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RESEARCH ARTICLE

A STUDY ON CHANGE IN LEARNING PATTERN FROM OFFLINE TO ONLINE MODE DURING COVID-19 PANDEMIC

Dr. Suwaibah Fatima Samer[1], Dr. Yasmeen Jahan[2] and Dr. Mohammed Abrar Hassan[3]

1. Asst Prof of Physiology BMC.
2. Intern BMC.
3. Prof BMC.

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Abstract

Introduction: The COVID 19 was first reported in wuhan, china. It is characterised by pneumonia like symptoms. The virus spread exponentially, resulting in an outbreak throughout the world leading to pandemic. This has caused unprecedented disruption to medical education process and to health care system world wide. Leading to sudden ceassation of medical education system due to various restrictions imparted by WHO. , thus influencing medical education process, which is based on lectures and patient based education. Methodology**:** This is an observational study planned in department of physiology of Bhaskar Medical College on the students of 2016 and 2017 batch in the age group of 20-23 years with sample size of 200 students divided in two groups according to their batches and their performance of theory and practicals in final university examination.
Aim: A study on change in learning pattern from offline to online mode during covid-19 pandemic.

Objectives:

1. To study the change in pattern of learning from offline to online mode during covid-19 pandemic among undergraduate medical students by assessing their performance in final university examination.
2. To evaluate the effectiveness of online classes and student's level of satisfaction in terms of gaining knowledge, attitude and practices for availability of e-resources used for pertaining to online medical education.

Introduction:-

In december 2019, the COVID 19 was first reported in wuhan, china. It is characterised by pneumonia like symptoms. The virus spread exponentially, resulting in an outbreak throughout china and the world leading to pandemic. This has caused unprecedented disruption to medical education process and to health care system world wide[2]. Leading to sudden ceassation of medical education system due to various restrictions imparted by WHO.

The highly contagious nature of the virus has made it difficult to continue lectures as usual, thus influencing medical education process, which is based on lectures and patient based education [3]. This has exposed the population at

Corresponding Author:- Dr. Yasmeen Jahan
Address**:-** Intern (ICMR Approved Articles) Bhaskar Medical College.

risk of developing life-threatening condition, These challenges have resulted in limited patient care due to focus on covid-19 patients as well restrict the availability of bedside teaching opportunities for medical students, to overcome these challenges the instructor have to deliver lectures safely, while ensuring the integrity, contuinity of medical education and fear of spreading of virus during their training and transmission in the community[4].

Although to continue the teaching programme the medical education system has started providing online lectures for students. However, evaluating the effectiveness of online and offline teaching remains difficult. Evaluations have failed to reach consistent conclusions[13,16]. The reason why we concentrate on this specific group is that they are self-motivated and clinic practice-oriented learning, the undergraduate medical students are mainly driven by common core curricula and examinations stipulated by the universities, teaching committee, which reversely, brings a sharp gap when evaluating teaching methods [15].

In contrast to previous studies, this study is narrowed to assess the two modes of learning for their feasibility and determine whether they are adequate in helping medical students.

The qualitative assessment of undergraduate medical students performance in final university examination in comparison of online learning versus offline learning. This study is also aimed to provide an overview of circumstances during pandemic that determines the knowledge, attitude and practices pertaining to online mode of learning in medical education.

Review Of Literature:-

The learners' perception on online learning reveals that it is good in the midst of COVID-19 pandemic It implied that the material and instruction implemented by the lecturer in the online learning were not easy to use[1]. universities worldwide are moving more and more towards online learning or E- Learning[5]. Project more students associated in-class lessons and felt more interest, due to better understanding, while classroom interaction with the lecturer and student is enjoyable during the lesson. The student prefer to the offline larning than online learning[6].There is no evidence that offline learning works better. Compared to offline learning, online learning has advantages to enhance undergraduates' knowledge and skills, therefore, can be considered as a potential method in undergraduate medicalteaching[7]. The overall result shows no significant relationship between the profiles of the respondents and the challenges in online learning. There should be a student's needs assessment on internet connection and equipment needed to meet the demands of the online classes before the opening of classes[8]. In general, more students are associated in-class lessons with higher motivation and more interested due to better understanding, valued classroom interaction with the lecturer and peers, and input from the lecturer.

Students preferring the online lesson cited speed and convenience of study and flexibility of time and place of study as reasons for their choice[9].This study investigates the impact of e-learning on creativity and content knowledge of chemistry students at the university. Therefore, it is concluded that e-learning is effective for knowledge and creativity acquisitions among chemistry students and the greater e-learning opportunities should be provided for wider audiences[10]. This study reviews literature and the role that e-learning plays in higher educational institutions in relation to teaching and learning processes, and the advantages and disadvantages of its adoption and implemention[11]. Faculty and student responses were generally positive overall and indicated that learning improved in an e-learning environment compared to a traditional approach[12]. The faculty worked in close collaboration, strategizing creative solutions to maintain the academic rigor and integrity of the course. Student papers and projects were analyzed and compared from both the face to face and online versions of the course to determine academic quality and learning outcomes. A comparison of distance education methods that include direct interactive links with those that do not include interactive links demonstrates no difference in satisfaction levels[17]. Teamwork , combined ,with asynchronous, support can enhance ,the perception of learning. Individual work in interaction with online materials negatively affects the perception , of learning and subsequent exam ,performance[18]. A relatively new method of distance education: computer-based distance education[19]. The research questions focused on general receptivity to distance education, the relationship between professional characteristics and attitude toward distance education, the connection between previous distance education experiences/ familiarity and receptivity, and on attitudes toward different distance education media and methods[20].

Methodology:-

This is an observational study planned in department of physiology of Bhaskar Medical College on the students of 2016 and 2017 batch in the age group of 20-23 years with sample size of 200 students divided in two groups **Group A** representing 2016 batch and **Group B** representing 2017 batch of MBBS final part-1 according to their batches and their performance of theory and practicals in final university examination of ENT and Ophthalmology.The Teaching learning Method in 2017 batch was online teaching and 2016 batch offline teaching.

The procedure involved in the process, which includes comparison of marks secured by the students, who have attempted the university exam according to the online and offline mode during their final university exams.

The (KAP) (knowledge , Attitude , Practice) will be assessed by evaluating the questionnaire answered by Google Form

Questionnaire was framed based on KAP Standard questionnaire criteria. and distribution of standard questionnaire among online batch.

Inclusion criteria:
• Online learners includes e-learners and distance learners by video.
• Offline learners, Includes classroom teaching , seminars, watching video lecture and reading text-based documents or books only.

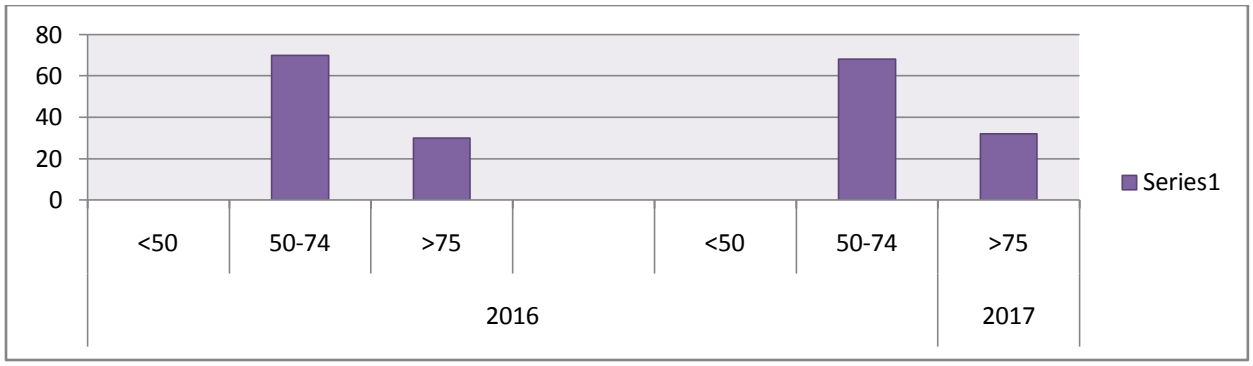
Exclusion criteria:
• Those students who refused to take part in the study.
• Those who were absent in the final examination.
The subjects will be explained about the ethical implication of the study in her/his own language and an informed consent will be taken after explaining the purpose of study.

Results:-

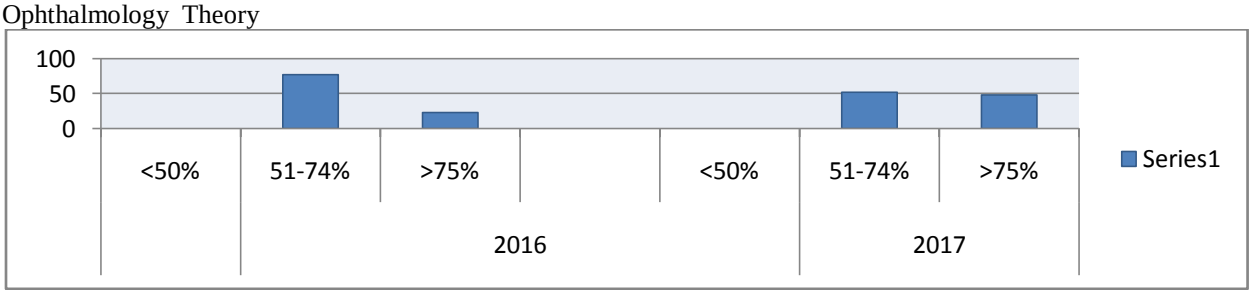
The data collected is analysed on the marks secured by the students in ENT and ophthalmology for each batch based on the following criteria.
i. Less than 50% ,ii. 50-74% , III. 75% and above
Assessment of Theory both batches
2016 ENT Theory 7 students got less than 50%, 88 students got between50 to 74% and 5 students got more than75%.
2017-ENT theory- 8 students got less than 50%, 84 students between 50 to 74% and 8 students got more than 75%.
t value 4.19 ,p value 0.0001 – significant
2016- Ophthalmology Theory with 14 students less than 50%, 79 students between50 to74% and 7 students more than75%
2017-Ophthalmology Theory 4 students less than 50%, 80 students between50 to 74%% and 16 students got more than 75%
t value -3.53, p value 0.0005 significant

Assessment of practical both batches
2016 ENT Practicals- , 70 students got between 50 to 74% and
30 students got more than75%.
2017-ENT practicals 68 students got between 50 to 74% and 32 students secured more than75%.
t value -5.69, p value 0.0001 significant
2016- Ophthalmology practicals 51students got between50 to 74% and 49 students got more than75%.
2017 -Ophthalmology Practicals
52 students between 50 to 74% and 48 students more than75%.
t value 6.827, p value 0.0001

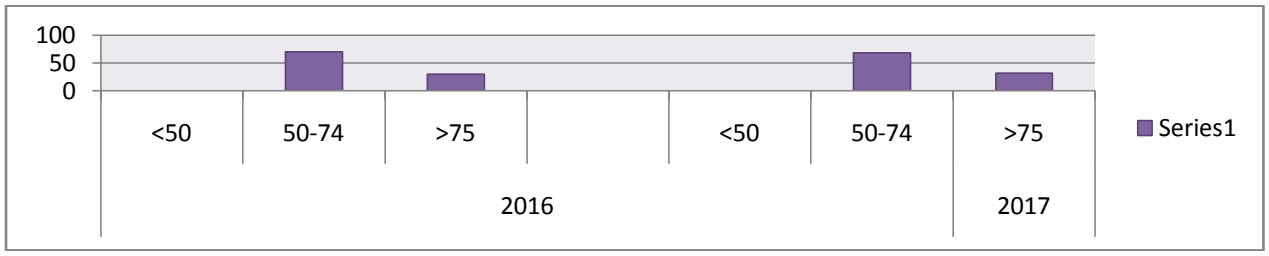
Ent Theory



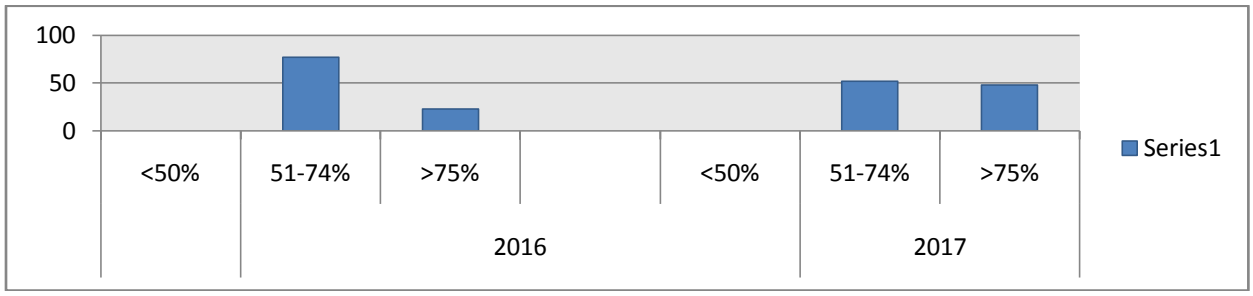
Ophthalmology Theory



Ent Practical



Ophthalmology Practical



Questionnaire in Google form to assess the (KAP

Knowledge:	True	False
e-learning depends on a comprehensive digital electronic environment displaying educational curriculum through networks.	85.%	15%
e-learning is an interactive system that provides an opportunity for learning through information and telecommunication technology.	85.%	15%
e-learning provides a digital multimedia content (written text, audio, video and images)	97.%	3%
One of the benefits of e-learning with live	66.%	34%

content is that scholar receives instant feedback from the instructor.		
e-learning in medical field is not considered less expensive than conventional	46.%	54%
e-learning is considered a type of tele-education	83.%	17%

Attitude	**Disagree**	**Agree**
e-learning educational content provided by the college satisfied all my educational requirements	9%	81%
e-learning content better than physical class content	67%	33%
Adherence of student to work schedules for internet based educational content is similar to their adherence to direct learning content	19%	81%
e-learning is enabling me to ask questions and interact with the lecture similar to regular lecture	43%	47%
e-learning is useful for clinical aspect of medical education	67%	33 %
medical e-learning is more convenient and flexible than conventional learning	71%	29%
Never faced technical problems during online learning	35%	65%
e-learning helps in saving time while studying	72 %	28 %
Students prefer online lectures over physical lectures in future	32%	68%

Practice	**yes**	**no**
Were you awarded certificates through online training courses related to the medical field	30%	70%
Did you participate in any online medical program organized by your faculty (lectures or educational session)	51%	49%
Did you use to study with a friend or group of friends through online meetings	45 %	55%
Did you purchase an electronic device in order to have access to e-learning opportunities	54%	46%

Discussion:-

The data on Statistical analysis for the Theory and Practical assent shows not much deviation

Theory Assement showed not much difference as the exam was conducted on same lines as pre - covid year,

Practical assesement showed a gross and significant change in 2017 for Above 75% category when compared to 2016 , the increase was 25% in ophthalmology while ENT showed no change in all category as stated by study conducted by Allo et. Al[1]

This change was due to pattern of examination adopted for maintaining covid -19 protocal . James et.al[2] implication of exemplary innovation in virtual clinical learning for medical centers , faculty and students,

The examination was on online mode based on charts and case scenario even viva voce was online , this has led to and significant increase in pass percentage in <75% category , use of bioscientific model of health to broaden the educational approach incorporate the behavioral ,social and environmental factors that influence learning

.

On questionnaire based google form evaluation for knowledge showed 85% to 97% responses in favor of online assement as it is convenient and easy method for leaning the subject. similar results were obtained in others studies[4,7,]

while the Attitude towards E learning 81% satisfaction, while 67% disagree when asked to compare online is better than offline learning, interaction with teacher is seen almost equal in both type of learning, E learning is accepted as convenient by about 71%.and it is time saving.

Regarding practice the question were answered in 50% e=except for the awards of certificates which more than 70% didn't get any appreciation.

Hence it is observed that there was not much difference in performance of students in theory but there was a improvement of performance in practical assement this could be due to change in pattern of assessment which involved models charts and pictures instead of live patients , moreover the students got adequate time in answering for responses ,and the examiner fear was also not there in online assessment . it is is observed that most of the studentsfavoured the online pattern to offline in assessment ,

Conclusion:-

This study has projected the online evaluation is more convenient for student and as well the teacher. It is also concluded that a portion of assessment should be on line even after covid threat as it gives confidence to students.

Drawback is the physical evaluation of patient is not carried in assessment program by the student

Limitation – this study was carried out on a small sample size involving only two subject

Implication:

• There is no financial involvement in this study as it is based on collection of the data (marks) and questionnaire.

Conflict of interest:

There is no other funding agency or institute involved in this study as this is questionnaire based study.

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