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CLINICS –HAS IT REALLY BEEN REPLACED BY MODERN TECHNOLOGY? A QUALITATIVE STUDY.

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ABSTRACT **Background:**One of the major concerns of today's medical education is the lack of basic clinical skill and over dependence on investigations among new generation tech savvy doctors. In this study we want to explore the perspective of new generation doctors about the relevance of clinics in present day medical practice.**OBJECTIVES:**The objective of the study was to investigate the causes of the dominance of technology over the basic clinical skills in present day medical practice and to find out the perceived solutions of this problem.**Materials And Methods:**This study was performed among resident doctors of different clinical branches working in a tertiary health care centre of Eastern India. The study comprised of in-depth interviews and focussed group discussions. The interviews were audio recorded and later transcripted. Data analysis was done through deductive approach. Results were reviewed by all the authors.**Results:**The overdependence on technologies among the new generation doctors are nothing but the reflection of changing socioeconomic trends in modern day world. The principal causes are hyposkillia of doctors, commercialization of medical practice, pressure from patient's side, overuse of google knowledge & excessive misuse of legal means in the name of consumer protection act. Problem is multifactorial and a combined and sustained effort is needed for the solution. **Conclusion:**Lack of clinical skill leads to overdependence on technologies, that translates into excessive high treatment cost and poor patient outcome. Improvement of the clinical skills among present generation doctors can reduce the intensity of the problem.

KEYWORDS : Hyposkillia, clinics, investigations, qualitative research.

INTRODUCTION:

In ancient Japan samurais were known for their katanas, one of the best swords ever made. Just like samurais, physicians were also known for their clinics, the hard earned skills to take detailed history, doing proper physical examination to reach the clinical diagnosis. May be in the era of technological dominance, the most important tool that a clinician still have is the contact between the doctor and the patient, the touch of sympathy and empathy[1].

In various studies, the role of clinics in internal medicine were questioned, because in the present era of evidence based medicine, the role of clinics lacks the evidence [2,3,4,5].Some studies also stamped clinical examinaation as an outdated practice for it's low diagnostic accuracy[5].But there are also several studies which argue that clinics is still cornerstone of the medical practice[1].In support of their argument, they also showed that the clinical examination has a therapeutic role (the healing touch) as well as a diagnostic role [6,7,8].

Various quantitative studies were also performed to evaluate the role of clinics in modern day practice. It was shown that the history taking only, accountable for 76-82.5% of all diagnoses, whereas physical examination is responsible for 8.2-12% and investigations play a role for 8.75-13.2% of all diagnoses [9, 10, 11, 12]. So, in gist history taking and clinical examination is responsible for around 90% of all diagnoses. Jauhar et al explained that the technological dominance in modern day practice among new generation doctors because they are very much uncomfortable with the remaining 10% uncertainity [5].

As in this present era ,Japanese soldiers don't need katanas to protect their soverignity, they have state of the art arsenal. Do clinicians still need the basic clinics in the era of technological supremacy? What should we call it "*the sad demise of clinics or a inevitable evolution of clinical practice*"[5]. We had realized that the debate would be more authentic if we can know the perception of clinics in new generation tech-savvy doctors. This led to our research question " *Clinics –has it really been replaced by investigation and imaging*".

MATERIALS AND METHODS

Study setting:

Study place: The study was done in the department of Urology in a tertiary care hospital of eastern India.

Study type: It was a qualitative descriptive type study involving in depth interviews (IDIs) and focused group discussions (FGD).

Study participants: Total 42 residents of different branches of the same institution (20 residents from dept of Urology, 12 residents from department of General Surgery,10 residents from dept of Internal Medicine).

Selection of participants: Residents were selected purposively and requested to participate in this study.

Informed consent: They were assured regarding the privacy of their identity. Both verbal and written consent was taken and interviews were fixed at their suitable time. A detailed and explicit consent for audio recording of the interviews were taken.

Data collector: First author was the one to conduct all the interviews.

Data collection

Interview Guide

Research Question : CLINICS – has it really been replaced by INVESTIGATIONS AND IMAGING.

Type of interview : semi-structured, in-depth interview / focused group discussion

Interviewer : First Author.
Question 1: how you define clinics as?
Question 2 : ultrasound has become modern day palpation--- what is your say about it?
Question 3 : what do you think can be the factors for this situation ?
Question 4 :if I ask you to choose clinics alone and investigation and imaging without clinics ,what will you choose and why?
Question 5 : how do you manage a patient in rural areas in the era of investigation dependence?
Question 6 : can you suggest any ways in which the imaging / investigation dependence can be reduced?

Thank you for your time. It was very heartwarming to talk to you. I will give you a copy of transcript of this interview. Feel free to comment or add anything if you like in that.

In depth interviews: The interviews were conducted in comfortable and convenient place, and each interview lasted for about 10-15 minutes. None of the interviews were repeated. Most of the interviews were conducted in English but in few occasions regional languages

were also used. Field notes were taken during the IDIs. To solve the dilemma regarding any ambiguity about statements made during the time of interview were clarified at the end, after showing a verbal transcript of the interview to the interviewee. Only the participants and interviewer were present during the conduction of the interview. A detailed hand written notes were taken and were verified by the participants after the interview was over. Audio recording of the complete interview was done.

Focus group discussions: In the first, second and third FGDs there were 11, 9 &10 participants respectively. They were well informed about the purpose of the study. Open ended questions were used mostly during the discussion. It was done in a free flowing manner with minimal intervention on the part of the first author. Audio recordings of all the FGDs were done. Non-participants were not allowed during the FGDs. Each FGD lasted for about 45-55 minutes.

Data saturation: Our purpose was to collect the total number of themes that emerged from the interview and not the numerical data of respondents that had given similar responses. The interview was conducted till a saturation level was achieved.(i.e no new information was available).

Data analysis

The interviews were finally transcribed and typed in English. The participants read the transcripts and confirmed their responses. For data analysis deductive approach was chosen and it was conducted manually. Descriptive codes were made of the text information. Guidelines for reporting qualitative research were followed. The script written and were reviewed by the authors separately. After all these formalities we had proceed for publication of the article.

RESULT AND ANALYSIS

This qualitative study was undertaken over a period of three months (November,2019 January 2020). Total 42 resident doctors participated . Among them 20 residents were from dept of Urology, 12 residents from department of General Surgery,10 residents from dept of Internal Medicine.A total 42 IDIs and 4 FGDs were conducted.Eight other residents who were invited refused to take part citing a lack of interest.

Our first question was regarding the perception of clinics, how would they define clinics. The responses were as follows:

- Clinics is defined as an art of elucidating history,symptoms and signs of underlying pathology.
- Clinics is a place where patient comes with their complaints and get examined and treated acoordingly.
- Clinics is a place where doctor sees his/her patient ,examines them and make a differential diagnoses and then confirms it by investigations and imaging to reach the final diagnoses.
- Clinics is defined by an art of assessing patient's physical and physiological condition based on doctor's clinical acumen.

Our next question about their opinion on “ultrasound has become the modern day palpation”. Responses were:

- Yes, it is cost effective and easily available.
- Yes, it should be included in clinical examination.
- It is a screening tool,not the substitution of clinical examination.it should be added to physical examination to extract maximum diagnostic yield.
- Yes, it should be done to avoid medicolegal consequences.
- No, a lot of usg done is actually unnecessary & to mask the hyposkillia among doctors.
- There is a perception from patient's psychology that without usg proper diagnosis can't be made.

Next question was about their perception of factors responsible for the overdependence of investigations in day to day practice, responses were:

- Commercialization of medical practice.
- Easy availability.
- Need to see huge no of patients in less time.
- Hyposkillia of doctors.
- Increased trend of evidence based medicine.
- Trend of google knowledge and widespread advertisement of tests as health packages.
- Deviation from medical ethics.
- Pressure from patient's side and to avoid unnecessary legal harassments.

Next question was, if they were asked to choose clinics alone or investigations without clinics, what they will choose and why? Responses were:

- No one can replace each other, rather they are complementing each other.
- Clinics alone because before the advent of technologies clinics were the sole method of diagnosis.
- Investigations and imaging as diagnoses cannot be achieved with clinics alone.
- Clinics alone, as investigations without clinics will give more irrelevant and unnecessary data that may complicate the final diagnoses.

In the next question they were asked “how will they like to manage a patient in extreme rural development of clinical skills among doctors is concerned with learning of history taking, physical examination

- The response was more or less unanimous – make the provisional diagnoses using basic clinical acumen and refer the patient to higher centre if basic medical intervention fails.
- In our last question they were asked for suggestions, through which the imaging/investigation dependence can be reduced. The responses were as follows:
- Strengthening the clinical training program.
- Making awareness among society that improper use of investigation can actually jeopardize the diagnostic process.
- Giving more time to each patient.
- Proper referral system, so the patient rush in tertiary care centre can be reduced. As a result per patient consultation time can be increased.
- Periodic audit of investigations written from each clinical department.

DISCUSSION

In this study, we had observed certain important things among participating resident doctors:

- The definition of clinics was not clear among them. Everybody had a different perception about clinics.
- They had admitted that they were not properly trained on basic clinics in their medical colleges.
- Answering the last question, how would they like to manage a patient in rural setup-their intention was very clear, refer the pt to higher centre as soon as possible. We had observed that they are not confident on their basic clinical skills.
- They had cited different factors responsible for the over dependence on technologies. We had observed hyposkillia is the most predominant one. In the following paragraphs we would like to discuss the factors responsible for the deterioration of the clinical skills as well as over dependence on investigation and imaging among the doctors of this era.

Development of clinical skills among doctors is concerned with learning of history taking, physical examination, clinical reasoning and professionalism with good communication skills [13]. Various published studies showed that clinical skills have been significantly declining for last two to three decades [14]. In medical schools more time is allotted to advanced diagnostic technologies rather than pure bed side teaching [15].Various factors were pointed out for this hyposkillia among junior doctors.

Infrastructural factors:

- Less bed side teaching.
- Huge size of student groups
- Adverse learning experiences [16].

Patient factors:

- Less no of cases admitted.
- Shorter hospital stay.
- More leniencies towards the investigation and imaging.
- Patient's refusal to get examined by huge number of students [17]

Student's factors:

- Large no of students in each Medical college.
- Popular belief among students that clinical skills can be acquired during post graduations.
- Frequent absence from teaching rounds [18]

Teacher's factors:

- Senior teachers are overburdened with administrative responsibilities.
- Last minute round leads to very less time for daily clinical round.

- Office round--- taking virtual round while sitting in office chamber.
- Lack of teacher's training-most efficient doctor may not be a best teacher. Training of trainers is seriously lacking in today's medical education.
- In this era, teachers are more concerned with their professional upliftment only, how to enhance their skills, how to increase their publication numbers. Very few teachers are concerned with the improvement of a student's skill [19]. Unfortunately, making of a skilled doctor, which should be the most important objective of a medical institution became the least priority one. Now this is the high time when we have to find out the strategies to overcome this genuine problem of today's medical education.

Today medical fraternity is symbolized with sophisticated instruments. In maximum advertisements doctors are portrayed with high end CT or MRI machines. Now a general perception among patients is " A good hospital is that, which have good machines". Those advertisements may look benign but this kind of commercialization of medical practice creates a permanent imprint in the patient's mind. Now various studies showed that patient's wishes and preferences dictate the clinical decisions. In one study 71% doctors admitted that patient's wishes influenced their clinical decision [20].

There are various instances where doctors were sued for not writing investigations. So in this era of overzealous use of legal cases in the name of medical negligence, doctors are very afraid of taking risks. As a result doctors are writing more and more investigations to avoid unnecessary harassment in the name of *consumer protection act*.

In this present era we all are living in a virtual world, this is called "*internet*". The impact of internet in our medical practice is very, vivid. The excessive trend of google knowledge creates a huge problem in today's clinical practice. Nowadays patients are coming in hospitals with self made diagnosis and management plan. This causes a tremendous pressure in the mind of the treating physician. But the effect of the internet also carries some positive impacts. Now doctors are forced to update themselves to counteract patient's knowledge, medical students are using online classes, online videos of clinical examinations to enhance their clinical skills.

Not always the patient or the circumstances force a doctor to write unnecessary investigations and imaging, sometime doctors or hospital policies are sole responsible for this overwriting. Deviation from medical ethics, uncanny nexus between medical professionals and laboratories, pressure from the management of the corporate hospitals, these all kind of morally unacceptable practices also play a part in this overwriting of the investigations.

The effect of technology is most on the new generation young doctors. Mckinley et al showed that young doctors are more dependent on tests than older doctors [21].In this study we had analyzed the views of young resident doctors only. Residents from three different clinical branches participated in this study. So, the departmental/subject bias on this debate was minimized.

Limitation Of The Study:

1. This study was performed among resident doctors of three clinical branches. This study may be more interesting if we could include residents from the technology dependent branches, i.e, anaesthesia, radiology etc.
2. Another thing, this study only incorporates the views of new generation young doctors. If we could include the views of senior doctors, their views may open up a new perspective of that debate.
3. There was lack of available data to compare as there was dearth of literature regarding similar types of research.

Future Direction Of The Study

From the following study the most important inference that we could appreciate is

a) The concept and definition of clinics not very clear among the doctors as we got vague and different answers from each of them during the interview.
b) The doctors themselves admitted during the interaction that they are not properly trained and do not possess appropriate skills required for core clinics.

Therefore my further study keeping in consideration the present inference would be to find the reasons as to why the skills and training have been inappropriate and thus to help bring back clinics in its past glory.

CONCLUSION:

The popular modification of the quote "pen is mightier than the sword" is "Pen is not mightier than sword, mighty is the hand which knows when to pick up the pen and when to pick up the sword". Exactly this is our point, doctors should not be against the advancement of technologies, in fact clinical skills and technologies should complement each other to extract out the hidden diagnosis. In this era of advanced technologies, clinical skill and knowledge of a doctor should be raised to that level when a clinical mind can judge what investigation to be written and when to be written.

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Conflicts Of Interest:

There is no conflicts of interest.

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