

*Full Length Research*

# **Journal Club: A comparison between two different styles of educational management**

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**Journal club's program has crucial role in medical teaching. Purpose of the present study was to compare the impact of different controlling method of journal club on perspectives of two distinct groups of psychiatric residents. forty two psychiatric residents from two community psychiatric training centers have been asked in this regard. Conferences of journal club in the first group (n=24) were usually presented under the observation of chief residents, while the second group (n=18) was being managed mainly by a qualified member of the linked faculty. After at least one year of attending in correlated sessions of journal club, all of the aforesaid residents were asked to reply incognito to a Survey Questionnaire, including 23 queries, in the company of a series of replies, in the frame of different Coding Categories. All of the residents accomplished the questionnaires. Significant variance was palpable among these two groups of contributors regarding their response to at least twelve questions. Judgment of residents were generally and remarkably divergent as regards : '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 finally 'as a resource for continuous education'. Systematic management of journal club by proficient and enthusiastic faculty associate possibly will generate more useful intuition with respect to such significant scholastic program, and instructive gratification may be greater in clubs moderated by the faculty.**

**Key word:** Residency, journal club, educational program.

## **INTRODUCTION**

There has been increased interest over the past decade in using evidence-based medicine (EBM) as a basis for clinical decision making. Introduced in 1992 by the McMaster University-based Evidence-Based Medicine Working Group, EBM has been defined as "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Kuhn et al. 2005). Current best evidence is disseminated via original contributions to the biomedical literature. However, the medical literature has expanded greatly over time. Medline, a biomedical database, indexes over 5000 biomedical journals and contains more than 15 million records (Bethesda, 2006). With this abundance of new medical information, keeping up with the literature and properly utilizing EBM techniques are difficult tasks. A journal club in which a published study is reviewed and critiqued for others can be used to help

keep abreast of the literature. A properly designed journal club can also be a useful educational tool to teach and reinforce literature evaluation skills. Over the last 10 years, a number of publications have talked about the goals, setting, and teaching methods of residential journal clubs and analyzed the related outcomes (Greenhalgh and Weatherall, 1997; Watts, 1990). Although numerous articles discuss how journal clubs can be used to evaluate medical literature, only a few have examined what physicians are actually doing (Van Derwood et al., 1991). Initially, journal club was serving practitioners to pursue only scientific progress (Linzer, 1987; Heiligman and Wollitzer, 1987) but more recently they have been used as a vehicle to teach 'critical appraisal skills', 'research design', 'medical statistics', 'clinical decision theory', and 'clinical epidemiology' (Inui, 1981). Although most training programs support journal club, they are not

equally successful in meeting their educational goals, or preserving resident's interest. In contrast, common reasons for discontinuing journal club appear to be '*lack of time*', '*inadequate preparation*', and '*lack of goals, interest, or sufficient participation*' (Alguire, 1998; Sidorov, 1995). So, Sidorov had defined successful journal clubs as those with adequate longevity (at least 2 years) and high levels of resident participation (at least 50% attendance) (Lee et al., 2005). Besides, journal club may prove to be an excellent tool for the assessment of competencies like practice-base learning, which may be difficult to assess by other means (Saima and Muhammad, 2006). In this regard, formal teaching of critical appraisal skills, regular attendance by faculty members, smaller size of participants (12 or less residents), use of a structured checklist and having a designated club leader, are among the important variables (Deenadayalan et al., 2008). Regular and anticipated meetings, mandatory attendance, clear long- and short-term purpose, appropriate meeting timing and incentives, a trained journal club leader to choose papers and lead discussion, circulating papers prior to the meeting, using the internet for wider dissemination and data storage, using established critical appraisal processes and summarizing journal club findings have been declared as characteristics of successful journal clubs (Linzer et al., 1987). The effect of supervision on journal club's outcome is not precisely obvious, but educational satisfaction may perhaps be higher in clubs supervised by the faculty. Associated studies by Van Derwood et al. (1991) and Linzer (Moberg-Wolff and Kosasih, 1995) hitherto have resulted in inconsistent results with respect to the vital influence of quality of supervision on eventual outcome of journal clubs. For instance, while Van Derwood had put importance on faculty or a faculty-and-resident team with respect to enhancement of efficacy, Linzer demonstrated higher attendance rates in journal clubs supervised by chief residents. The objective of the present study was to compare the influence of moderating journal club by faculty member vs. chief resident, on educational standpoints of two groups of residents that were training in two different academic training centers.

## METHODS

Forty two psychiatric residents from two different psychiatric training centers in the capital city have been questioned regarding the goals, values or importance (scientific or clinical) of journal club curriculums. The first sample included 24 psychiatric residents from one of the main state universities (IUMS) and the second sample included 18 psychiatric residents from a relatively new public university (USWR). Each group involved different ranks of residents from first year, who were at the closing stages of their educational training and had participated

in all of the first year's journal clubs, second year and third year, with around one third of each level in each group. Both of the aforementioned academies had comparatively similar core curriculums and admission standards that could make them comparable regarding the present assessment. In both of them bi-Weekly journal club (one article in approximately one hour during the workday), as one of the scholastic programs in accompany with other academic curriculums, was being performed. Standard similar psychiatric journals were among the main theoretical supplies for both of them. In the first group (IUMS), articles were selected individually by a faculty member, who was as well its coordinator, while in the second group (USWR) they were selected usually during joint sessions, involving a faculty member, as director and coordinator, and the related chief resident. Generally In both of the abovementioned centers clinical research papers and systematic reviews were the most favorite choices. But nevertheless the two groups were not exposed exactly to the same topics or journal articles for review. Participation of all of the residents in the journal club sessions were mandatory in both of the above centers, which were carried out usually every other week in the mornings with relatively the same number of sessions, and faculty members also were encouraged in both of them to attend the sessions enthusiastically. The general settings were comparable between the forementioned groups. The sessions of journal club in IUMS were usually performed under the guidance of the chief resident, who was usually among the third year residents and sometimes in accompany with feeble contribution of some of the faculty members; while in the USWR it was being directed mainly by an assistant professor of the associated faculty, in accompany with constant involvement of a few of other faculty members. At the end of every session, shared talk and critical review of the discussed issue was expectable in both of them. It is mentionable here that neither of the abovementioned faculties or residents in none of the aforementioned centers had experienced any preparatory course for acquaintanceship with the goals, values or importance (scientific or clinical) of journal club curriculums. After at least one year of attendance in correlated sessions, and during a distinct week period, all of the aforesaid residents were asked to reply anonymously to a Survey Questionnaire; including 23 questions in the company of a series of answers in the frame of different Coding Categories. This Questionnaire had been used as Community Medicine (Public Health) Resident Journal Club (CMR-JC) survey in some previous similar studies (12).

## Statistical analysis

Residents were compared on baseline characteristics using chi-square tests for categorical variables and t tests

Table 1- Demographic Characteristics of the Participants.

Variable	psychiatric residents of IUMS (n=24)	psychiatric residents of USWR (n=18)	$\chi^2$	t	p	df	95%CI
Nationality/native	100%	100%					
Gender/female	13(54%)	8(44%)	0.623		0.53	1	-0.20 to 0.40
Gender/male	11(45%)	10(55%)	0.621		0.53	1	-0.20 to 0.40
Age, y	30.89+/-2.52	31.44+/-2.91		0.654	0.51	40	-2.25 to 1.15
Married residents	16(66%)	13(72%)	0.385		0.69	1	-0.33 to 0.22

for continues variables, in order to assess the homogeneity between the two assessed groups. Analysis of data was done by means of comparison of proportions. Proportions in each group were calculated according to the percent of responds to different Coding Categories. The later as well was elected according to the most repeated comparable preferred response among the two aforesaid clusters for between-group comparisons. Significance was defined as  $P \leq 0.05$ . MedCalc Statistical Software version 15.2 was used as statistical software tool for analysis.

## RESULTS

Groups were initially comparable and demographic variables were analogous (Table 1). All of the aforementioned residents in both groups responded incognito to the aforesaid Survey Questionnaire. Among 23 different queries in CMR-JC, the preferred analogous response to one specific reply, among a variety of answers, in 12 of them was significantly different in between-group analysis (Table 2 and Figure 1).

"To keep with current literature" was the most common reply among both groups concerning the first question [what is the most important goal of a journal club (JC)], which was significantly more prevailing in USWR (66.66% vs. 29.16%,  $\chi^2=4.72$ ,  $P=0.03$ ). Also regarding the same question, the second most reply in both groups was "to impact clinical practice", which showed nearly equal percent in this regard (15-20%). Neither of the residents in nor of the groups had pointed to other expectable replies as like as "to teach critical reading skills" or "to improve reading habits". With respect to the second question [Which of the above goal/goals is achieved by JC], 77.22% of the residents of USWR vs. 33.33% of them in IUMS pointed to "keep with current literature" ( $\chi^2=4.76$ ,  $P=0.02$ ), while a few of the respondents (<12%) marked the third coding category ("to teach critical reading skills") and again neither of them pointed to the 4<sup>th</sup> answer ("to improve reading habits"). Some of the respondents also marked 5<sup>th</sup> answer ("any other") with a mixture of individual standpoints. With respect to the 3<sup>rd</sup> [found attending JC to

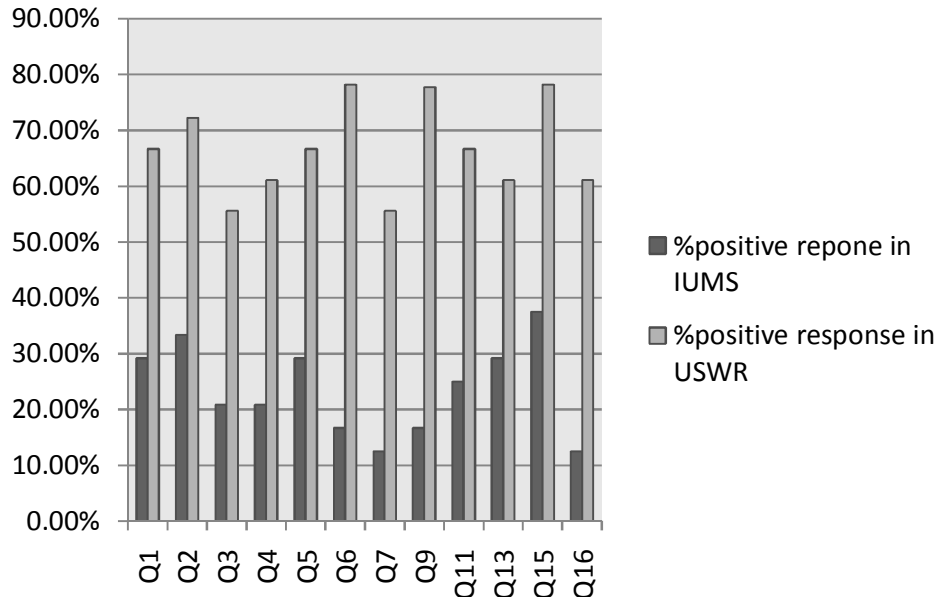
be of educational value], 4<sup>th</sup> [You found preparing for JC to be of educational value], 5<sup>th</sup> [In your opinion JC helped in development of research protocols], 7<sup>th</sup> [Presentation at JC helped refine your research work?], 9<sup>th</sup> [In your opinion JC provides stimulus to further review a topic], 15<sup>th</sup> [In your opinion the current format of JC is satisfactory] and 16<sup>th</sup> [In your opinion is residency program faculty participation in JC satisfactory?] question, the primary response of repliers was "agree", which again was significantly different among the groups ( $P=0.04$ ,  $0.01$ ,  $0.03$ ,  $0.003$ ,  $0.0008$ ,  $0.02$  and  $0.002$  on behalf of the USWR, respectively). The second most repeated reply with regard to the aforementioned questions was "neither agree nor disagree". Neither of residents in nor of the groups answered "strongly disagree" or "strongly agree" as regards any of the aforementioned questions in this survey. Once again, regarding the 6<sup>th</sup> question [Has your research work/dissertation come out of a JC?], 78.22% of the residents in USWR vs. 16.66% of them in IUMS responded positively ("Yes") ( $\chi^2=13.48$ ,  $P=0.0002$ ). As regards the 11<sup>th</sup> question [indicate the most important reason/reasons for your decision to attend JC] also 66.66% of the respondents in USWR versus 25% of them in IUMS pointed "To keep with current literature" ( $\chi^2=5.688$ ,  $P=0.017$ ). In this regard the second most repeated answer, in both groups, was "to impact clinical practice" (20.83% and 16.66% in USWR and IUMS, respectively). A few also had pointed to other answers like "mandatory attendance" and "to improve presentation skills" or "others". But again neither of them had pointed to answers like "to learn epidemiology /biostatistics" or "to learn critical reading skills". Also respecting the 13<sup>th</sup> question [Which of the methods for continuing education do you prefers the most?], 61.11% of the respondents from USWR vs. 29.16% of them from IUMS pointed to "Journal club" ( $\chi^2=4.518$ ,  $P=0.047$ ). In this regard the second most preferred reply was "conferences" in both groups (25% and 38.88% in USWR and IUMS, respectively). There was no significant difference between those two groups of residents with respect to the remaining 11 items, which included: 'In your opinion JC provides good review of public health related literature?' (Question8); 'In your opinion JC facilitate development of

**Table 2.** Analysis between group of chosen replies regarding different questions.

Number of questions	Preferred reply	Psychiatric residents of IUMS (N=24), Percent of positive response	Psychiatric residents of USWR (N=18), Percent of positive response	Chi-square	Df	P	CI
Q1-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	1	0.03	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	1	0.02	8.36% to 60.55%
Q 3- found attending JC to be of educational value	agree	20.83%	55.55%	3.99	1	0.04	5.35 % To 57.33%
Q 4-You found preparing for JC to be of educational value	agree	20.83%	61.11%	5.47	1	0.01	10.42% to 62.18%
Q 5-In your opinion JC helped in development of research protocols	agree	29.16%	66.66%	4.92	1	0.03	7.18% to 59.725
Q 6-Has your research work/dissertation come out of a JC?	Yes	16.66%	78.22%	13.48	1	0.0002	31.63% to 77.98%
Q 7-Presentation at JC helped refine your research work?	agree	12.5%	55.55%	7.01	1	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	1	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	1	0.01	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	1	0.04	5.26% to 47.234%
Q 15-In your opinion the current format of JC is satisfactory	agree	37.5%	78.22%	5.34	1	0.02	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	1	0.002	19.48% to 68.90%

*critical appraisal skills'(Question 10)'; 'Which key journals would you like to be made mandatory for the residents to review?(Question 12);' Do you think that introduction of a standard check list for review of different segments of an*

*article would be helpful to improve resident participation?(Question 14);' In your opinion is departmental faculty participation in JC satisfactory?(Question 17);' Have you ever presented a mock presentation before JC?'*



**Figure 1.** Different responses of psychiatric residents toward questions, IUMS vs. USWR.

(Question 18); 'In your opinion is presenting a mock presentation a valuable exercise in preparing for JC?' (Question 19); 'Have you ever been assigned the responsibility of JC coordination?' (Question 20); 'In your opinion is/was coordinating JC was a helpful experience to your own residency training?' (Question 21); 'Is the timing of journal club (that is, the first thing in the morning) appropriate?' (Question 22); 'Recommendations to improve overall quality of JC' (Question 23).

## DISCUSSION

Since the formation of the first documented journal club over 130 years ago, the organization and purpose of this academic tool has gone through many changes. Anyhow, journal club provides a forum to allow residents to remain current with the literature while also teaching them the methods to evaluate it critically (Valentini and Daniels, 1997). Cramer described use of a journal club to reinforce and evaluate family medicine residents' understanding and use of EBM concepts (Cramer and Mahoney, 2001). Pre- and posttests were used during each journal club to assess the residents' understanding of key EBM concepts related to the article discussed. Pretest scores improved over the year from 54.5% to 78.9% ( $p < 0.001$ ) and posttest scores improved from 63.6% to 81.6% ( $p < 0.001$ ), demonstrating the journal club's ability to help residents utilize EBM techniques. Linzer and colleagues compared a journal club to a control seminar series with regard to medical interns' reading habits, epidemiology and biostatistics knowledge, and ability to read and incorporate the medical literature

into their practice of medicine (Linzer et al., 1988). Forty-four interns were randomized to participate in the journal club or a seminar series. After a mean of 5 journal club sessions, 86% of the journal club group improved their reading habits compared to none in the seminar group. Knowledge scores increased more with the journal club and there was a trend toward more knowledge gained with sessions attended. Eighty percent of the journal club participants reported improvement in their ability to incorporate the literature into medical practice compared to 44% of the seminar group. Journal clubs have also been used extensively to aid in the education and training of pharmacy students and residents. The journal club was a major component in 90% and 83% of drug information practice experiences offered by first professional pharmacy degree programs and nontraditional PharmD degree programs, respectively (19). Objective of the present assessment was to appraise the likely importance of supervision on what resident could comprehend as goals, values or importance (scientific or clinical) of journal club curriculums. While Sidorov had defined successful journal clubs as those with longevity (at least 2 years) and high levels of resident participation (at least 50% attendance)(10), according to the findings, quality of supervision, as well, may have direct influence on final outcome of journal clubs. Such result is in agreement with the findings of Van Derwood et al. (1991) and Heiligman and Wollitzer (1987) and somewhat in contrast with Linzer (1987). Although the chief resident in IUMS, in accompany with the other senior residents, had the major managing role in the sessions, but the final outcome was not comparable with the USWR's curriculum supervised

by a faculty member. It shows that scientific knowledge needs to be integrated too with reasonable insight, expertise, enthusiasm or a combination of them. In a survey of family practice journal clubs, Van Derwood et al. found that attendance rates were highest in clubs moderated by the faculty or a faculty-and-resident team as compared with clubs moderated by residents alone. Also there was a significant correlation between the attendance at journal clubs by the faculty and residents and the program director's perception of its educational value (Alguire, 1998). Heiligman and Wollitzer (1987) also defined success in family practice journal clubs by the level of satisfaction of program directors with the educational experience. Variables associated with high levels of satisfaction were the regular attendance by program faculty, having a designated leader, and mandatory attendance. In contrast, Linzer demonstrated higher attendance rates in a journal club led by a chief resident (Linzer 1987). In this regard, Linzer and colleagues compared two formats for teaching critical reading skills to internal medicine residents; one journal club was led by a generalist faculty member, and the other by a chief resident with invited subspecialists. According to the findings, the faculty-led team reported reading fewer articles, although there was a trend of reading them more completely (Linzer et al. 1987). Also in another study, A resident run model of journal club was developed based on Adult Learning Theory. A 30-question survey was created to assess residents' attitudes and satisfaction with the new model. According to the findings, all respondents preferred the new model compared to the old model. Residents reported that the new model increased their medical knowledge (88%) and they were able to apply the methods learned in journal club to actual patients (82%) (Hartzell et al., 2009). The other result of the current evaluation could be that the various goals of journal club may not be achieved without fundamental enlightenment and tutoring. In a national survey of emergency medicine residency programs, Jouriles et al. (1996) reported that 42% of training programs did not have learning goals for their journal clubs. Although they did not directly ask program directors to list their goals, these authors reported that the three most common journal club formats were designed to keep the residents current (21%), to teach research design (21%), or to review selected topics (16.2%); teaching critical appraisal of the medical literature was not listed as an organizational format (Jouriles et al., 1996). In spite of numerous critical discussions, particularly in USWR, the other common goals of such program, in addition to "keeping up with the current medical literature", such as "teaching critical appraisal skills", "having impact on clinical practice" and "improvement of reading habits", were obscured by overt clinical stance of the participants in the present assessment. In general, club moderator, whether faculty or resident, must facilitate the small group activities. Also,

one of the problems that were palpable was resident's underestimation of himself or herself that could prevent proper or mutual participation during the sessions, particularly with respect to first and second year residents. Such a matter needs to be taken into consideration carefully by the tutor since it may possibly cause unwell outcome as regards the ultimate goals of the curriculum. Encouragement of suitable assertiveness and interchange of knowledge with other colleagues as well can be regarded as one of the helpful aspects of journal club. Small sample size and restriction of study to a few academic centers were among the main weaknesses of this survey. Findings of this investigation necessitate further confirmation by means of more comprehensive and attentive studies.

## Conclusion

Methodical supervision of journal club by expert and enthusiastic faculty member may generate more practical insight with respect to such important educational program, and educational satisfaction may be higher in clubs moderated by the faculty.

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## REFERENCES

- Alguire, P.C. (1998). A review of journal clubs in postgraduate medical education. *J. Gen. Intern. Med.* 13(5): 347-353.
- Bethesda, M.D. (2006). National Library of Medicine and National Institutes of Health. NCBI PubMed [PubMed Overview]. Available from: <http://www.ncbi.nlm.nih.gov/entrez/query/static/overview.html>. Accessed November 30, 2006.
- Cole, S.W. and Berensen, N.M. (2005). Comparison of drug information practice curriculum components in US colleges of pharmacy. *Am. J. Pharm. Educ.* 69(2): Article 34.
- Cramer, J.S. and Mahoney, M.C. (2001). Introducing evidence based medicine to the journal club, using a structured pre and post test: a cohort study [e-publication]. *BMC Med Educ.* 1: 6.
- Deenadayalan, Y., Grimmer-Somers, K., Prior, M. and Kumar S. (2008). How to run an effective journal club: a systematic review. *J. Eval. Clin. Pract.* 14(5): 898-911.
- Greenhalgh, T. and Weatherall, D. (1997). How to Read

- a Paper, London, BMJ Books.
- Hartzell, J.D., Veerappan, G.R., Posley, K., Shumway, N.M. and Durning, S.J. (2009). Resident run journal club: a model based on the adult learning theory. *Med Teach*. 31(4): e156-61.
- Heiligman, R.M. and Wollitzer, A.O. (1987). A survey of journal clubs in U.S. family practice residencies. *J. Med. Educ*. 62: 928.
- Inui, T.S. (1981). Critical reading seminars for medical residents. A report of a teaching technique. *Med. Care* 19: 122.
- Jouriles, N.J., Cordell, W.H., Martin, D.R., Wolfe, R., Emerman, C.L. and Avery, A. (1996). Emergency medicine journal clubs. *Acad Emerg Med*. 3: 872-878.
- Kuhn, J.G., Wyer, P.C., Cordell, W.H. (2005). A survey to determine the prevalence and characteristics of training in evidence based medicine in emergency medicine residency programs. *Education*, 28: 353-359.
- Lee, A.G., Boldt, H.C., Golnik, K.C., Arnold, A.C., Oetting, T.A., Beaver, H.A., Olson, R.J., Carter, K. (2005). Using the Journal Club to teach and assess competence in practice-based learning and improvement: a literature review and recommendation for implementation. *Surv Ophthalmol*. Nov-Dec; 50(6): 542-548.
- Linzer, M. (1987). The journal club and medical education: over one hundred years of unrecorded history. *Postgrad. Med. J*. 63: 475.
- Linzer, M., Brown, J.T., Frazier, L.M. (1988). Impact of a medical journal club on house-staff reading habits, knowledge, and critical appraisal skills. *JAMA*. 1988;260:2537-41.
- Linzer, M., DeLong, E.R. and Hupart, K.H. (1987). A comparison of two formats for teaching critical reading skills in a medical journal club. *J. Med. Educ*. 62: 690.
- Moberg-Wolff, E.A. and Kosasih, J.B. (1995). Journal clubs. Prevalence, format, and efficacy in PM & R. *Am. J. Phys, Med, Rehabil*. 7(3): 224-229.
- Saima, A. and Muhammad, M.K. (2006). Do community medicine residency trainees learn through journal club? An experience from a developing country, *BMC Medical Educ*. 6: 43.
- Sidorov, I. (1995). How are internal medicine residency journal clubs organized, and what makes them successful? *Arch. Intern. Med*. 155: 1193.
- Valentini, R.P. and Daniels, S.R. (1997). The journal club. *Postgrad. Med. J*. 73(856): 81-85.
- Van Derwood, J.G., Tietze, P.E., Nagy, M.C. (1991). Journal clubs in family practice programs in the southeast. *South Med. J*. 84: 483.
- Watts, N.T. (1990). Handbook of Clinical Teaching. Edinburgh, Churchill Livingstone.