14]

French Revolution

The French Revolution ended the situation in which underprivileged populations were put into the dungeons. Again, a change of the doctor–patient relationship took place in the reverse direction.^[2,13-15]

Modern era (1700 onward)

In the early 1700s, there were very few doctors, and they dealt with only upper-class patients. This model was called “symptom-based model of illness,” and the doctor played a dominant role. In the late 18th century with the rapid development of science, especially progresses in microbiological and surgical skills, “biomedical model of illness” emerged, and it superseded the “symptom-based model of illness.” In this century, the paternalistic model persisted. With the emergence of psychosocial theories (Breuer and Freud) in 1905, the mutual participation relationship was restored.^[2,13-16]

The practice of medicine was renamed as patient-centered medicine. Michael Balint, in 1964, proposed the idea

of “doctor as a drug.” It was based on the dynamic relationship between the doctor and the patient. According to him, the doctor–patient relationship is a “mutual investment.” He believed that by the time the doctor obtained the patient’s details, it permitted the clinician to improve his/her communication skills with his/her patients. It resulted in efficient consultation, which eventually provided a better understanding of the patient’s requirements. That was missing in the previous era.^[15]

Thus, historically, the doctor–patient relationship has gone through ups and downs. Sometimes, the society sketched them as a god and sometimes as evil according to the changing scenario in the society.

From the above discussion, it is clear that in the earlier era, doctors generally used to prescribe pills to make people feel better. In contrast to this exclusively pharmaceutical approach, social prescribing is relatively a new holistic approach to wellness in which patients are encouraged to fit their lifestyle, interests, and special needs in ways that complement any medical prescription. This highlights the concept of patient self-care with “information prescriptions.” Here, patients are supported to take greater control of their own health.^[17]

In the current context, the asymmetry of information exchange equation in developing countries’ hospitals is creating problem for clinicians as well as patients.^[6,7,18]

We have experienced that it can be rectified by adopting a patient-centered approach. This newer concept in patient care has been implemented on a pilot basis in the multipurpose behavior therapy (MPBT) room project at Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh. Here, after referral from the main OPD, staff in MPBT room provides counseling including behavioral therapy (BT) and exercises to antenatal women or those with common gynecological problems. The concept of diet–healthy lifestyle is explained to them. In MPBT room, women are counseled together with their family members. In this way, family members also understand their problems, especially in the case of infertility. Even adoption services are linked with MPBT room for those who cannot conceive. Queries of patients are resolved at a leisurely pace. Sufficient time is devoted to each patient. Exercises and lifestyle changes (simple exercise/yoga) are also explained to the cases of morning sickness, backache, cramps, fainting spells, heartburn, and constipation. The de-medicalization philosophy inherent in the MPBT room approach helps in empowering the women in self-care of their reproductive and other health problems.^[2,19-21]

The latest addition is the use of mobile phone/laptops for video-based counseling. In effect, MPBT room concept is operationalization of a multidisciplinary teamwork in OPDs. The unique features of MPBT room approach include a family-centered individualized as well as group counseling sessions, adoption of medicalization approach for tackling the routine obstetrics and gynecology problems of women, and integrated training strategies.^[21]

In the counseling room, the patient can relax a bit, and sufficient time is given for discussion. In this way, the child ego state of the patient is promoted to the adult stage. As a result, the patients will be confident enough to speak about their problems openly. Doctors (staff in MPBT room) also climb down from their high-pedestal parent ego state to the adult stage. This facilitates effective (adult to adult) doctor-patient interaction. Thus, barrier to effective communication can be easily broken by this approach. Family caregivers will realize their role in harm reduction of their loved ones. This effective communication will help adequate satisfaction of the patients.^[19-21]

All said and done, there are some limitations of MPBT room concept which was initiated about a decade back, as follows:

1. To run a MPBT room, we need a separate space in the hospital setting, sometimes it which is not feasible
2. For each category of patients, we need a different room, for example, sexual problems of adolescents may not be discussed with others
3. Skilled workforce is very difficult to obtain to manage the MPBT room
4. Funding is also a problem as there is no specific budget mentioned under MPBT room in the hospital; it is mainly funded by project
5. People who do not visit the hospital will be unaware about their health problems and will search through Google for required medical information
6. The dissemination of information to the patients in MPBT room is likely to be slower compared to the Internet sources.

Although this novel concept of MPBT room holds promise in hospital setting, for the wider dissemination of authentic medical knowledge, a different strategy is required which should be less resource intensive, easily searchable, and retrievable with quicker dissemination among the people.

Already, efforts are underway in this regard. The existing website of the institute has been utilized for this purpose.

Such a novel strategy has also been tried in PGIMER, Chandigarh. Here, some health education materials

in text and video formats have been uploaded on the PGIMER website for empowering the patients.^[19-21]

Already, the MPBT room concept is quite popular in PGIMER. It is helping in patient empowerment. Now, this time, additionally, we are experimenting with uploaded authentic medical materials for patient empowerment in a piggyback fashion.

To our knowledge, this unique approach is the first of its kind in India. It gives a global exposure to the efforts of the faculty of PGIMER Chandigarh, as people from anywhere in the world can access the uploaded material.^[22]

It is our humble contribution for patient empowerment through uploads on PGIMER website (under the public forum drop-down menu in patient empowerment section). The upload also has a disclaimer – “Readers may go through the uploaded material for their health-related issues. It will help in many of their related queries. Concerned doctors/departments may be contacted for further guidance or clarification. We hope, this piggyback approach of sharing medical information through PGIMER website may help patient empowerment at a large extent. Later this concept can be replicated in all medical colleges in India.”^[22,23]

However, it is surprising why the tremendous potential of upload on medical institutions' website remains grossly underutilized in the information technology (IT) era of the Fourth Industrial Revolution? In most apex medical institutions, the websites look like a bureaucratic formality. Lack of an innovative approach is glaring. The administrators and doctors have failed to exploit the wide-ranging possibilities and opportunities available to them for decades in the form of official websites! In fact, a lot can be achieved by using the website as a mechanism to establish a dialog between the users and the providers. We, in health sectors, seem to have missed the bus, when compared to other sectors.

It is generally agreed by all scientists that in all spheres of our lives, the work in future will be changed by IT revolutions such as machine learning complex algorithms, artificial intelligence (AI), and robotics.^[24-26]

To gain a much better insight of decision-making by humans, few decades back, scientists hacked data of neurosciences and behavioral economics. The research findings highlighted that our all choices/decisions/desires (from eating food and wearing dress) result not from some enigmatic intuitions, but they are due to the probabilities calculated by billions of neurons within a fraction of second. In reality, overhyped human intuition is just a pattern/event recognition.^[24,25]

Good clinicians, surgeons, and nurses do not have magical powers about their patient's diagnosis. It is something like reconsidering recurring patterns/events. Usually, they identify the learned pattern/event in medical schools and try to avoid wrong things which may be wrong investigations, diagnosis, treatment, or a wrong surgery. The study also revealed that the biochemical algorithms of the human brain are not absolutely perfect. According to the scientists, our neuronal biochemical algorithms are basically a degenerated, short, outdated, and adapted one.^[24,25]

That is why good surgeons and clinicians sometimes make foolish mistakes. From the above discussion, it is now clear that that AI doctors can outperform human doctors in the cognitive domain also.^[24,27-35]

What psychiatrists/neurologists are learning today about the basal ganglia, pons, cerebrum, and cerebellum might make it possible for computers to outperform human psychiatrists/neurologists in future.

AI doctor will not only be able to hack humans and outperform them in their uniquely human skills, but also has competitive advantage over unique nonhuman abilities. Thus, AI makes the difference between an AI doctor and a human doctor who have mere owned a medical degree from medical schools. Among the nonhuman abilities that AI possess is the advantage of easy and quick connectivity and updateability.^[24,25]

The future paybacks for human civilization are likely to be huge. It is visualized that AI doctors would provide far better and cheaper health care for billions of underserved people. Thanks to machine learning and biometric sensors, a poor villager might get same health care via her/his smartphone as the richest person gets today from the modern urban health facility.^[24,25]

According to Professor Harari, "Things are going to change fast in the next decade and clinicians and hospitals need to change accordingly."

If we still do not update our self, may be AI, in the form of the Fourth Industrial Revolution, will take over our jobs to render us doctors a useless class. It is high time for us to think about some innovative strategies for better health-care delivery among the population. Our strategy may not be 100% accurate/correct, but we have to bring small upgradation in the system regularly to improve it so that deteriorated doctor-patient relationship can be restored again by filling the communication gap and to maintain authoritative role over the technologies.

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Conflicts of interest

There are no conflicts of interest.

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