Literacy Level and Self-Perceived Confidence of using Office Suite Applications among First Year Postgraduate Medical Students

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Abstract

Purpose: Basic knowledge of Office Suite Applications (OSA) such as Word Processor, Spreadsheet and Presentation Software is necessary for medical-postgraduate students for their academic and research activities. Our aim was to explore the literacy and self-perceived confidence of the medical-postgraduate students at entry level regarding OSA in a medical college in Delhi.

Methodology: A cross-sectional study was conducted among the first-year postgraduate students in a medical college in Delhi using a self-administered, structured and pre-validated questionnaire. A Likert scale was used to assess self-perceived confidence among the students. Responses to questions related to various OSA were scored to identify the literacy score for the application. Mann-Whitney U test was applied to find out significance of the observed differences between the median (IQR) literacy scores of the students regarding OSA based on their self-perceived confidence and previous use of the applications.

Results: Median (IQR) literacy scores of the students for Word Processor was 2.0 (2.0-3.0), Spreadsheet was 1.0 (0.0-2.0) and Presentation Software was 3.0 (2.0-4.0). The difference in the median scores of various OSA was statistically significant (Kruskal Wallis test P value <0.001). Although, majority perceived themselves to be confident about the use of Word Processor and Presentation Software, there was no significant difference in their median (IQR) scores over the students who reported themselves to be unconfident about those two OSA.

Conclusion: Training medical postgraduate students to use the OSA and boost their self-perceived confidence in using them is required.

Keywords: Medical education, Computer Software Applications

Introduction

Office Suite Applications (OSA) such as Word Processors, Spreadsheets and Presentation Software are extensively used for developing teaching-learning resources, statistical analysis data management, thesis and paper writing, preparation of teaching schedules, etc.

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DOI: https://doi.org/10.4038/seajme.v16i2.516

During medical postgraduate courses, OSA are consistently used by the students in learning activities like presenting clinical cases, seminars, thesis research and in teaching medical undergraduates (National Medical Commission, 2020). Computer literacy positively affects students' tendency to use e-media of information (Shaheen et al., 2016). Although the use of the OSA is crucial to navigate medical postgraduate courses effectively, we could not identify any study on competency of medical-postgraduate students to use OSA.

This study aims to explore the literacy level and self-perceived confidence of medical-postgraduate students at entry level regarding OSA use in a medical college in Delhi, India.

Methodology

A cross-sectional study was conducted among the first-year postgraduate students in a medical college in Delhi after approval from the institutional ethics committee, *vide* letter no. IEC-HR/2019/41/146 was obtained. Universal sampling technique was adopted. All the students who took admission in the year 2018 were included. A self-administered, structured and pre-validated questionnaire was used comprised of four sections, (i) Socio-demographic details, (ii) Computing device use (iii) Use and self-perceived confidence regarding use of OSA: It included questions about previous use of the OSA i.e., Word Processor, Spreadsheet and Presentation Software. The self-perceived confidence was assessed by a five-point Likert scale ranging from Very Unconfident to Very Confident. Those who marked confident or very confident were considered to be confident in using the application. (iv) Literacy about the OSA: comprised of five questions each for the three OSA. One point was awarded for a correct response, the range of knowledge score varied from 0-5 for each application. Data analysis was done using SPSS software (IBM SPSS, Version 20.0, Armonk, NY, USA). Normally distributed variables such as age are presented as mean and standard deviation (SD). The literacy scores of the students were presented as median and interquartile range (IQR). Mann-Whitney U test was applied to observe the differences in median (IQR) literacy scores about the OSA based on their self-perceived confidence & previous use of the OSA. Kruskal Wallis test was used to observe the significance of difference of scores within the OSA.

Table 1: Knowledge scores about office suite applications with respect to having ever used the office suite application and the self-perceived confidence status to use the office suite application (N=127)

Office Suite Application				Median (IQR) knowledge score of the test about the application	P value
Ever used	Word processor	Yes	115 (90.55)	2.0 (2.0-3.0)	0.827
		No	12 (9.45)	2.0 (1.0-3.0)	
	Spreadsheet	Yes	73 (57.48)	1.0 (1.0-2.0)	0.001*
		No	54 (42.52)	0.5 (0.0-1.0)	
	Presentation software	Yes	114 (89.76)	3.0 (2.0-4.0)	0.566
		No	13 (10.24)	1.0 (1.0-2.0)	
Self-perceived confidence	Word processor	Yes	73 (57.48)	2.0 (2.0-3.0)	0.827
		No	54 (42.52)	2.0 (2.0-3.0)	
	Spreadsheet	Yes	37 (29.13)	1.0 (1.0-2.0)	0.001*
		No	90 (70.87)	1.0 (0.0-2.0)	
	Presentation software	Yes	88 (69.29)	3.0 (2.0-4.0)	0.566
		No	39 (30.71)	2.0 (1.0-4.0)	

**Statistically significant*

Results

A total of 127/145 (87.5%) students responded with fully completed questionnaires. The mean (SD) age of the students was 25.6 (±2.22) years. About half of the students were women (67, 52.8%). Most of them (120, 94.49%) either owned a desktop or laptop with a median (IQR) duration of ownership of 7 (4.0-10.0) years. The seven (5.51%) students who owned neither desktop nor laptop were using a tablet or smartphones as a computing device. Windows

(114, 89.76%) was the most commonly used operating-system. Most postgraduate students reported having previously used Word Processor (90.55%) and Presentation Software (89.76%) while around half (57.48%) of them had ever used a Spreadsheet. The median (IQR) literacy score of the students for Word Processor, Spreadsheet and Presentation Software were 2.0 (2.0-3.0), 1.0 (0.0-2.0) and 3.0 (2.0-4.0) respectively. There was significant difference in the median scores of various OSA (Kruskal Wallis test P value <0.001). Those who had previously used the Spreadsheet or Presentation Software had significantly higher scores in their respective domains as compared to those who had never used them. Among the three OSA most of the students (90, 70.86%) reported themselves to be unconfident in using Spreadsheet. The proportion of students who reported as being self-confident in using Word Processor, Spreadsheet and Presentation Software were 57.48%, 29.13% and 69.29% respectively. Although, majority of the students perceived themselves to be confident about the use of Word Processor and Presentation Software, there was no significant difference in their median (IQR) scores over their counterparts.

Discussion

Word processor was OSA that was previously used by most of the postgraduate students, followed by Presentation Software. Spreadsheet was the least used application. The median literacy score of the students about OSA was highest in Presentation Software followed by Word Processor and lowest for Spreadsheet application. This may be because we observe that medical undergraduates nowadays present seminars using Presentation Software and even in secondary schools the trend to teach on Presentation Software is increasing. However, Word Processor and Spreadsheet software are used less commonly. A study from Kerala among dental-postgraduate students reported their proficiency as 'expert level' among 100% of the students for Word Processor and Spreadsheet, software and about 90% of students for Presentation software (Uma & Kavitha, 2020). Despite a majority of the students owning a computer, the deficiency in basic literacy of OSA could be due to use of computers for other purposes such as entertainment, social-networking, etc (Madaan *et al*., 2020). Those who had ever used Spreadsheet or Presentation Software had significantly higher literacy than those who had never used them. No such difference for Word Processor was observed. This maybe because the students have not been trained in a systematic or structured format but learnt it on their own volition and interest. The perceived self-confidence about using OSA was found to be lowest for Spreadsheets and about one-third of the postgraduate students reported being unconfident in using Word Processor or Presentation Software. Self-confidence was not reflected in their literacy scores for Word processor and Presentation Software. We could not find any study on confidence among medical or non-medical college students regarding use of OSA.

Since this was primarily a descriptive study, associations found were exploratory in nature and thus, cannot be generalized. The study was conducted in 2018 which was before the introduction of Competency-Based Medical Education by the National Medical Commission of India, and it needs to be seen in the future whether students trained in computer skills through a foundation course show a difference in their postgraduate level of competence.

There is a need to train postgraduate students in the use of OSA and boost their confidence in use. Special training modules on Spreadsheet use may also be required for medical students.

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