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Introduction of reflective writing as a Learning Tool for community visits under family adoption programme

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ABSTRACT

Introduction

Competency based curriculum for medical undergraduate students considers reflective writing as an essential aspect pertaining to self-directed learning. Reflective writing during community visits helps medical undergraduate in developing the habit of questioning themselves and subsequently finding solutions pertaining to various community based health care.

Aim and Objectives

To explore reflective writing skills during family visits by undergraduate medical students and assess reflective writing skills after sensitization to a reflective writing model

Methods

The cross-sectional study was conducted in the department of Community Medicine among Phase I and II medical undergraduate students. After completing their family visits, students from both batches were asked to write reflections using google form based on Gibbs reflective cycle. This was followed by sensitization session for writing reflections based on various components of Gibbs cycle. Following the session, students repeated the process of writing down reflections. The level of reflective writing was assessed by using validated rubric based scale for Application, Depth, Quality and Structure for various components of Gibb's reflective cycle (Description, Feeling, Evaluation, Analysis, Conclusion, Action plan). For grading, five point rubric based scale was used. Satisfaction level for the use of this model for reflective writing by students was determined on Four point Likert scale.

Results

All the mean scores before and after sensitization session were statistically significant within phase I & II students ($p<0.001$). Comparative rubric based analysis for phase I and phase II MBBS students for various parameters of Gibb's Reflective cycle model (Application, Depth of Reflection, Quality of information, Structure & organization showed significant differences with scores higher for phase II students as compared to phase I ($p<0.001$). The assessment of satisfaction levels for using Gibbs reflective writing model revealed that 54 students (90%) students were satisfied from phase I MBBS while 81students (93%) were satisfied from phase II.

Conclusion

Gibbs' Reflective Writing Model was well-received by MBBS students, with high satisfaction levels reported in both Phase I and Phase II. The findings highlight the importance of reflective practice in medical education and suggest that structured reflection can be a valuable tool for enhancing learning and professional development.

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INTRODUCTION

Family Adoption Programme is recommended as a part of competency-based curriculum of Community Medicine and begins from first professional year. Adopted families are followed throughout the MBBS training program. The programme provides an excellent learning platform to MBBS community-based health care and thereby equity in health. Competency based curriculum for medical undergraduate students considers reflective writing as an essential aspect pertaining to self-directed learning [1] It is one of the most extensive variety of teaching of reflections in medical education teaching. [2,3] Enhancing reflective capacity amongst medical students helps in improving critical thinking skills [4, 5], case-based reasoning [6] and professionalism [7]. Reflective writing is an effective tool for getting desired feedback in medical education [8,9]. Since reflection is contextual, hence feedback is of utmost importance to substantiate the scenario reflected upon by the students [10,11]. There are many reflective cycle models which impart detailed insight into self-reflected experiences. These models help in experiential learning and subsequent improvement of any situation in future. Gibbs reflective cycle is a well-known model for reflective writing that depicts the written experience based on Description, Feelings, Evaluation, Analysis, Conclusion and Action plan [12]. Reflective writing during community visits helps medical undergraduate in developing the habit of questioning themselves and subsequent finding solutions pertaining to various community-based health care. This will help in betterment of community-based services by future graduates. So reflective writing skills should be developed from early years of undergraduate medical training and should be carried forwards. There is scarcity of research on reflective writing practices under family adoption programme in undergraduate medical education. With this background the present study has been planned to explore and enhance the reflective writing skills as learning tool for community visits under family adoption programme.

OBJECTIVES:

1. To explore reflective writing skills during family visits by undergraduate medical students
2. To assess reflective writing skills after sensitization for reflective writing model
3. To compare pre and post sensitization level of reflective writing.

METHODOLOGY:

STUDY DESIGN: Cross Sectional study

STUDY SITE: Department of Community Medicine

STUDY POPULATION: Medical undergraduates (Phase I, II) STUDY DURATION: October 2024 to December 2024 INCLUSION CRITERIA:

Undergraduate medical students willing to participate in the study

EXCLUSION CRITERIA:

Those students not available at the time of study

STUDY PLAN, TOOLS AND TECHNIQUE:

The study was undertaken after obtaining institutional ethical committee approval. A Semi structured google form based questionnaire validated in consultation with experts from the department of Community Medicine was used. Anonymity of study participants was considered during preparation of google form. Study participants included medical undergraduates from Phase I, II categorized based on National Medical Commission (NMC) curriculum as first professional and second professional. Each phase is comprised of 120 students. Under the programme, three families are allotted to each student in an area outside the service provision under Urban health /Rural health training centres, Department of Community medicine . Written informed consent was obtained from all the participants. Brief handout in Pdf format mentioning the steps of Gibb's reflective cycle was shared on WhatsApp to the students prior to family visit. Link for the generated google form was shared among the students after visit to the allotted families. Information was sought from students for various parameters of Gibbs reflective cycle. Sufficient time was provided for expressing their details pertaining to family visit. Then prior to next scheduled visit to the families, a detailed session on teaching the students about Gibb's reflective cycle-based model was taken. Power point presentation and relevant videos were shown followed by interactive discussions. Queries by the students were addressed simultaneously. After coming back from family visit, google form was shared among students for writing the reflections. Sufficient time was provided to all the students to fill the reflections for their respective family visit. Numbering was done sequence wise depending upon the time for the received responses in the google form. Level

of reflective writing was determined by using rubric based scale for Application, Depth, Quality and Structure for various components of Gibb' reflective cycle (Description, Feeling, Evaluation, Analysis, Conclusion, Action plan). Five-point rubric-based scale was used (Excellent=5, Good=4, Fair=3, Poor=2, None=1). Assessment of level of reflection was conducted by two faculty members trained in medical education. These faculty members were not part of study to avoid bias. Satisfaction level for the use of this model for reflective writing by students was determined on Four-point Likert scale (Fully satisfied=4, Moderately satisfied=3, Slightly satisfied=2, Not satisfied=1).

ANALYSIS: Statistical package for social sciences (SPSS 26 version) was used to import data from google sheets. Data was then analysed. Descriptive statistics such as frequency, mean, standard deviation, median and range calculated.

Table 1: Characteristics of study population

	Phase I MBBS students		Phase II MBBS students	
Mean age in years (SD)	20.46 (1.37)		21.03 (1.12)	
Gender n (%)	Male	17(28.3)	Male	22(25.3)
	Female	43(71.7)	Female	65(74.7)

Comparison between pre and post sensitization groups was done using paired T test and unpaired T test was calculated for comparing groups. P value <0.05 was considered statistically significant.

ETHICAL CONSIDERATIONS: Written informed consent obtained from the participants prior to recruitment in the study. All possible information regarding the study was given. Confidentiality of the participants was maintained. They were given the option of quitting from the study if so desired by them. No element of compulsion was exerted. The approval of the ethical committee of institute was obtained before beginning data collection.

RESULTS

From phase I MBBS, sixty students (50%) participated in the study. The mean age of the students was 20.46 years (range:19 -26, SD: 1.37). Female students comprised 43(71.7%), while 17(28.3%) were male. A total of 87 students (72.5%) participated from phase II MBBS. The mean age of the students was 21.03 (range: 19 - 24, SD:1.12). Of these, 65(74.7%) were female and 22(25.2%) were male.[Table 1]

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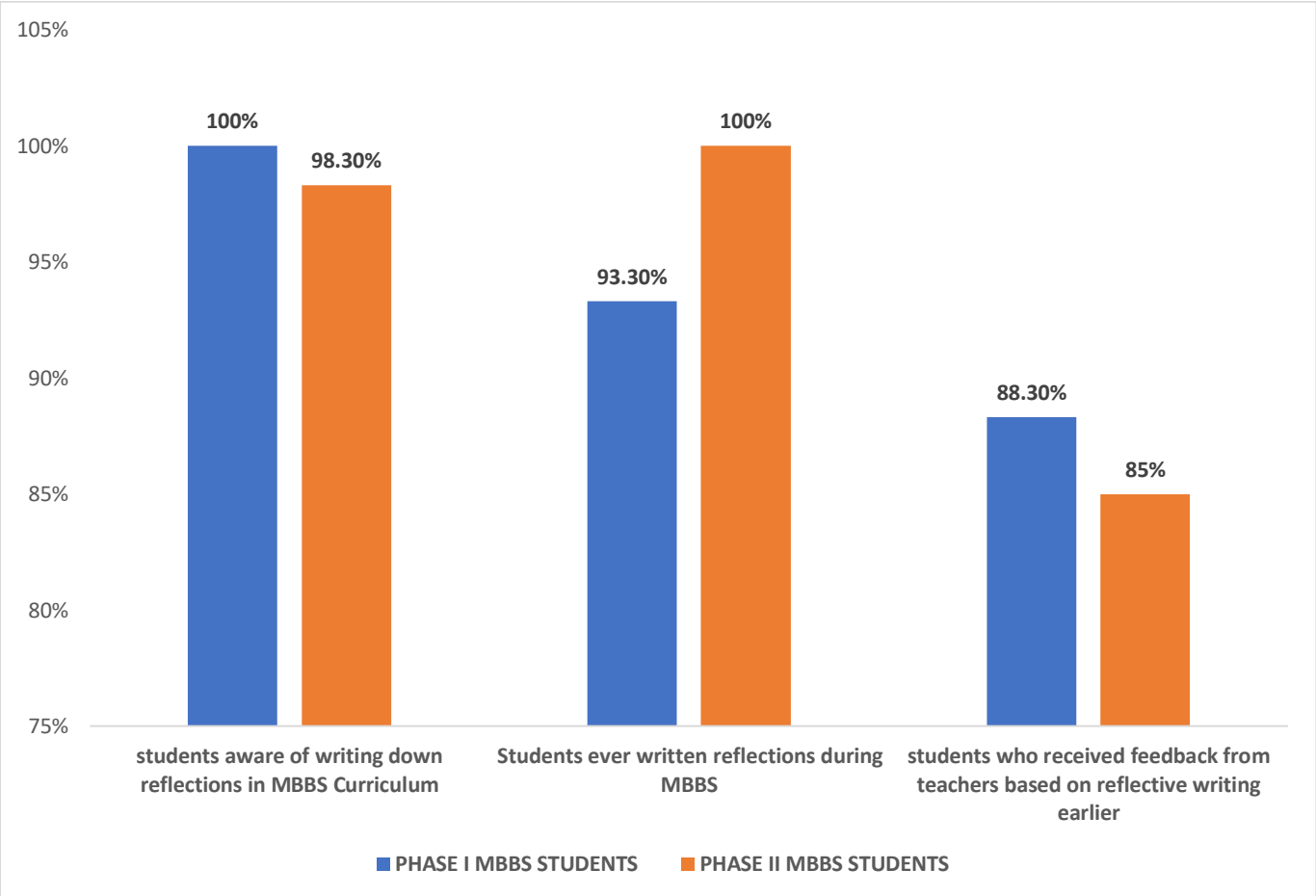
Regarding awareness of reflective writing, 59 students (98.30%) from phase I MBBS and all students from Phase II MBBS were aware. 56 students (93.3%) of phase I MBBS and all phase II MBBS students had previously written reflections during MBBS course.

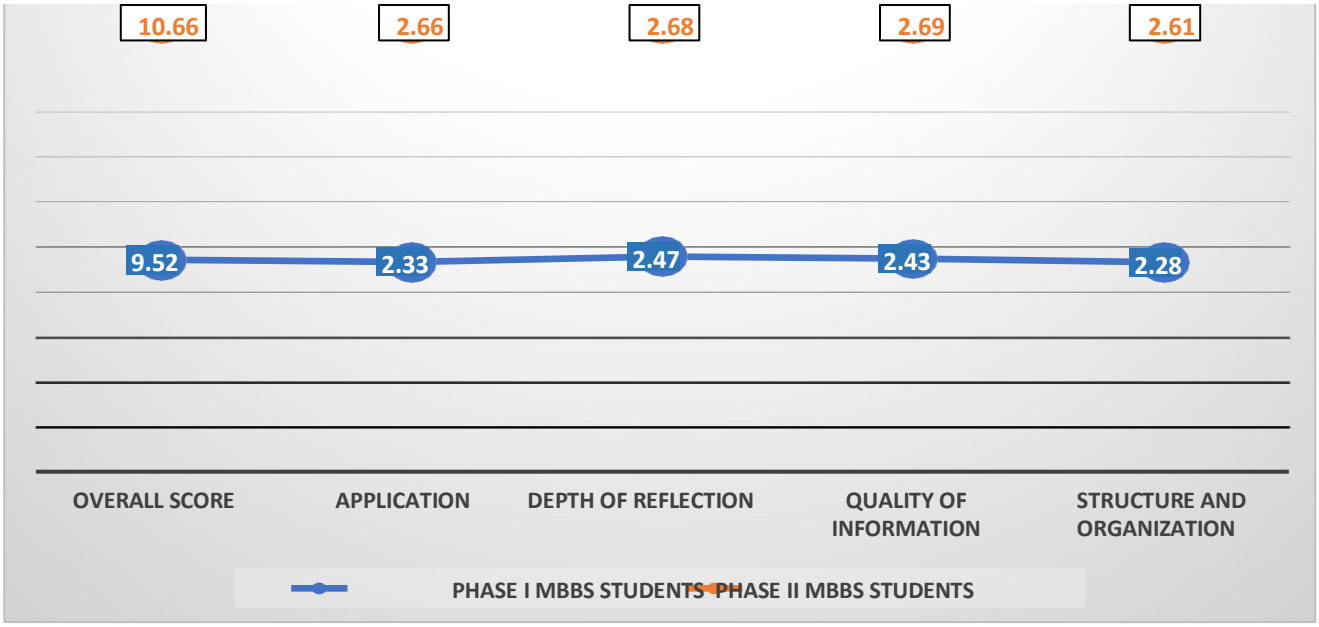
Regarding the reception of feedback from faculty 53 students (88.30%) from phase I MBBS and 74 students (85%) from phase II MBBS reported receiving feedback [Fig 1].

Fig 1: Comparison of Existing Awareness, Writing and Feedback reception based on reflections among the study population



Mean rubric scores for reflections based on Gibb's Reflective cycle for Application of Gibbs reflective cycle, Depth of Reflection, Quality of information and Structure organization showed an overall score of 9.52, 2.33 for Application of Gibbs reflective cycle, 2.47 for Depth of Reflection, 2.43 for Quality of information and 2.28 for Structure and organization for phase I MBBS students prior to sensitization session [Fig 2]. The mean scores post sensitization session showed an overall score of 11.43, 2.73 for Application of Gibbs reflective cycle, 2.92 for Depth of Reflection, 2.72 for Quality of information and 3.07 for Structure & organization. The mean score for Structure & organization was maximum (3.07) which considered the written reflections in concise and organized way and expression of thoughts in logical way. All the mean scores before and after sensitization session were statistically significant ($p<0.001$) [Fig 3].

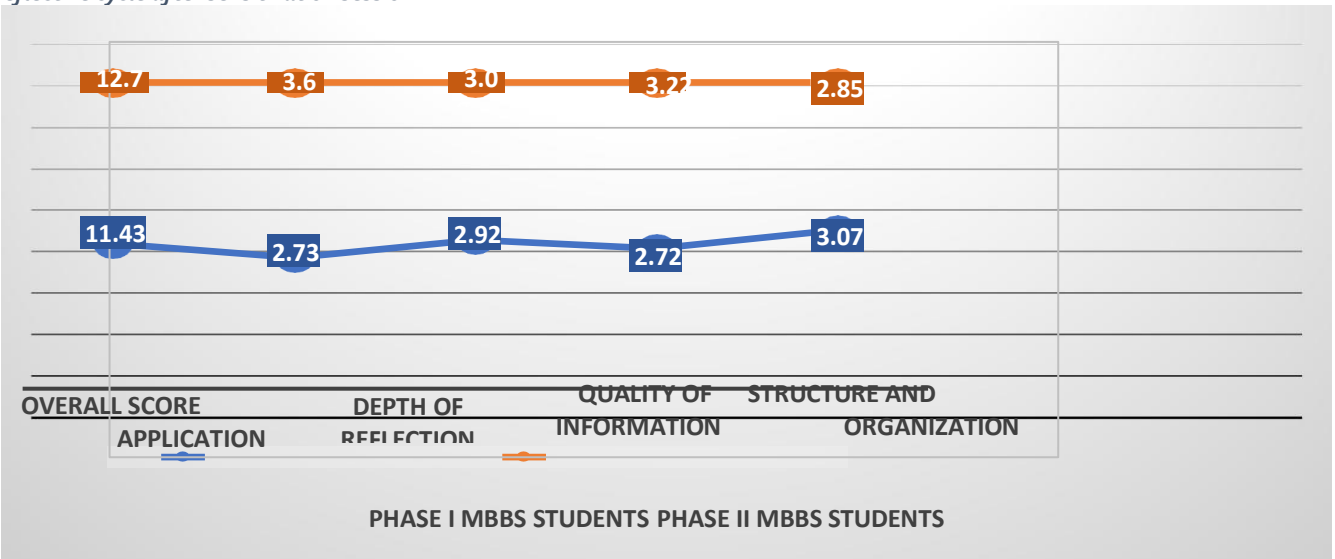
Fig 2: Mean rubric scores for reflections based on Gibb's Reflective cycle before sensitization session



For phase II MBBS students, Mean rubric scores for reflections based on Gibb's Reflective cycle for application of Gibbs reflective cycle, Depth of Reflection, Quality of information and Structure & organization before sensitization session showed an overall score of 10.66, 2.66 for Application of Gibbs reflective cycle, 2.68 for Depth of Reflection, 2.69 for Quality of information and 2.61 for Structure & organization.[Fig 2]

The mean scores post sensitization session showed an overall score of 12.72, 3.66 for application of Gibbs reflective cycle, 3.09 for Depth of Reflection, 3.22 for Quality of information and 2.85 for Structure & organization. The mean score for application was maximum (3.66) which considered the concise description, discussion of feelings, details for evaluation and analysis, clear conclusion and structured action plan. All the mean scores before and after sensitization session were statistically significant ($p<0.001$). [Fig 3]

Fig 3: Mean rubric scores for reflections based on Gibb's Reflective cycle after sensitization session



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Comparative rubric based analysis for phase I and phase II MBBS students for various parameters of Gibb's Reflective cycle model which included Application of Gibbs reflective cycle, Depth of Reflection, Quality of information, Structure & organization showed significant differences with scores higher for phase II students as compared to phase I. ($p<0.001$) [Table 2]

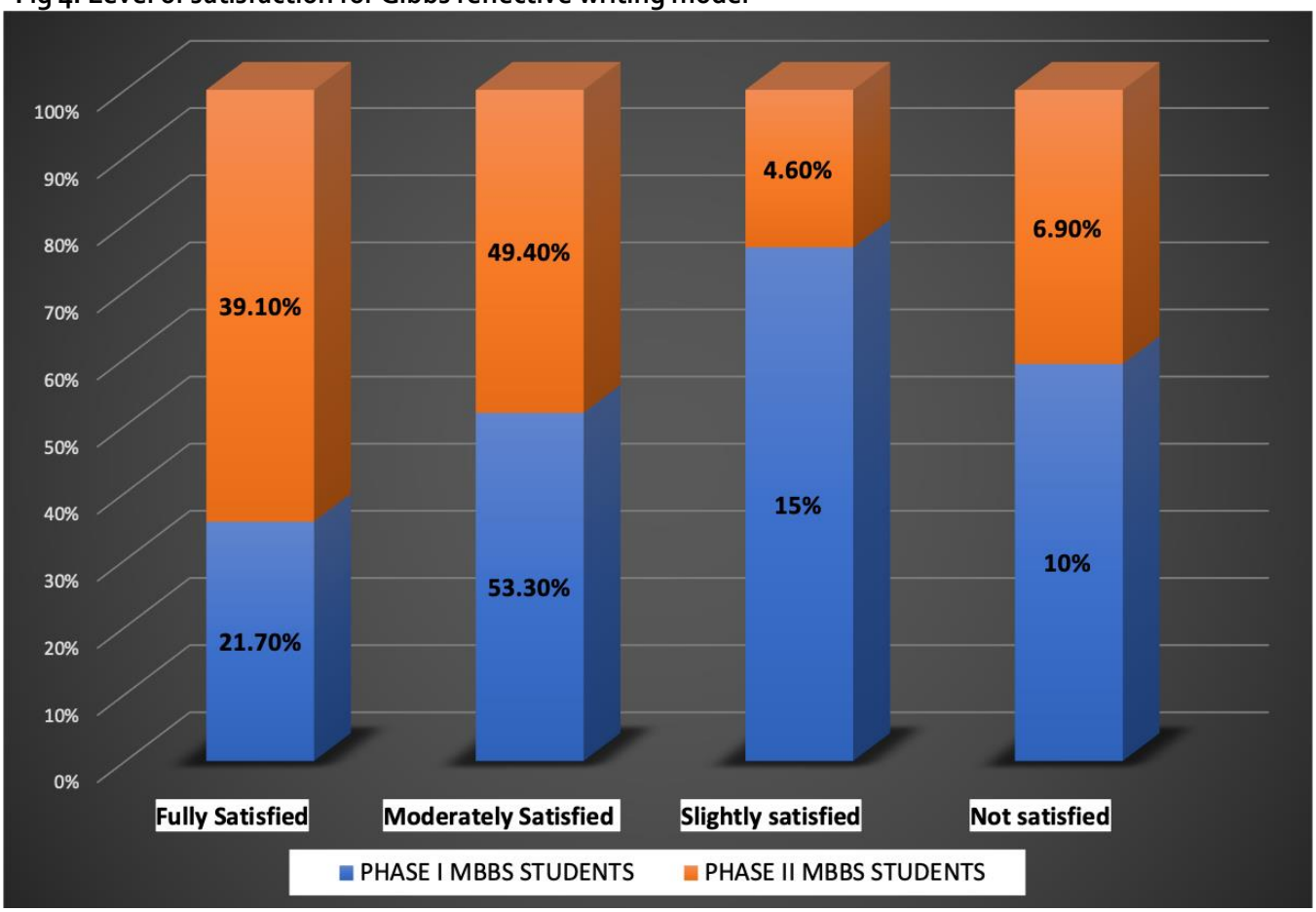
Table 2: Comparison of rubric score between Phase I & II MBBS students before and after sensitization session

Before sensitization session					
Overall Score	MBBS phase	Number	Mean	Std. Deviation	Sig. (2-tailed)
Application of GIBB'S reflective cycle	1	60	9.5167	1.57837	<0.001
	2	87	10.6552	1.84786	
Depth of Reflection	1	60	2.3333	0.47538	<0.001
	2	87	2.6552	0.47807	
Quality of Information	1	60	2.4667	0.56648	0.015
	2	87	2.6782	0.46989	
Structure & Organization	1	60	2.4333	0.53256	0.002
	2	87	2.6897	0.46532	
After sensitization session					
Overall Score	1	60	11.4333	1.555 38	<0.001
	2	87	12.7241	1.507 27	
Application of GIBB'S reflective cycle	1	60	2.7333	0.660 42	<0.001
	2	87	3.6552	0.643 89	
Depth of Reflection	1	60	2.9167	0.497 17	0.032

	2	8 7	3.0 92	0.4 73 29	
Quality of Information	1	6 0	2.71 67	0.6 40 22	<0.001
	2	8 7	3.2 184	0.9 32 93	
Structure & Organization	1	6 0	3.0 667	0.7 33 38	0.0 49
	2	8 7	2.8 506	0.5 81 27	

The assessment of satisfaction levels for using Gibbs reflective writing model revealed that down reflections showed that 54 students (90%) students were satisfied from phase I MBBS were satisfied, while and 81students (93%) were satisfied rom phase II. The majority of students were either fully or moderately satisfied with 45(75%) from phase I MBBS and 77 (88.5%) from phase II. [Fig 4]

Fig 4: Level of satisfaction for Gibbs reflective writing model



DISCUSSION

Reflections in undergraduate medical education within the Family Adoption Programme contribute to enhancing community-based learning. This enable students to learn from past experiences, identify mistakes, and strive towards continuous improvement. Through reflection, students refine their community-based communication skills and enhance their overall learning process. The purpose of the present study was to introduce reflective writing as a learning tool for community visits under family adoption programme. From, phase I MBBS, Sixty students (50%) participated in the study and a total of 87 students (72.5%) participated from phase II MBBS. Reason for less participation from phase I students was their more focus on examination subjects and low priority to family adoption programme. The results of the study showed that rubric score based on Gibb's reflective cycle improved after sensitization session in the study group suggesting improved learning. The findings demonstrate a statistically significant improvement ($p<0.001$) in all evaluated domains—Application of Gibbs' Reflective Cycle, Depth of Reflection, Quality of Information, and Structure & Organization—among both Phase I and Phase II MBBS students. In phase I students, before the sensitization
session, the overall mean rubric score was 9.52, with the lowest score observed in Structure & Organization (2.28) and the highest in Depth of Reflection (2.47). Post- sensitization, the overall score increased to 11.43, with notable improvements across all domains. The most significant improvement was observed in Structure & Organization (3.07), indicating that students learned to present their reflections in a more concise, organized, and logically structured manner. This suggests that the sensitization session was particularly effective in helping students articulate their thoughts more coherently, ensuring that reflections followed a logical sequence as required by Gibbs' framework. The improvement in Depth of Reflection (2.92) and Quality of Information (2.72) indicates that the students became better at analyzing their experiences, discussing emotions, and formulating structured action plans. The Phase II students initially had higher scores compared to Phase I students, with an overall pre-session mean score of 10.66. Their lowest score was in Structure & Organization (2.61), and the highest in Quality of Information (2.69). Following the sensitization session, the overall mean score improved to 12.72, with application of reflection (3.66) showing the greatest improvement. This suggests that the sensitization session effectively enhanced student's ability to critically engage with their experiences, evaluate and formulate well-structured action plans. Compared to Phase I students, Phase II students demonstrated a greater improvement in their ability to reflect deeply, possibly due to their more advanced academic standing and prior exposure to clinical scenarios. The results highlight the importance of structured interventions, such as sensitization sessions, in improving reflective writing skills.

The comparative analysis of rubric-based scores between Phase I and Phase II MBBS students revealed significant differences in their reflective abilities as evaluated through Gibbs' Reflective Cycle. The higher scores observed in Phase II students across parameters such as the application of Gibbs' reflective model, depth of reflection, quality of information, and structure and organization ($p < 0.001$) suggest a developmental trajectory in reflective learning, consistent with previous studies. Studies have shown that reflective models like Gibbs aid in fostering critical thinking and bridging the gap between theoretical knowledge and clinical application (Moon, 2004). [13] Continuously improved learning results, due to reflective writing as there is integration of new knowledge with pre-existing one. [14] The ability of Phase II students to effectively apply Gibbs' Reflective Cycle is likely attributed to increased familiarity with reflective practices. ($p<0.001$) This aligns with findings from Duke, S (2000), who observed

that reflective practices get refined with time. Enhanced learning is due to cumulative learning experiences and improved contextual understanding [15]. This is in contrast to study by Mamede S which suggested that reflective practice tends to decline as experience grows, [16]. The findings from the assessment of satisfaction levels with Gibbs' Reflective Writing Model demonstrate a high degree of acceptance and satisfaction among MBBS students across both Phase I and Phase II. The study highlights that 90% of Phase I students and 93% of Phase II students were satisfied with the use of Gibbs' model for reflective writing. This suggests that the majority of students found the model beneficial for self- reflection and learning. Additionally, the data show that most students were either fully or moderately satisfied, with 75% (45 students) in Phase I and 88.5% (77 students) in Phase II reporting significant levels of satisfaction. Possible Reasons for High Satisfaction is structured reflection process. Gibbs' model provides a clear step-by-step approach to reflective writing, which likely made it easier for students to critically analyze their experiences and learn from them. Reflective writing encourages deeper understanding and self-improvement, which may have contributed to students feeling more engaged in their learning process. The slight increase in satisfaction from Phase I to Phase II (from 90% to 93%) may suggest that students become more comfortable and adept at using the model as they progress in their studies. By engaging in structured reflection, students may have gained greater insight into their strengths and areas for improvement, leading to a positive perception of the model.

CONCLUSION:

Gibbs' Reflective Writing Model was well-received by MBBS students, with high satisfaction levels reported in both Phase I and Phase II. The findings highlight the importance of reflective practice in medical education and suggest that structured reflection can be a valuable tool for enhancing learning and professional development.

IMPLICATIONS:

The high levels of satisfaction among the medical graduates indicate that Gibbs' Reflective Writing Model can be an effective tool for promoting critical thinking and self-reflection in medical education.

These findings support the integration of structured reflection exercises into the MBBS curriculum to enhance student learning and professional growth.

LIMITATIONS AND FUTURE DIRECTIONS:

While the study presents strong evidence of student satisfaction, further research is needed to explore the long-term impact of reflective writing on clinical practice and professional development. Additionally, qualitative feedback from students could provide deeper insights into the specific benefits and challenges they face when using Gibbs' model.

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ETHICAL CONSIDERATIONS:

Written informed consent obtained from the participants prior to recruitment in the study. All possible information regarding the study was given. Confidentiality of the participants was maintained. They were given the option of quitting from the study if so desired by them. No element of compulsion was exerted. The approval of the ethical committee of institute was obtained before beginning data collection.

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