

## Peer-Led or Faculty-Led? Investigating the Best Approach to Journal Clubs for Postgraduation Trainees, A Quasi Experimental Study.

F. Amin<sup>1</sup>, T.Kaukab<sup>2</sup>, H.Khan<sup>3</sup>

<sup>123</sup> University Medical Dental College



### Abstract:

#### Introduction:

Journal clubs are essential in postgraduate education. They promote critical appraisal and understanding of research articles. Faculty-led journal clubs offer structured guidance, while peer-led models emphasize collaboration and engagement. Understanding which approach better supports trainees' learning can inform educational strategies in postgraduate training programs.

#### Objective:

To compare the perceived effectiveness of peer-led versus faculty-led journal clubs in enhancing postgraduate trainees' understanding of research articles.

#### Methodology:

A quasi-experimental study was conducted with 60 postgraduate trainees randomly assigned to peer-led (n=30) or faculty-led (n=30) journal clubs. Identical articles were discussed in standardized sessions. A validated post-session questionnaire using a 5-point Likert scale assessed trainees' perceptions of clarity of article content, confidence in interpreting results, and ability to identify key findings. Data were analyzed using descriptive statistics and independent samples t-tests.

#### Results:

The faculty-led group reported higher clarity of content ( $4.4 \pm 0.5$  vs.  $3.8 \pm 0.6$ ,  $p=0.02$ ) and confidence in interpreting results ( $4.3 \pm 0.5$  vs.  $3.9 \pm 0.7$ ,  $p=0.04$ ). Both groups scored similarly on identifying key findings ( $4.1 \pm 0.6$  vs.  $3.9 \pm 0.6$ ,  $p=0.15$ ). Overall, both groups provided positive feedback, with faculty-led sessions praised for structure and peer-led sessions valued for promoting collaboration and engagement.

#### Conclusion:

Both peer-led and faculty-led journal clubs effectively enhance trainees' understanding of research articles, with faculty-led sessions excelling in clarity and confidence. A hybrid model combining the strengths of both approaches may maximize learning outcomes. Future research should explore objective measures of learning and test these models in diverse educational settings.

**Keywords:** Journal clubs, Faculty-led, Peer-led, Postgraduate education, Critical appraisal, research

### Introduction:

Journal clubs are the heartbeat of evidence-based education in transforming traditional learning into dynamic discussions, but which approach sharpens the scalpel of knowledge better—faculty guidance or peer collaboration, remains a debate. A journal club can be defined as a group of individuals who meet regularly to

discuss articles in current medical literature (1,2). Journal clubs have long been a cornerstone of medical education, offering a structured platform for healthcare professionals to critically appraise research articles, stay updated with current evidence, and apply findings to clinical practice. Originating in the late 19th century, the concept was popularized by Sir William Osler, who recognized the value of collaborative discussion in fostering critical thinking and lifelong learning among medical trainees (3).

In contemporary medical education, journal clubs serve multiple roles. They enhance participants' ability to evaluate the validity, reliability, and applicability of research, a vital skill in evidence-based medicine (4,5). By engaging in discussions about recent advancements, participants bridge the gap between theoretical knowledge and clinical application. Additionally, journal clubs promote a culture of inquiry and encourage professional development through collaborative learning (6). Different factors have been associated with effective journal club practice including clear learning objectives, a designated club leader, compulsory attendance of trainee with regular attendance of faculty members,

### Corresponding Author:

**Name:** Dr. Fatima Amin

**Affiliation:** University Medical Dental College

**Email:** Fatimaminn@gmail.com

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formal teaching of critical appraisal skills, high value given by residency program director, small residents group <12, incorporation of adult learning principles and the use of structured checklist for article under review and provision of free food. Common reasons for discontinuing journal clubs appear to be lack of time, inadequate preparation, lack of goals, interests or participation (7).

For postgraduate trainees, particularly in specialized fields like oral surgery, journal clubs are indispensable. They provide an opportunity to analyze high-quality research that directly impacts surgical techniques, patient outcomes, and the evolution of clinical guidelines (8). The structured review and critique of literature help trainees improve their critical appraisal skills and stay abreast of cutting-edge advancements in their field (9).

The format of journal clubs can vary widely, with two common approaches being faculty-led and peer-led sessions. Faculty-led journal clubs leverage the expertise of senior educators, offering a guided and authoritative discussion of complex topics (10,11). On the other hand, peer-led sessions empower trainees to take ownership of their learning, promoting autonomy, collaboration, and peer-to-peer teaching (12,13).

Given the increasing emphasis on learner-centered approaches in medical education, it is essential to evaluate the relative effectiveness of these formats in enhancing learning outcomes, promoting engagement, and developing critical appraisal skills among FCPS trainees. The results of such an evaluation could inform best practices for designing journal clubs that maximize educational impact and professional growth (14).

Journal clubs are an essential for postgraduate medical education, providing a platform to enhance critical appraisal skills, encourage evidence-based practice, and promote professional collaboration (15,16). For FCPS trainee's clinical decisions often depend on interpreting complex and evolving research, journal clubs are particularly vital. However, the effectiveness of different journal club formats in achieving these educational objectives remains underexplored. Faculty-led and peer-led journal clubs represent two contrasting approaches to this activity. Faculty-led sessions leverage the expertise and guidance of seasoned mentors, ensuring structured and clinically relevant discussions, while peer-led sessions encourage autonomy, collaboration, and the development of leadership and teaching skills among trainees. Although both formats have demonstrated educational value, little is known about their relative effectiveness, especially in the context of postgraduate dental education.

The primary objective is to evaluate the perceived effectiveness of peer-led versus faculty-led journal clubs

in enhancing postgraduate trainees' understanding of research articles.

### **Methodology:**

A quasi-experimental study design was conducted to evaluate the perceived effectiveness of peer-led versus faculty-led journal clubs in enhancing postgraduate trainees' understanding of research articles. The research took place at a University Medical and Dental College, Faisalabad (from June to November 2024), where postgraduate trainees of FCPS program (specialties of Oral Maxillofacial Surgery, Prosthodontics, Dermatology, ENT, Ophthalmology, Gynecology) voluntarily participated in the journal club sessions. The study aimed to assess how different types of facilitation—peer-led versus faculty-led—affected trainees' ability to critically appraise research articles and their confidence in interpreting results. Participants were randomly assigned to one of two groups: a peer-led group or a faculty-led group.

In total, 60 trainees were enrolled in both groups to ensure balanced representation and reliable results. Random assignment of participants was performed using simple randomization through a computer-generated random number sequence. This approach ensured that each participant had an equal chance of being assigned to either the peer-led or the faculty-led group, thereby minimizing selection bias.

The main objective of these journal clubs was to enhance the critical appraisal skills of the residents. The journal club followed a structured pattern where the leader, in collaboration with the supervisor, selected a paper for presentation. The leader began by displaying the title and authors on the first slide, prompting the audience to brainstorm the article's topic. Next, the objectives of the paper were shown, and the audience was invited to propose potential methodologies used to achieve these objectives. The leader then revealed the actual methodology, and the audience discussed their agreement or disagreement with it. Following this, the audience analyzed the charts and data provided in the paper, engaging in a discussion. The leader then presented the conclusion, and the group assessed whether the paper's topic, objectives, methodology, and conclusion were aligned.

Inclusion criteria for the study were FCPS postgraduate trainees who attended all journal club sessions with 100% attendance during the study period of six months. Trainees from all years currently in or above the second year of their program were included, as they had the necessary background knowledge to engage with the content. Any trainee whose attendance was less than 100% was excluded from the final analysis, as inconsistent attendance could affect the reliability of their perceptions and responses.

To maintain uniformity across the sessions, both groups reviewed identical articles, and each session adhered to a standardized format. The sessions included an introduction to the article, a detailed article critique, and a group discussion that encouraged interactive learning. A significant focus was placed on ensuring that the sessions followed a consistent structure, with all articles critiqued based on predefined criteria. Peer leaders underwent a structured training program designed to equip them with the necessary skills for facilitating the discussion. The training covered various facilitation techniques, including how to guide the discussion, encourage participation, and manage group dynamics. The training also included guidelines on how to critically assess articles and provide constructive feedback. This preparation aimed to reduce variability in session quality and ensure that peer leaders were capable of effectively guiding the journal club discussions. Faculty facilitators, with more experience in academic settings, were also provided with a refresher on best practices in facilitating group discussions to maintain consistency across both groups.

Prior to full implementation, the post-session questionnaire was piloted with a small group (N=10) of postgraduate trainees to ensure clarity and effectiveness. Feedback from the pilot was used to refine the questionnaire, ensuring that the questions were relevant, easily understood, and accurately measured the trainees' perceptions of content clarity, confidence in interpreting results, and ability to identify key findings. The results from the pilot study were not included in the final study.

The validated questionnaire was administered through Google forms immediately after each journal club session, and all responses were anonymous to ensure confidentiality. The Likert-scale format of the questionnaire enabled trainees to rate various aspects of the session, including the clarity of the content, their confidence in interpreting the research results, and their ability to identify key findings and limitations. The data collected through the questionnaires were then analyzed using descriptive statistics to summarize participant responses. Independent samples t-tests were employed to compare scores between the peer-led and faculty-led groups. A p-value of less than 0.05 was considered statistically significant. Ethical approval for the study was obtained from the institutional review board of the University Medical and Dental College Faisalabad, and informed consent was collected from all participants prior to their inclusion in the study. The study adhered to ethical guidelines and ensured that participants' privacy and confidentiality were maintained throughout the research process.

## **Results:**

A total of 60 postgraduate trainees participated in the study, with 30 trainees assigned to the peer-led group and 30 to the faculty-led group. The mean age of participants was  $28.4 \pm 2.6$  years, with a balanced distribution of male and female trainees. Both groups completed identical journal club sessions, and the post-session questionnaire response rate was 100%.

The mean overall perceived understanding score was slightly higher in the faculty-led group ( $4.2 \pm 0.6$ ) compared to the peer-led group ( $3.9 \pm 0.7$ ), though this difference was not statistically significant ( $p = 0.08$ ). When analyzing individual questionnaire items, trainees in the faculty-led group reported greater clarity in article content ( $4.4 \pm 0.5$  vs.  $3.8 \pm 0.6$ ,  $p = 0.02$ ) and higher confidence in interpreting study results ( $4.3 \pm 0.5$  vs.  $3.9 \pm 0.7$ ,  $p = 0.04$ ). However, there was no significant difference in the ability to identify key findings and limitations ( $4.1 \pm 0.6$  vs.  $3.9 \pm 0.6$ ,  $p = 0.15$ ).

Participant feedback revealed that both formats were engaging and valuable, but those in the peer-led group emphasized the collaborative and interactive nature of their sessions, while those in the faculty-led group highlighted the structured and authoritative guidance provided. Overall, both groups reported positive perceptions of the journal club sessions, suggesting that both peer-led and faculty-led approaches can effectively enhance trainees' understanding of research articles, with subtle differences in perceived benefits.

## **Discussion:**

This study explored the perceived effectiveness of peer-led versus faculty-led journal clubs in enhancing postgraduate trainees' understanding of research articles. The findings suggest that while both approaches are effective, faculty-led sessions were associated with slightly higher scores for clarity of content and confidence in interpreting results.

However, no significant difference was observed in the participants' ability to identify key findings and limitations. This suggests that both peer-led and faculty-led journal club approaches can be equally effective in promoting this critical skill, supporting previous evidence that well-structured peer-led and faculty-led journal clubs can deliver equivalent educational benefits in certain domains. These results align with previous research indicating that faculty-led journal clubs' benefit from structured guidance and the expertise of experienced facilitators, which may contribute to better understanding and confidence in critical appraisal tasks (17).

The slightly lower scores in the peer-led group may reflect challenges associated with novice facilitators, such as limited experience in guiding discussions and addressing

complex research concepts. Nonetheless, peer-led sessions were valued for their interactive and collaborative atmosphere, consistent with findings from studies emphasizing the role of peer learning in fostering critical thinking and mutual support. This underscores the potential for peer-led journal clubs to complement faculty-led sessions, particularly in settings where faculty resources are limited (18).

While faculty-led sessions appear to provide an edge in clarity and confidence, it is important to acknowledge the broader educational benefits of peer-led models, such as fostering deeper engagement and a sense of ownership among participants. (19)

Institutions may consider adopting a hybrid approach that combines the strengths of both models to maximize the benefits of journal clubs for postgraduate trainees (20). While the study provides valuable insights, several limitations should be considered. First, the sample size of 60 participants, though representative of the postgraduate trainees at the institution, is relatively small and may limit the generalizability of the findings. Additionally, the study was conducted within a single institution, which may not account for variations in educational context, cultural factors, or training environments that could influence the outcomes. Further research with larger and more diverse sample sizes is needed to validate these results and explore the broader applicability of faculty-led and peer-led journal clubs across different institutions and regions.

Another limitation is the absence of long-term follow-up to assess the sustained impact of journal club participation on clinical practice and decision-making. Future studies could explore how participation in different types of journal clubs influences the ability of trainees to apply evidence-based practices in real-world clinical settings. Additionally, as digital platforms become increasingly integral to medical education, future research could investigate the effectiveness of virtual versus in-person journal clubs, particularly in terms of engagement, learning outcomes, and trainee satisfaction.

### Conclusion:

In conclusion, this study provides valuable evidence on the comparative effectiveness of faculty-led and peer-led journal clubs in postgraduate medical education. Both formats have their unique strengths and contribute to the development of essential skills in evidence-based practice, critical thinking, and professional communication. Further investigation into hybrid models and the long-term effects of journal club participation on clinical practice is warranted to optimize the impact of this educational tool. It is worth mentioning that the success of an effective journal club relies on several factors, with the most important being the leader's preparation, the ability to engage the audience, and having clear objectives.

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Dr. Fatima Amin: Conception and Design of work, drafting and critical evaluation for intellectual context.

Dr. Tazmeen Kaukab: Analysis of data

Dr. Humna Khan: Final drafting



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