

## Tutoring Journal Club as an Imperative Scholastic Maneuver: A Local Probe

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### Abstract

#### Introduction

While journal clubs are a time-honored method of reviewing and discussing the scientific literature in medicine, hitherto there is no universally accepted definition of that. Purpose of the present study involved a comparison between instructive values of meetings that are directed by an authentic faculty member in comparison with conferences that are usually coached by chief residents.

#### Methods

Forty-two psychiatric residents (from two psychiatric training centers) have been quizzed about the intentions, principles or importance of journal club. Both of said colleges had comparable settings, conferences and alike standard psychiatric journals. In one of them the papers were chosen usually by chief resident, who was as well coordinator of the conferences, while in the other one, articles were chosen habitually by a faculty member, as director and coordinator of sessions. After at least one year of attending in associated sessions, all the participants were asked to answer incognito to a Survey Questionnaire, including 23 questions, involved multiple answers, with different Coding Categories. Analysis of data was performed by way of 'Comparison of Proportions'. Quantities in each group, as well, were analyzed in line with percentage of responds to different Coding Categories. Significance was defined as  $P \leq 0.05$ .

#### Results

While all participants replied questionnaires, significant difference was evident between two groups regarding their response to at least twelve questions. Judgment of residents were generally and remarkably different with regard to: 'goals', 'format', 'necessity of attendance', 'quality of participation of faculty', 'educational value of core curriculum of journal club', 'its critical role with regard to research and appraisal of topics', and in conclusion 'as a resource for continuous education'.

#### Conclusion

While journal club formats are educationally diverse and appear to be more effective if they have a leader, disciplined organization of journal club by a skilled faculty member may enhance scientific insight and instructive gratifications of apprentices.

**Keywords:** training programs; journal club; educational curriculums; instructive methods

### Introduction

A journal club (JC) is a group of persons who meet repeatedly to debate critically the clinical applicability of articles in the present medical journals. While the medical journal club is usually a part of the medical didactic system, the medical literature has not detailed the rich history of this significant tradition. The emphasis of journal clubs has ostensibly shifted over the years. What was once a setting in which the world's recent literature was analyzed became a setting for talking over clinical issues raised by the writings and, most

recently, a setup for learning critical reading skills to doctors or other associated authorities [1]. But till now there is no generally accepted definition of JC, even though this scholastic modality has been around for more than a century and has evolved substantively during this time [2]. Initially the main goal of the JC was to help contributors keep up-to-date of the growing body of medical texts. Over time the emphasis of JC has progressed to teaching critical assessment skills and evidence-based medicine, while maintaining the original

objective of helping apprentices and practicing physicians keep up-to-date in the research literature of their field [3]. Currently, improving patients' care, refining reading habits, teaching critical appraisal skills, increasing the use of medical literature in clinical practice and increasing knowledge of clinical epidemiology and biostatistics, are among the main objectives of JCs [4]. On the other hand, while one randomized controlled trial did not find any improvement in critical appraisal skills, six less methodologically rigorous studies found possible improvement in critical appraisal skills [5]. So, while there is huge published literature describing JCs conducted in different surroundings and for different health clients, there appear to be no 'Gold Standard' manners for conducting a JC, or to appraise its efficacy in helping practitioners translate knowledge into practice [6]. Thus, it is an ongoing challenge for clinicians to design and maintain an exciting and instructive JC layout that helps the participants to stay up to date with the scientific and medical writings, and to translate JC activities into evidence-based practice [7, 8, and 9]. Nevertheless, while traditional JC are ubiquitous in medical departments and health care institutes, this informative modality has a deep history in medicine and related health sciences all over the world [10, 11]. On the other hand, the flexibility and intellectual challenge provided by JC have encouraged its usage not only in general medicine and several medical specialties, but besides in dentistry, nursing and other associated health careers [12, 13 and 14]. Over again, it is fascinating and puzzling that with such widespread dissemination of the JC methodology, lack of valid papers with respect to its usefulness in the field of medical education is noticeable [15, 16]. There are many reports of its use as an instructive instrument and stratagem, but almost none about its application for discussing medical education published papers [17]. Additionally, the impact of supervision on JC's outcome is not accurately recognizable, because related studies by Van Derwood *et al.* [18] and Linzer [19] have exposed unpredictable outcomes as regards the effect and quality of supervision on ensuing aftermath of JC. For instance, while Van Derwood had stressed on the role of faculty or a faculty-and-resident team regarding improvement of usefulness of such meetings, Linzer confirmed higher attendance rates in conferences, which were supervised by chief residents. So, purpose of the current study involved a comparison between instructive values of meetings that are directed by an authentic faculty member in competition with conferences that are coached by chief residents.

## Methods:

Forty-two psychiatric residents (from two psychiatric training centers) have been quizzed about the intents, principles or importance of JC. The first group involved 24 psychiatric residents from Iran University of Medical Sciences (IUMS) and the second group comprised 18 psychiatric residents from University of Social

Welfare and Rehabilitation Sciences (USWR). Both of said colleges had somewhat similar courses that could make them comparable regarding the current evaluation. Similar setting, conferences and alike standard psychiatric journals were among the analogous variables, in this regard. In IUMS, papers were chosen usually by chief resident, who was as well coordinator of the conferences, while in USWR, articles were chosen habitually by a faculty member, as director and coordinator of sessions. In general, in both of said academic centers clinical research papers and systematic reviews were among the most preferred selections. Besides, participation in meetings was mandatory in both of them. While conferences in IUMS were performed commonly with supervision of chief resident, in accompany with feeble contribution of some of the faculty members, in USWR it was being directed mainly by an assistant or associate professor, in accompany with constant involvement of other faculty members. In both of them and at the end of every conference, joint discussion and critical review of the discoursed topic was a routine process. It is mentionable here that neither of the aforesaid faculties or residents in none of the said academic centers had passed any opening course for reviewing the aims, principles or meaning of JC. After at least one year of attending in associated sessions, all abovementioned residents were asked to answer incognito to a Survey Questionnaire, including 23 questions, involved multiple answers, with different Coding Categories. This Inquiry form had been used, as well, as Community Medicine (Public Health) Resident Journal Club (CMR-JC) survey in some earlier alike studies [19].

## Statistical analysis:

Participants were compared on baseline characteristics using chi-square tests for categorical variables and t tests for continues variables, in order to measure the homogeneity between the two evaluated groups. While analysis of data was performed by way of 'Comparison of Proportions', quantities in each group had been analyzed in line with percentage of replies to different Coding Categories. Significance was defined as  $P \leq 0.05$ . MedCalc Statistical Software version 15.2 was used as statistical software tool for analysis.

## Results:

At the outset, groups were analogous and demographic characteristics were comparable (Table 1).

All of the said residents responded anonymously to the aforementioned survey questionnaire. Among 23 different queries in CMR-JC, the preferred response to one specific reply was significantly different, in between-group analysis, in twelve of them (Table 2) (Figure 1).

Variables	IUMS (n=24)	USWR (n=18)	X <sup>2</sup>	t	p	95%CI
Nationality/native	100%	100%				
Gender/female	13(54%)	8(44%)	0.62		0.53	-0.208 to 0.402
Gender/male	11(45%)	10(55%)	0.62		0.53	-0.207 to 0.401
Age, y	30.89±2.52	31.44±2.91		0.65	0.51	-2.25 to 1.15
Married residents	16(66%)	13(72%)	0.38		0.69	-0.338 to 0.227

**Table 1:** Demographic Characteristics of Participants.

Queries with meaningful variance	Preferred reply	IUMS (N=24)	USWR (N=18)	Z	P	CI
Q 1-In your opinion what is the most important goal of a journal club(JC)	To keep with current literature	29.16%	66.66%	4.72	0.033	7.08% to 59.72%
Q 2-Which of the above goal/goals is achieved by JC	To keep with current literature	33.33%	72.22%	4.76	0.029	8.36% to 60.55%
Q 3- found attending JC to be of educational value	Agree	20.83%	55.55%	3.99	0.045	5.35 % to 57.33%
Q 4-You found preparing for JC to be of educational value	Agree	20.83%	61.11%	5.47	0.019	10.42% to 62.18%
Q 5-In your opinion JC helped in development of research protocols	Agree	29.16%	66.66%	4.92	0.035	7.18% to 59.72
Q 6-Has your research work/dissertation come out of a JC?	Yes	16.66%	78.22%	13.48	0.0002	31.63% to 77.98%
Q 7-Presentation at JC helped refine your research work?	Agree	12.5%	55.55%	7.019	0.008	14.42% to 64.54%
Q 9-In your opinion JC provides stimulus to further review a topic	Agree	16.66%	77.77%	13.29	0.0003	31.16% to 77.68%
Q 11-Please indicate the most important reason/reasons for your decision to attend JC	To keep with current literature	25%	66.66%	5.68	0.017	11.30% to 63.10%
Q 13-Which of the methods for continuing education do you prefers the most?	Journal club	29.16%	61.11%	4.51	0.047	5.26% to 47.234%
Q 15-In your opinion the current format of JC is satisfactory	Agree	37.5%	78.22%	5.34	0.020	10.39% to 61.62%
Q 16-In your opinion is residency program faculty participation in JC satisfactory?	Agree	12.5%	61.11%	8.85	0.002	19.48% to 68.90%

Table 2: Between-group analysis of preferred replies re different queries.

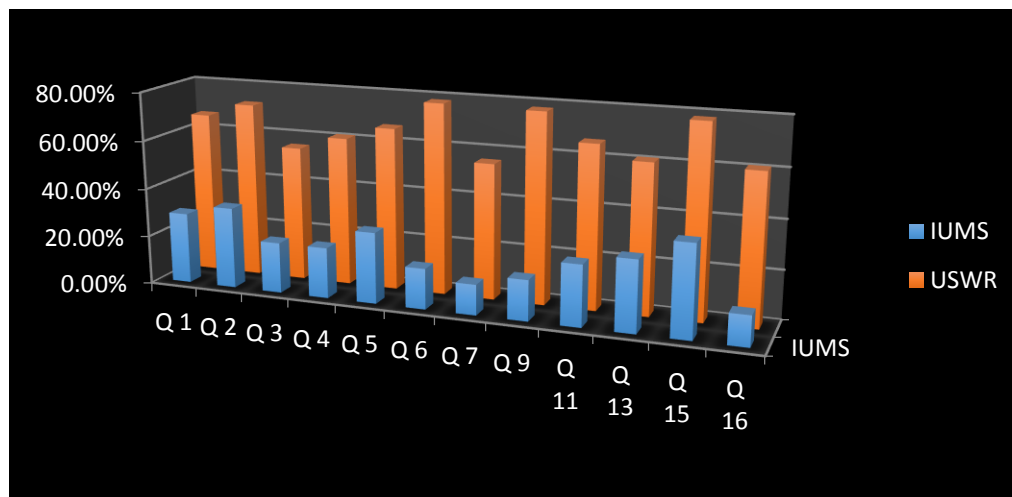


Figure 1: Favored replies of contributors with meaningful difference.

'To keep with current literature' was the most frequent reaction among both groups concerning the first question, which was significantly more prevalent in USWR (66.66% vs. 29.16%,  $X^2=4.72$ ,  $p<0.03$ ). Likewise, concerning the same question, the second most answer in both groups was 'to impact clinical practice' with nearly equal percentage (15-20%). With respect to the second question, 77.22% of the residents of USWR, as opposed to 33.33% of them in IUMS, pointed to 'keep with current literature' ( $X^2=4.76$ ,  $p<0.02$ ). At this juncture, a few of participants (<12% in each group) marked the third coding category (to teach critical reading skills). With respect to the 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, 15<sup>th</sup> and 16<sup>th</sup> query, the primary response of participants was 'agree', which over again was meaningfully different between the groups ( $p< 0.04$ ,  $p<0.01$ ,  $p<0.03$ ,  $p<0.003$ ,  $p<0.0008$ ,  $p<0.02$  and  $p<0.002$  on behalf of USWR, respectively). The second most response as regards the said questions was 'neither agree nor disagree'. Another time, concerning the 6<sup>th</sup> query [Has your research work/dissertation come out of a JC?], 78.22% of the residents in USWR, as opposed to 16.66% of them in IUMS, answered 'Yes' ( $X^2=13.48$ ,  $p<0.0002$ ). With regard to the 11<sup>th</sup> query [indicate the most important

reason/reasons for your decision to attend JC], similarly, 66.66% of participants in USWR, set against 25% of residents of IUMS, pointed 'To keep with current literature' ( $X^2=5.688$ ,  $p<0.017$ ). In this regard, the second most reply, in both groups, was 'to impact clinical practice' (20.83% and 16.66% of participants in USWR and IUMS, respectively). A few also had pointed to other answers like 'mandatory attendance' and 'to improve presentation skills' or 'others'. Moreover, with respect to 13<sup>th</sup> query [Which of the methods for continuing education do you prefer the most?], 61.11% of the residents of USWR, in competition with 29.16% of residents of IUMS, pointed to 'Journal club' ( $X^2=4.518$ ,  $p<0.047$ ). At this point, the second favorite response in both groups involved 'conferences' (25% and 38.88% of participants in USWR and IUMS, respectively). There was no substantial difference between residents of IUMS and USWR regarding the remaining queries.

## Discussion:

JCs have been used as a learning design in academic medicine for over a hundred years. While their beginning is supposed by some to have occurred in Europe in the mid-1880s, Sir William Osler is most often acknowledged as their founder. He began this tradition in North America at McGill University in 1875 for the buying and dissemination of journals to which he could not afford to subscribe as an individual [2]. Fourteen years later at Johns Hopkins University, Osler established The Book and Journal Club which was considered to review the latest medical studies in addition to providing a setting for associates to recommend new works for the hospital library [6]. The JC has progressed a great deal since its inception and is now existent in medical colleges and residency training programs in approximately every field of medicine [15]. But, while JC has been a mainstay in graduate medical education for many years, designing a layout to make it both inspiring and instructive for its participants has demonstrated to be a great challenge and has only recently been addressed in the medical writings [20]. Anyhow, there are several initiatives to increase the scholastic importance and impression of JC, like the usage of team-based and problem-based learning [20]. As said before, though JC are popular and used frequently in academic health centers, there is little published information about JC dedicated to the subject of medical education [21]. This restricted amount of data is astonishing, since the field of medical education has grown hugely in the last years, as shown by the rising number of medical education organizations and academic venues, large global number of master in health professions education programs, and the variety of related research papers and scientific journals [22]. So, there is a need to properly explore the use of JC in medical education settings, to promote the use of didactic evidence by clinicians and basic science educators [23]. On the other hand, while there are plans for organizing and maintaining a JC, one of the consistent recommendations is that these scholastic events need specific objectives and a designated leader or arranger [6]. So, it is proposed that a nonstop professional development action in the form of a periodic face-to-face JC can be preserved in the long-term by means of evidence-based schemes [24, 25]. Back to our discussion, the main aim of the present study included evaluation of the role of mentorship on understanding of intentions, values and meaning of JC. As said by outcomes, skillful tutoring may guarantee better impact on such objectives. While such an end-result is consonant with the findings of Van Derwood *et al.* [18] and Heiligman and Wollitzer (1987) [26], it is to some degree in contrast with Linzer's proposal [1]. Our finding shows that scientific information demands realistic insight, proficiency and passion, as well, to be dynamic enough. In a survey of family practice JC, Van Derwood *et al.* [18] had found that presence rates were highest in conferences moderated by the faculty or a faculty-and-resident team, as compared with meetings moderated by residents alone. Also there was a significant association between the attendance at JCs by the faculty and residents and the program

instructor's perception of its learning significance [27]. Heiligman and Wollitzer [26] also had defined success in JCs by the level of instructive skill. In this regard, associated factors involved regular attendance of a nominated leader, besides mandatory presence of residents. On the contrary, Linzer confirmed higher attending rates in a JC led by a chief resident [28]. In this regard, Linzer and colleagues compared two plans for coaching critical reading skills to internal medicine residents; one conference was led by an internist faculty member, and the other by a chief resident with invited subspecialists. According to the findings, the faculty-led team reported analysis of fewer articles, although there was a more complete evaluation of the subject [29]. Also in another study, a resident-run model of JC was developed based on Adult Learning Theory. A 30-question survey, also, was generated to evaluate residents' outlooks and agreement with the new model. In line with the findings, all participants preferred the new model in comparison with the old model. Residents reported that the new model had increased their medical knowledge and they were able to apply the approaches learned in JC to genuine patients [30]. On the other hand, in a national survey of emergency medicine residency programs, Jouriles *et al.* reported that many of training programs did not have learning goals for their JCs [31]. Also, resident's underestimation of himself or herself, which could prevent proper or mutual participation during the meetings, should be addressed carefully by the tutor, because it may possibly cause adverse outcomes with reference to ultimate goals of the program. Inspiration of suitable assertiveness and exchange of data with other associates, as well, can be viewed as one of the useful aspects of JC. Small sample size and limitation of study to only two colleges were among the main weaknesses of this survey. No doubt, outcomes of this study demand further confirmation by more methodical and inclusive studies.

## Conclusion:

While journal club formats are educationally diverse and appear to be more effective if they have a leader, disciplined organization of journal club by a skilled faculty member may enhance scientific insight and instructive gratifications of apprentices.

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