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Original research article

Evaluation of Various Designs of Online Assignments: Gender Wise Perception of Medical Students

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Abstract

Introduction and Background: The Corona virus Disease-19 (COVID-19) outbreak has rapidly transitioned into a pandemic affecting every field of life. There is a drastic transition also in field of teaching many challenges are faced by students and faculty, also regarding assessments. The present study was done to evaluate the gender wise perception of various modes of online assignments. **Methodology:** This study was conducted online on 100 first year medical students at the Army College of Medical Sciences, Delhi Cantt , New Delhi, India. A cross-sectional online survey was done using a pretested, self administered questionnaire. **Results**: Out of the sample group of 100 participants 98(53F,45M) responded. The most preferred mode of assessment was multiple choice questions. A significantly higher percentage of male students disliked seminar discussions and hand written assignments. **Conclusion:** A statistically significant dislike for seminars and handwritten assignments by male students could be attributed to their being from rural area and lesser accessibility. The present study conducted over a larger sample group would help medical educators in a better learning and teaching practice in the present scenario and for the future.

Key words: Online medical education, online assignments

Introduction

The transition from school education to a first-year medical education can be difficult for students because of the dramatic increase in the volume of content. Furthermore, today's medical students represent a broad spectrum in terms of age, experience, culture, ethnicity, and level of preparedness as well as learning preferences and styles. This diversity is welcomed; however, it also presents a challenge for instructors to meet the educational needs of all students. Specifically, student motivation and performance improves when instruction is adapted to student learning preferences and styles [1]. With the strike of Covid-19, an unprecedented rapid shift to remote learning happened worldwide with a paradigm shift to online learning from an institutional adjuvant luxury package and learner choice into a forced

solo choice. [2,3]This sudden transition plays a crucial role in the disruption of teaching at all the levels. Various educational resources including modern global digitalization have helped in the prevention of deficit in training and education of medical students. The sudden transition from on-campus learning to distant online learning approaches is quite challenging for both faculty and students. Thus, because students have significantly different learning styles, it is the responsibility of the instructor to address this diversity of learning styles among students and develop appropriate learning approaches [4].

Medical education has rapidly transitioned into online mode due to the COVID-19 pandemic and regular online assignments play a major role for a more effective self-learning and self-awareness. The effectiveness of online learning is influenced by many factors. Some factors create barriers for online learning, such as administrative issues, social interaction, academic skills, technical skills, learner motivation, time and support for studies, cost and access to the internet[5],but coins always have two sides. For some, online learning is advantageous as it is flexible, reduces the loads of books, save energy and time and is more convenient. Regular online assignments alone have a major role during this transition resulting in more effective self-learning and self-awareness [2]. These assignments improve the learner motivation, self confidence, teacher- student interaction and writing skills.
By keeping these factors in mind various online assignments are designed for the students & survey is conducted to evaluate the impression of various online assignments assigned. Evaluation of various designs of assignments and highlighting any gender preference, will enlighten educators to implement better learning and teaching practices in future. This study will be a great approach for enduring transformation in medical education for years to come for both online teaching and the conventional two-way (teacher-student) method. Most university faculty members have detailed content knowledge as a result of reading and studying avidly within their academic disciplines. Many have pedagogical knowledge from reading classic and contemporary literature on teaching and learning and from attending courses and workshops. However, obtaining knowledge of the learner and his/her characteristics is a vastly underutilized approach to improving classroom instruction.[6]

Material and Methods

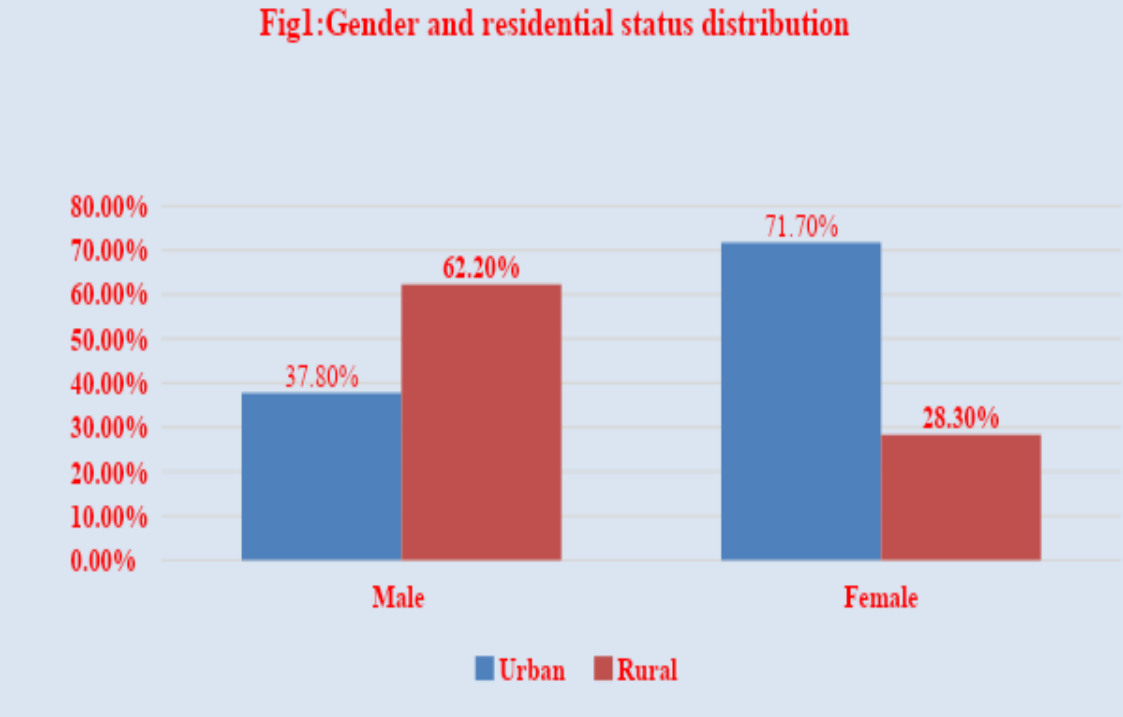
This study was conducted at the Army College of Medical Sciences, Delhi Cantt, New Delhi, India. A cross-sectional online survey was done using an pretested, self administered questionnaire A total of 100 students of first year MBBS took part in the survey voluntarily. Prior institutional ethical clearance was obtained.
Firstly, students were briefed on the aims and objectives of the survey and consenting-students were included in the study. Set of questionnaire based on different design of assignments like long questions, short questions, Multiple choice questions, uploading handwritten assignments or directly typing on google forms or Microsoft Teams, well labelled diagrams, online seminars & discussions were included. the anonymity and confidentiality were maintained during the study.

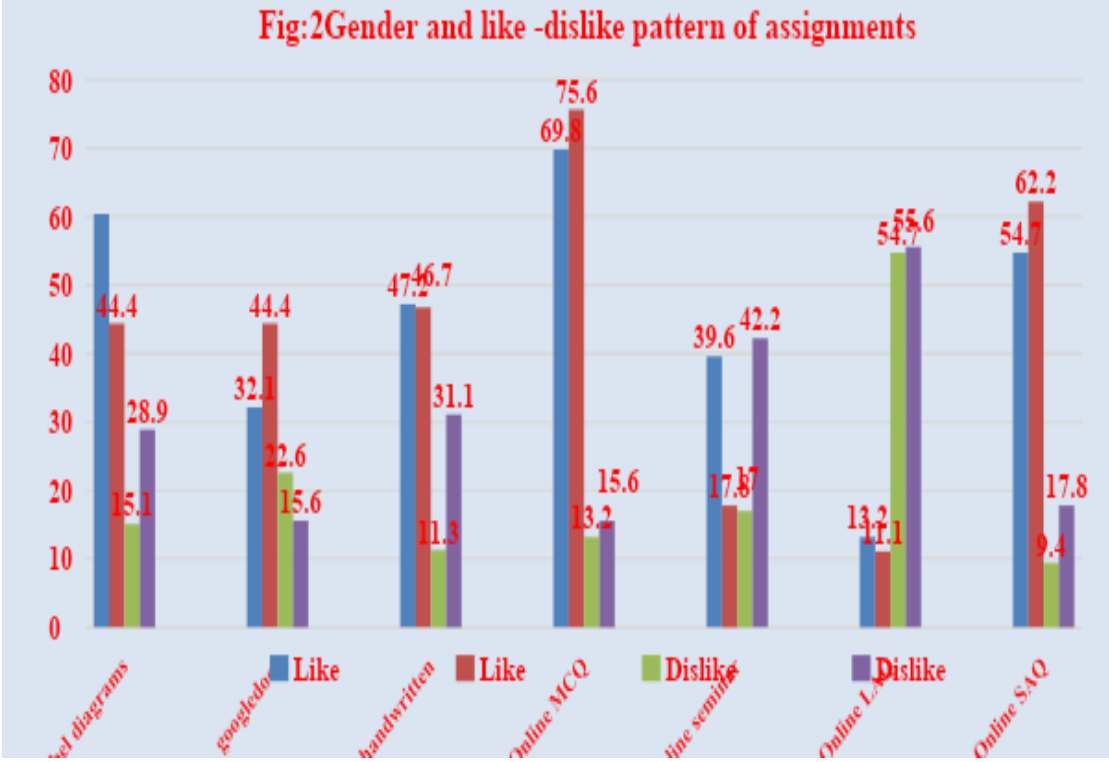
Results

Socio demographic characteristics

Out of the sample group of 100 participants 98(53F,45M) responded. Of them, n=55 students were from urban area(71.7%F,62.2%M) and n=43(28.3%F,37.8%M) from rural area as given in fig 1. Results indicate that majority of the girls are from urban area and there is less representation of girls from rural area doing professional education.

Of the urban female students 7.9% used laptop and among male only 2.2% used laptop as a means of communication.





Gender wise preference for various modalities of assignments.

Type of assignment	Female (n=)			Male (n=)			significance level
	Dislike	Like	neutral	dislike	like	neutral	
online label diagrams	15.1	60.4	24.5	28.9	44.4	26.7	0.186
Google docs	22.6	32.1	45.3	15.6	44.4	40	0.412
upload handwritten	**11.3**	47.2	41.5	**31.1**	46.7	22.2	***0.024***
online mcq	13.2	69.8	17	15.6	75.6	8.9	0.495
online seminar	**17**	39.6	43.4	**42.2**	17.8	40	***0.009***
online laq	54.7	13.2	32.1	55.6	11.1	33.3	0.95
online saq	9.4	54.7	35.8	17.8	62.2	20	0.161

As far as assignments were concerned, as shown in fig 2,3, 44.4% of the male students preferred google documents as compared to 32.1% female students. A significantly higher percentage of male students (42.2%) disliked seminar discussions (p=.009) and hand written assignments(20.4%)(p=.024).Multiple choice questions were highly preferred (75.6% male, 69.8% female).Long answer questions were liked least (11.2% male students and 13.2% female students).Short answer questions were liked almost equally (54.7% female, 62.2%male students).

Discussion

In a study by Rafique S etal [7]on Students' feedback on assessment online, students favouring short essay, multiple choice questions including, single best choice questions and descriptive questions were 209(38.8%), 176(32.7%), 70 (13%) and 28 (5%) respectively. But in our study with lesser samples descriptive questions were disliked by both category. A statistically significant dislike for seminars and handwritten assignments by male students could be attributed to their being from rural area and lesser accessibility to laptops. Using learning style responsive materials to instruct remedial writing students at an urban community college resulted in significantly higher achievement. [8]

Gender based differences in vision, hearing, and brain structure should be important to classroom educators because these factors affect how students perceive and process information about the world. Use of active coping skills also have found to decrease anxiety and to increase motivation among medical students [10] If teachers can better understand the biological variance between the genders then they can be better prepared to anticipate and accommodate their student's needs. [9]

Conclusion

In an era where availability of information is just a click away, modern, innovative, and technological advances need to be made in the teaching–learning process to aid both the learner and the facilitator. With this in mind, it is essential to recognize and acknowledge the views of the student to improve the teaching ways so that knowledge imparted is retained in a manner in which students inculcate an interest in the subject. Though many studies [5,11]

have been done to know about gender wise learning style preferences among first year medical students, none of them explained about types of assignments particularly online, and hence the current study is one of its kind proving a gender wise preferences in various modalities of online assignments. A statistically significant dislike for seminars and handwritten assignments by male students could be attributed to their being from rural area and lesser accessibility. The main barriers to online teaching appear to be family distractions, Internet connection and the timing of tutorials.COVID-19 pandemic has also shown its effects on mental health adversely on students also. This may be, in part, attributed to the lack of interaction with friends and colleagues leading to a rise in anxiety attributing as a stress factor too.

Alternatively, with exams being open book and with an unrestricted setting, students may be less prone to exam anxiety. Although, this does not address the family and noise disturbances which may still affect exam performance. As we change our curriculum, it is necessary to keep in mind the demands and needs of the present students. With the introduction of the competency-based medical education, the students' desire to have early clinical exposure and correlate their basic sciences' knowledge will be addressed. The changes can be incorporated while revising and improving the curriculum keeping in mind the university and medical council guidelines.

Limitations of this study included the use of self-reported data collection and the potential for response bias from students, though the open-ended feedback forms were collected anonymously to limit the possibility of response bias. This study if conducted over a larger sample group would help medical educators in a better learning and teaching practices in the present scenario and for the future.

Conflict of interest - Nil

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