A STUDY OF RELATIONSHIP BETWEEN TEACHING PRESENCE WITH COGNITIVE AND SOCIAL PRESENCE IN ONLINE GROUP TASKS

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ABSTRACT

Group work is an effective way of learning in traditional classrooms. To foster effective involvement, academics have emphasised the need to study group interactions more closely in online learning environments. However, online classrooms have made group work more difficult during the post-pandemic period. Therefore, the study investigated how learners perceive mixed-mode group work at different stages of study. Moreover, some learners are more benefiting and more comfortable in groups expressing ideas and opinions under the direction of teachers. The data was collected via a questionnaire. The study employed a modified version of the instrument developed by earlier researchers. The questionnaire was examined using the Social Science Statistical Package (SPSS). The study surveyed 296 randomly selected participants from Universiti Teknologi MARA to investigate how learners view these three factors in mixed-method group work. The study has three main sections. Section A covers demographic profiles. Section B includes eight cognitive presence-related elements, Section C contains eight social presence elements, and Section D comprises eight teaching presence elements. A summary of findings reveals that the three subconstructs of teaching presence, cognitive presence, and social presence consumed good reliability. The Cronbach alpha for the study instrument is 0.842. The presence of teaching in these groups was discovered to have a moderate impact on the relationship between the presence of cognitive and social people in mixed group work. Thus, hybrid learning, which uses a group-work approach in classrooms, offers exciting implications for each form of presence.

Keywords: Cognitive Presence, Online Group Work, Social, Teaching Presence

1.0 INTRODUCTION

1.1 Background of Study

Group work has been proven to be an effective method for learners since traditional classrooms. To promote effective involvement, academics have highlighted the need to study group interactions in online learning environments more closely. By participating students, the terms collaboration, group, and cooperative learning can be used interchangeably to minimise individual cooperative learning. Most students were satisfied

with their academic achievements, considering that the collaborative learning environment helped them to learn effectively in a comfortable environment (Novitasari, 2019). A study of the perceptions of learners in mixed group learning experiences is necessary for several reasons. By establishing the presence of teaching, the social and cognitive presence of online classes will enable meaningful learning in collaborative work between learners (Jitendra Singh and others, 2022).

Since the breakup of COVID-19, the country's educational landscape has changed. Higher education is increasingly incorporating online and mixed learning, and research on this subject has grown considerably. The current learning strategy adopted by many universities is fast adjusted to the learning process, and students can follow various learning methods, including face-to-face classes or online courses guided by teachers. Education providers are not fully prepared for remote learning, making it difficult to establish social and cognitive presences to improve students' learning experiences (Meda and ElSayary, 2021). However, the challenge to overcome is for learners to work in groups. An overview of the impact on students' perceptions of mixed learning situations is given by the study. As a result, Malaysian teachers can use research results and effective techniques into their teaching methods to enhance the creation, delivery, and design of curricula and to strengthen their dedication to completing group projects in a variety of learning environments.

1.2 Statement of Problem

In today's learning, various methods and approaches have been taken to ensure that every student receives the best education. It began with face-to-face methodology, but it is more modern and systematic today. The framework of Community of Inquiry (CoI) approach is among the best methods for teaching students online (Pool, Reitsma and Berg, 2017). The challenge is how each student understands the lecturer's words. Although each professor used the best approach in each lesson, some students left school and fell behind. It has been shown that many studies related to this theory have been used from the CoI theory. However, there is still a research gap, such as the correlation between the presence of teaching and the cognitive and social presence in the tasks of the online group.

1.3 Objective of the Study and Research Questions

This study is done to explore the perceptions of learners on their use of learning strategies. Specifically, this study is done to answer the following questions.

- How do learners perceive teaching presence in mixed mode group work?
- How do learners perceive cognitive presence in mixed mode group work?
- How do learners perceive social presence in mixed mode group work?
- Is there a relationship between teaching presence and cognitive and social presence?

2.0 LITERATURE REVIEW

2.1 Online Learning

Online learning has recently been widely known for its flexibility, convenience, and accessibility. Online learning refers to educational courses and programs that are delivered entirely or in part by the Internet, using various technologies such as Internet conferences, video lectures, discussion forums, and online assignments. Personalised learning is one of the benefits of online learning; teachers can tailor course materials and assessments to each

student's needs; students have more opportunities for self-directed learning through online learning, which boosts motivation and participation (Garrison & Kanuka, 2021). In addition, effective online courses should offer opportunities for cooperation and discussion, as these activities can improve the education of students and promote social participation (Garrison & Cleveland-Innes, 2021).

Zhong (2022) highlighted that self-regulation, the presence of teaching, and society are important predictors of students' engagement and persistence in a mixed synchronous learning environment. Their research shows that promoting these elements can improve learning results and reduce dropout rates. Turk et al. (2022) discovered that the presence of teaching and social has a significant impact on the satisfaction of students' perception of the ability to meet their psychological needs, consequently on their engagement and persistence in online courses. The development of online learning has been significantly influenced by technological advancement such as learning management systems (LMS), video conference platforms, and interactive multimedia have improved the provision and accessibility of online education. Woo et al. (2023) examined the impact of these technologies during remote emergency education (ERT) and concluded that they were essential to maintaining continuity of education and participation of students in the COVID-19 pandemic. Despite the benefits, online learning after COVID-19 poses several challenges, including digital differences, learning isolation, and different levels of technical competence. Studies by Moore and Kohnke (2021) and others highlight these issues and emphasise the need for equitable access to technology and continuous professional development for educators to use online tools effectively.

2.2 Online Group Work

The interaction of students, including discussions and collaborations between colleagues, is an important feature of effective and interactive online learning experiences. Davidson and Katopodis (2020) believe that advice is the best way to work in a successful online group and effectively collaborate with students. When students deal with important projects with real consequences, learning will be improved. Furthermore, they encourage students to work online and ask them to create a job description to increase participation. They proposed some intermediate dates and, at each milestone, outlined precise delivery dates for each group member. Start asynchronous group work (in class) at check-in, where students share completed tasks and subsequent steps. Before any group project, you must understand your colleagues' expectations for courses and projects, strengths and weaknesses. Students should then know exactly the purpose of their project. The best group has a clear organisational structure to use each group member's talents to achieve their goals. Good and clear communication will help them succeed in their group projects. Ensure the group knows all communication methods, deadlines, feedback opportunities, questions, and other important information. Then, the work with the team is important.

Recent research on online group work, particularly between 2022 and 2024, has continued to evolve, focusing on the effectiveness of digital collaboration tools, educational strategies, and the impact of hybrid learning models. The COVID-19 pandemic significantly accelerated the adoption of online learning, highlighting the potential and challenges of online group work. Studies show that Microsoft Teams, Zoom, and Google Docs are essential tools for facilitating real-time student communication and collaboration (Choukaier, 2024). Effective group work requires carefully designed activities, clear instructions, and continuous feedback from instructors to ensure student participation and fair participation (Donelan & Kear, 2024). While challenges such as communication obstacles and uneven workloads persist, strategies such as role assignment, regular monitoring, and peer review have been found to address these problems. According to Lim et al. (2024), group work's formation, storming, regulation, and performance stages are linked in a constructive

progression, indicating that they are not different from each other but rather linked in a positive progression. Raising awareness of these links is useful to guide a group effectively.

2.3 Elements of Social presence, cognitive presence, and teaching presence

Kilis and Yildirim (2019), have used the Community of Inquiry (CoI) framework, such as the presence of the social, cognitive, and educational environment. The study uses a goal sampling method to collect data from 91 students at the Department of Medical Documentation and the Secretary of the Department of Medical Documentation, an online associate degree program at a well-known public university, for six months. In addition, the data were analysed using descriptive and deductive methods. The results showed that students' social, cognitive, and educational posting behaviours were significantly high and could be significantly improved during treatment.

Garrison et al. (2010) studied the causes and consequences of the CoI. The authors explained that the development of the CoI-based instrument could verify causal relationships, that the assumptions of causal relationships between education and social presence have a significant impact on cognitive presence, and that the assumptions of causal relationships between education presence and the presence predicted by the CoI framework have been assessed. The study also showed the structure of the CoI framework factor. These results pointed to education's vital role in forming and maintaining research communities.

The COVID-19 epidemic quickly changed to online education, focusing on tools and technologies for replicating face-to-face interactions but often neglecting the whole learning experience. According to ElSayad (2023), the important presence of learning positively impacts learning and cognitive presence through the social presence of the extensive research community in the mixed learning context. This finding explains that increasing the presence of teachers and social interactions between peers contribute to encouraging students' motivation, behaviour, and development, thus encouraging them to apply cognitive learning methods. Based on these findings, the study confirms that the presence of social and learning is an important practice that should be considered in the emergency mixed learning environment to support the cognitive presence of students and to develop their learning perceptions. In line with the case study conducted with postgraduate students, the focus is on the social presence, the presence of teaching, the presence of cognition, and overall educational experiences. The study advocates the inclusion of “self-representation” in the CoI framework, emphasising the importance of understanding the relationship between the self and the virtual self-representation at different levels (body, emotion, identity), especially in terms of effectiveness factors and digital expression (Carrol et al., 2024).

These studies demonstrate the ongoing relevance and applicability of the CoI framework in modern educational environments and emphasise the need for a balanced and integrated presence to promote an effective online learning environment.

Conceptual Framework

Fig. 1 shows the conceptual framework of the study. The study explores learners' perceptions about group work performance through online mode. Regardless of face-to-face or online modes, collaborative tasks can promote critical thinking and long-term information retention among students (Rahmat, 2020). In this study on online modes, the relationship between the presence of teachers and cognitive and social were investigated. According to Aderibigbe (2021), online group tasks should be designed to enable learners to experience the presence of teachers, cognitive and social.

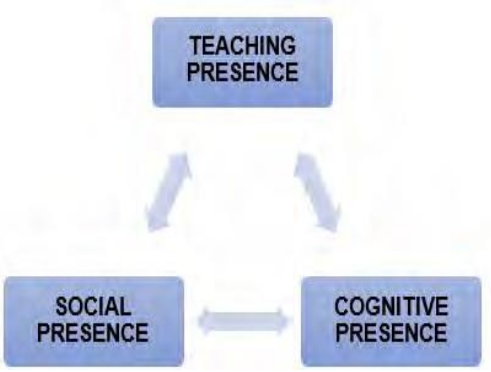


Fig. 1 *Conceptual Framework of the Study*

3.0 METHODOLOGY

This quantitative study is done to explore motivation factors for learning among undergraduate students at Universiti Teknologi MARA Cawangan Johor. A purposive sample of 296 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted in Aderibigbe (2021) to reveal the variables in Table 1 below. The survey has four (4) sections. Section A has items on the demographic profile. Section B has 8 items on cognitive presence. Section C has 8 items on social presence. Section D has 8 items on teaching presence.

Table 1. Distribution of Items in the Survey

Section	Elements	No. of Items
B	Cognitive Presence	8
C	Social Presence	8
D	Teaching Presence	8
		24

Table 2. Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.842	24

Source: Author's calculation using SPSS 25

Table 2 indicates the reliability of the survey. The analysis records a Cronbach Alpha of 0.842, thus revealing good reliability of the instrument chosen or used. Further analysis using SPSS 25 is done to present the findings to answer the research questions for this research.

4.0 FINDINGS

4.1 Findings for Demographic Profile

There are three items for demographic: gender, education background and faculty. The results are as follows.

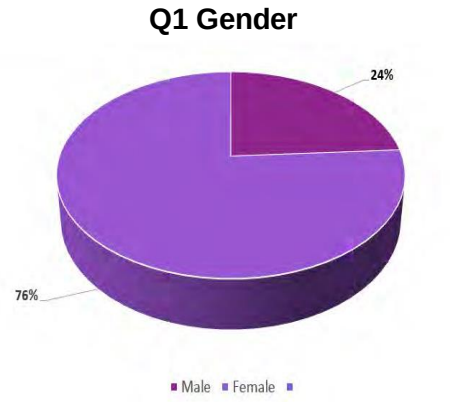


Fig. 2 *Gender (%)*

Fig. 2 shows the gender percentage. The pie chart reports that 24% of males and 76% of females were among the respondents among students from Universiti Teknologi MARA Cawangan Johor who were involved in this study.

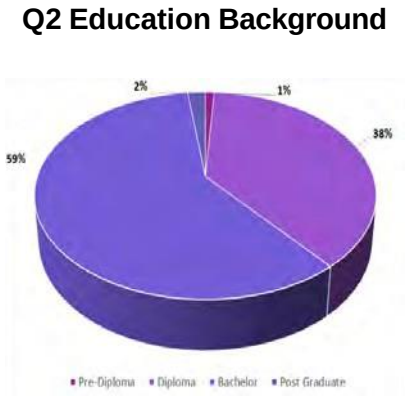


Fig. 3 *Education Background (%)*

Fig. 3 indicates the percentage for educational backgrounds of the respondents. The pie chart shows that 1% of pre-diploma, 38% of diploma, 59% of bachelor, and 2% of postgraduate students were involved as respondents in this research.

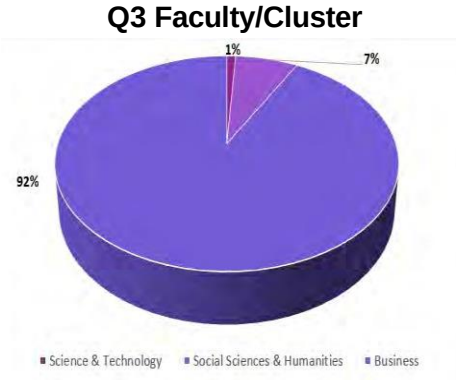


Fig. 4 *Faculty (%)*

Fig. 4 presents the respondents' faculty in percentage. The results recorded that 1% of the respondents were in science and technology, 7% were in social sciences and humanities,

and 92% were in business. All the respondents come from the same university, Universiti Teknologi MARA Cawangan Johor.

4.2 Findings for Teaching Presence

This section presents the recorded data to answer research question 1: How do learners perceive teaching presence in mixed-mode group work?

SECTION D (Teaching Presence)

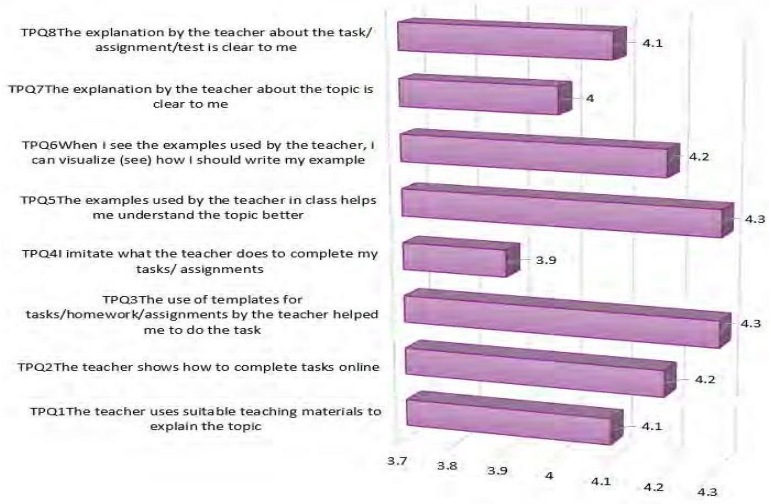


Fig. 5 *Mean for Teaching Presence*

The mean for teaching presence is presented in Fig. 5. The results indicate that question 5, related to the examples used by the lecturer in class, helps the students understand the topic better and has the highest mean, with a total of 4.3. As for the lowest mean, question 4 is related to imitating what the lecturer does to complete the tasks or assignments, with a total mean of 3.9.

4.3 Findings for Cognitive Presence

This section presents the data to answer research question 2: How do learners perceive cognitive presence in mixed-mode group work?

SECTION B (Cognitive Presence)

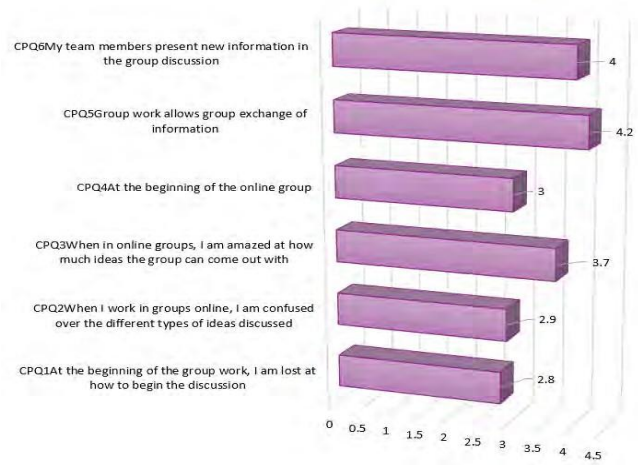


Fig. 6 *Mean for Cognitive Presence*

Fig. 6 shows the average score for cognitive presence in group work tasks in online learning. The highest average score is 4.3, and the CPQ7Group work allows team members to connect their ideas, while the CPQ5Group work is 4.2, allowing group information exchange. At the beginning of group work, the lowest average was 2.8, and CPQ1I lost how to start discussions because only a few students could not focus on discussions. Although it is online learning, students can still work well in groups by sharing new information and ideas, as shown by the average 4.0 score for CPQ6My team members who present new information in group discussions and CPQ6My team members who present new information in group discussions.

4.4 Findings for Social Presence

This section presents the data to answer research question 3: How do learners perceive social presence in mixed-mode group work?

SECTION C (Social presence)

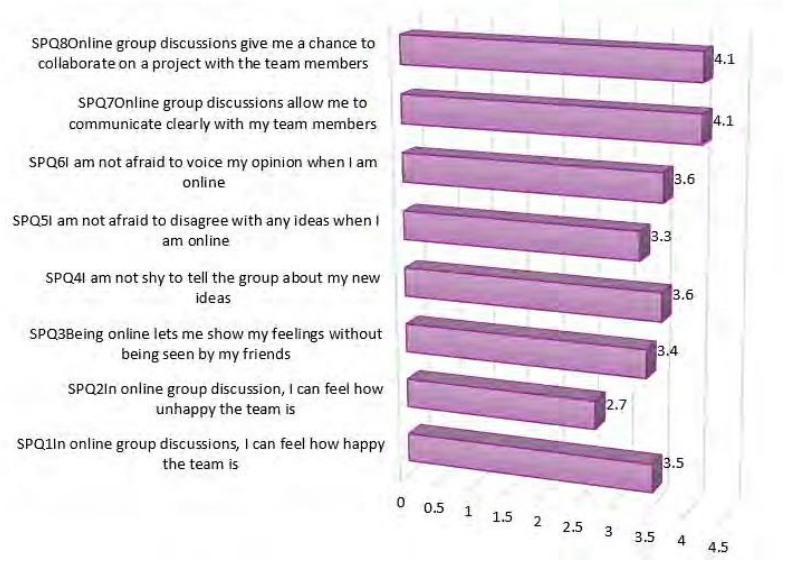


Fig. 7 *Mean for Social Presence*

Fig. 7 shows the mean for social presence. The highest means are SPQ7 and SPQ8, which are 4.1. SPQ7 is an online group discussion that allows me to communicate clearly with my team members and SPQ8 is an online group discussion that gives me a chance to collaborate on a project with the team members. The lowest value of the mean is SPQ2, which is 2.7. SPQ2 is in an online group discussion, and I can feel how unhappy the team is. The rest recorded the value of means is between 3.3 to 3.6. From these results, it was recorded that the students agreed that the online group discussions allowed them to communicate clearly with ~~the~~ team members and gave them a chance to collaborate on a project with the team members. They disagree that they can feel unhappy with the team.

4.5 Findings for Relationship

This section presents the data to answer research question 4: Is there a relationship between teaching presence and cognitive and social presence?

To determine if there is a significant association in the mean scores between metacognitive, effort regulation, cognitive, social, and affective strategies, data is analysed using SPSS for correlations. Results are presented separately in tables 3, 4, 5, and 6 below.

Table 3. Correlation between Teaching and Cognitive Presence

Correlations

		TOTALTEACHING	TOTALCOGNITIVE
TOTALTEACHING	Pearson Correlation	1	.328**
	Sig. (2-tailed)		.000
	N	296	296
TOTALCOGNITIVE	Pearson Correlation	.328**	1
	Sig. (2-tailed)	.000	
	N	296	296

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author's calculation using SPSS 25

Table 3 shows that there is an association between teaching and cognitive presence. Correlation analysis indicates that there is a moderately significant association between teaching and cognitive presence (r=0.328**) and (p=0.000). According to Jackson (2015), the coefficient is significant at 0.05, and a positive correlation is measured on a 0.1 to 1.0 scale. A weak positive correlation would be in the range of 0.1 to 0.3, a moderate positive correlation from 0.3 to 0.5, and a solid positive correlation from 0.5 to 1.0. This means that there is also a moderate positive relationship between teaching and cognitive presence.

Table 4. Correlation between Teaching and Social Presence

Correlations

		TOTALTEACHING	TOTALSOCIAL
TOTALTEACHING	Pearson Correlation	1	.441**
	Sig. (2-tailed)		.000
	N	296	296
TOTALSOCIAL	Pearson Correlation	.441**	1
	Sig. (2-tailed)	.000	
	N	296	296

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author's calculation using SPSS 25

Table 4 shows an association between teaching and social presence. Correlation analysis shows a moderately significant association (r=0.441**) and (p=0.000). According to Jackson (2015), a moderate positive relationship exists between teaching and social presence.

Table 5. Correlation between Cognitive and Social Presence

Correlations

		TOTALCOGNITIVE	TOTALSOCIAL
TOTALCOGNITIVE	Pearson Correlation	1	.276**
	Sig. (2-tailed)		.000
	N	296	296
TOTALSOCIAL	Pearson Correlation	.276**	1
	Sig. (2-tailed)	.000	
	N	296	296

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author's calculation using SPSS 25

Table 5 shows an association between cognitive and social presence. Correlation analysis shows a low significant association between cognitive and social presence (r=0.276**) and (p=0.000). According to Jackson (2015), cognitive and social presence have a weak positive relationship.

5.0 CONCLUSION

A general overview of the results examined the relationships between the teaching presence and the cognitive and social presence in mixed-mode group work among learners. It has been found that the group work of learners in blended learning positively impacts teaching, cognitive, and social presence. Meanwhile, students' cognitive and social presence in group work is weak in mixed-mode teaching. Learners' perception of cognitive presence can be important in online group discussions. The participation of teachers is necessary to promote cognitive presence to achieve higher learning results. The study was supported by Beckmann and Weber, 2015; Olesova et al. 2022; and Nungu et al. 2023.

The results indicate that learners perceive that the teacher's efforts to create a greater sense of teaching presence are not clear instructions, but rather the need for guidance and understanding of the subject rather than seeing and hearing the teacher in mixed group work. Similarly, Wang and Liu (2019) found that too much direct instruction can hinder the engagement and development of students' knowledge. The study also showed that the higher the social presence of learners, the more beneficial it is, and the better it can be to engage in collaboration work during online learning. People who do not enjoy social interaction and who are socially anxious will feel less social. The study results are consistent with Nungu et al. (2023), whose thesis emphasises that learners who collaborate and co-create knowledge through online small-group activities are considered important students who achieve success in learning. Students cannot complete the integration and resolution phases of cognitive presence by creating only discussion forum assignments. It is necessary to implement a continuous process of critical thinking and encourage participants to link ideas and concepts to the realities of the real world. This conclusion coincides with previous research showing that teaching presence plays an important role in the development of discourse to cultivate cognitive presence (Garrison, 2017).

6.0 SUGGESTION FOR FUTURE RESEARCH

Group work is an important learning incentive. Furthermore, this study showed that students perceived group work as beneficial, in accordance with previous studies on the experiences of students working in groups regardless of the course type, whether in a traditional classroom or in an online environment (Hammar, 2014; Riaz et al., 2022). Furthermore, the interactions of learners depend on the degrees and methods of facilitators of discussions by teachers. Therefore, future research may also be needed to study factors affecting students, faculty, and teacher experiences in mixed learning groups. This will influence their participation in mixed learning courses by different instructors and their teaching, as well as their social and cognitive presence. In addition, the study suggests that several datasets and methods are used to measure empirical evidence of teacher, social and cognitive presence, and student satisfaction with learning outcomes.

CO-AUTHOR CONTRIBUTION

The authors affirmed that there is no conflict of interest in this article. Each author contributed by dividing it into sections using colour coding. The contributions of each author were as follows: Author 1 conceived and designed the study and conducted an extensive literature review. Author 2 conducted refinement of the manuscript. Author 3 interpreting the study's findings. Author 4 reviewed the manuscript and played a significant role in drafting

the initial manuscript. Author 5 conducted data collection and analysis. Author 6 actively participated in manuscript revisions. All authors critically reviewed and approved the final version of the manuscript, demonstrating their collective commitment to the accuracy and integrity of the research presented.

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