



LETTER to EDITOR

Key point sessions, a knowledge sharing method in clinical toxicology education

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Medical management is a team work (1) which shares knowledge in medical field, enhances the level of physician information, and leads to improve the quality of care (2). Having enough medical knowledge is required for making the best decision for patients (3). In this regard, physician's information varies by experience, skill and literacy, (4)(5) as well as the exchange of information improves the quality of treatment for patients. (6) It is reasonable that failure to exchange information results in miss-diagnosis, improper treatment, and compromises the quality of care (7).

The nature of clinical toxicology is multidisciplinary, so the internal organ problems including intoxications are put into the field of internal medicine; similar problems in poisoned children brings pediatric medicine into the arena. The emergency nature of much acute intoxication, the legal problems of poisoned patients, and respiratory assist in unconscious cases or need to sedate sever agitation in some intoxicated patients; on the contrary, require the expertise of emergency medicine, forensic medicine, and anesthesiology respectively.

Multidisciplinary nature of clinical toxicology is a valuable point and incorporating various medical specialties, gives great power to clinical toxicology groups. On the other hand, the diversity in specialties leads to a variety of viewpoints on dealing with poisoned patients.

Clinical Toxicology Departments (CTD) are limited in Iran. Only 3 departments are currently allowed to train assistant fellowships by the Ministry of Health and Medical Education.

Mashhad CTD has started training toxicology fellowships in 2008 for the first time in Iran.

Since then, two or three fellowship assistants from different specialties have been recruited annually and trained in the CTD, Mashhad University of Medical Sciences. The specialties were allowed to take exam for fellowship residency of clinical toxicology including Internal medicine, emergency medicine, MD or PhD of toxicology, Pediatric medicine, forensic medicine, and anesthesiology.

Mashhad CTD has designed and programmed conferences named "key point sessions". Key point sessions include common, practical, and useful key points related to poisonings. These sessions are explained by particular expertise to other faculties and fellowship assistants in the short time conference format. Various types of toxicology tests, false positive and negative tests, environmental toxins, determination of absorption, distribution and metabolism of drugs and toxins, and methods to identify and quantify toxins and drugs in biological and non-biological fluids can be explained by basic toxicology knowledge. Key points in tracheal intubating patients, sedation, using mechanical ventilation, and pain management are some of topics bringing anesthesiology to the field. Emergent aspects of poisonings, resuscitation of critical intoxicated cases, and airway managing need expertise of emergency medicine. Criminal cases are frequently found among poisoned

patients. Forensic problems and evaluating contributory or determinant items in specific injuries may lead to death; likewise, determining the presence or absence of drugs and illegal substances and chemicals in the blood, tissue, breath, hair, etc. are included in the area of forensic medicine. Unusual presentations and particular considerations in a poisoned child, merging toxin hazards, and pathophysiologic vulnerabilities of children and infants to intoxication and implications for administrating antidotes are in the area of pediatric medicine. Training materials such as approach to acute kidney failure, important tips on ischemic heart diseases, common dysrhythmias, and approach to liver failure are a number of topics that can be taught by an internist.

The key point sessions have been held in Mashhad CTD for the past 18 months bimonthly before text review sessions. Time of sessions has been determined 20 to 30 minutes in the morning. Hyperglycemia management in DM type 2 in admitted cases, rhabdomyolysis, cytopenia following drug overdose, serum therapy in children, overview on the causes of laboratory error, management of hypertension, autonomic system, and acid-base disorders are the topics discussed in KPSs. In this investigation, we assessed attitude of faculties and resident fellowships regarding KPSs.

Faculties and fellowship residents in Mashhad CTD were the participants of the current study as a cross sectional study. Their attitude about the quality of these sessions was evaluated.

The tool for data collecting in this study was a researcher made checklist. Viewpoints of the medical education professionals were applied to develop an 11-item checklist.

Due to the limited number of participants, the program was not separated for the two groups of teachers and students. 5 point Likert scale has been used in this assessment from strongly disagree (number 1) to strongly agree (number 5). It should be noted that the purpose of this questionnaire was to evaluate faculties and fellowship residents' perceptions. Also, it was similar to an interview and was developed just for convenient application.

Based on a questionnaire with 5 point Likert scale (5-1: strongly agree, agree, undecided, disagree and strongly disagree) participants' viewpoints about the quality of KPSs were evaluated. The results are shown in table 1.

In general, important points in CPR, practical points in common infections, common arrhythmias and their specific treatments, common electrolyte disturbances in adults and pediatrics, fundamentals of hemodialysis, basic subjects having critical clinical application, opioid use in malignancies pain, national protocols in management of alcohol addiction/ MMT / BMT, principles of toxicology and related terminology, opioid abuse management in pregnancy, specific points in pediatric poisoning and

Table 1. Comparison of participants' viewpoints about quality of KPSs which has been held in Mashhad CTD

Text of questioned Items	Likert score				
	1	2	3	4	5
Are these sessions effective in recalling material previously learnt by other professors?	0	0	12.5%	50%	37.5%
Can the content of these sessions be helpful in managing patients by other professors?	0	0	37.5%	37.5%	25%
Is the time of sessions appropriate?	0	0	12.5%	75%	0
Is the duration of sessions appropriate?	0	0	12.5%	12.5%	75%
Do you agree with holding two consecutive sessions (KPSs and Text review sessions) in one day?	0	50%	25%	25%	0
Is the amount of information that is given during sessions sufficient to solve related common problems?	0	12.5%	25%	50%	12.5%
Can it be helpful to have sessions repeatedly, for example every six months or annually?	0	0	25%	50%	25%
Have the topics been discussed up to now appropriate?	0	0	25%	75%	0
Have "key" points been mentioned in these sessions?	0	0	25%	50%	25%
Are these sessions effective in fostering greater collaboration between professors?	0	0	25%	50%	25%
Do you agree with the continuation of Fellowship Assistants participation in these sessions?	0	0	12.5%	37.5%	50%

common differential diagnosis, principles of autonomic system, types of receptors, mechanical ventilation, methods of hemodialysis, hypoglycemia management, important points in management of COPD, and medical emergency conditions were the answers of faculties to question: "what subjects do you prefer to be discussed".

Among different methods of presentation including simple lecture, power point slide presentation, and use of whiteboard; and also, among different formats of discussion including explanation of specific condition and focus on key points", "case report/problem solving/patient management and focus on key point", power point slide presentation and case report/problem solving/patient management and focus on key points" were the most preferred method and format respectively.

Most of participants agreed with both the reference book for every field and more general references to be up dated.

To answer the question "which one should be more emphasis to: more critical points or more common points?" most participants agreed with both.

Internal medicine points were the most preferred domain to be discussed followed by critical care points, basic toxicology and clinical pharmacology points.

Most of participants mentioned that KPSs are effective in recalling material previously learnt by other professors and the content of sessions is helpful in managing cases by other colleagues; also they believed that the amount of information given during sessions is helpful to solve related problems; they mostly agreed to time and duration of program. Based on viewpoints of participants, KPSs should be held in a different time than text review sessions.

The exchange of medical information between physicians leads to two important items: better treatment of patients (8) and improving physician awareness (9).

Based on the findings of current study, KPS can be suggested

as an effective method that help the faculties and fellowship assistants in different specialty to be scientifically updated, so considering the wide range of topics, the need to continue these sessions is quietly logical; on the other view, these conferences can provide an intimate atmosphere of questions and answers between different professionals, so that they can take advantages of the viewpoints of each other, promote a culture of continues learning, integrate faculties' views on different aspects of an illness and finally organize more powerful and cohesive clinical toxicology groups. However, it is currently raised as a suggestion and there is definitely need for more thorough educational methodology revisions in order to achieve a more comprehensive way of sharing multidisciplinary clinical toxicology knowledge.

It is recommended that CTDs take advantage from this educational program through the country.

Since this method was first implemented in our group and the present researchers did not find a similar investigation, the comparison with other studies was limited. Also, a limited number of faculty members and Fellowship residents of Clinical Toxicology were another limitation of this study. The mentioned points emphasize a more comprehensive study with a larger number of participants in the future.

Ethical considerations: Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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REFERENCES

1. Hámornik BP, Juhász M. Knowledge sharing in medical team: knowledge, knowledge management, and team knowledge. *Periodica Polytechnica Social and Management Sciences*. 2010; 18(2):99-107.
2. Tetroe J.M, Graham I.D, Foy R, Robinson N, Eccles M.P., Wensing M, et al. Health research funding agencies' support and promotion of Knowledge translation: An international study. *Milbank Q*. 2008;86(1): 125-55.
3. Haugom, J. Innovation in healthcare: Why it's needed and where it's going. *Health Catalyst*. 2014; Retrieved from <https://www.healthcatalyst.com/innovation-inhealthcare-why-needed-where-going>
4. Mushtaq I, & Rizwan A. Obstacles to knowledge sharing in engineering organizations: A quantitative approach. *International Journal of Knowledge Management Studies*. 2018; 9(3): 293-307.
5. Lam A. Tacit knowledge, organizational learning and societal institutions: An Integrated framework. *Organization Studies*. 2000;21(3): 487-513.
6. Richardson J.E, Abramson E. L, Kaushal R. The value of health information exchange. *J Healthc Leadersh*. 2012; 4: 17-23.
7. Chetley A. Improving the health, connecting people: The role of ICTs in the Health sector of developing countries. 2006; Retrieved from http://www.infodev.org/infodev-files/resource/InfodevDocuments_84.pdf
8. Ben Hamouda I, Feki M, Boughala I, Chourabi O. Understanding Knowledge sharing in healthcare system. In *Proceedings of the Mediterranean Conference on Information Systems (MCIS)*. 2015; AIS Electronic Library.
9. Adeyelure T.S, Kalema B.M, Motlanthe B.L. An empirical Study of knowledge sharing: A case of South African healthcare system. *Knowledge Management & E-Learning*. 2019; 11(1):114-28. <https://doi.org/10.34105/j.kmel.2019.11.007>