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A gap analysis of critical thinking skills and attitude toward critical thinking among interns

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Abstract:

BACKGROUND: Studies have called for reforms in medical education to create a better generation of doctors who can cope with the system-based problems; they would encounter in an interdisciplinary and collaborative environment and make better-reasoned decisions for quality patient care. To achieve this, critical thinking (CT) is at the very heart of development of new medical knowledge. Medical academics and practitioners have raised concerns about the low levels of CT and stress the need for fostering CT among medical practitioners.

OBJECTIVE: The objective of this study was to identify and analyze the gap among the interns with respect to their CT skills and attitude toward CT.

MATERIALS AND METHODS: A cross-sectional descriptive study was conducted among the MBBS interns of an institution of national importance in India. The interns were administered with a short version of Watson-Glaser CT appraisal tool to assess their CT skills and with CT disposition self-rating form to assess their attitude toward CT, respectively. The data were analyzed to assess their level of CT skills and their attitude toward CT.

RESULTS: Sixty-one percent of the interns responded to the survey, and only 26% of interns had high CT skills; the five dimensions of CT showed varied levels of skills among the interns. Fifty-one percent of interns showed positive attitude toward CT.

CONCLUSION: The findings showed a gap among the interns in their CT skills and their attitude toward CT.

Keywords:

Critical thinking, gap analysis, interns

Introduction

At times, doctors are not in a position to take effective decisions during medical emergencies due to lack of critical thinking (CT) skills.^[1-5] Usually, doctors are expected to take effective decisions in a well-defined medical emergencies. Sometimes when they face undefined medical emergencies, they are unable to take effective clinical decisions and that leads to untoward incidents. One among the reasons for this is lack of CT skills

among doctors.^[6,7] CT, the ability to think clearly and rationally about what to do or what to believe, is essential for the practice of medicine.^[8] CT is an essential cognitive skill for the individuals involved in various healthcare domains such as doctors, nurses, laboratory assistants, patients, and so on, and recent evidence suggests that CT is being perceived/evaluated as a domain-general construct and it is less distinguishable from that of general cognitive abilities.^[9] To professionally equip them in making effective decisions at times of medical emergencies, it has been reported in various literature that CT should be fostered at grassroot level among the medical students,

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which will promote better decision-making when they become practitioners.^[2,5,10] CT promotes better decision-making abilities among the doctors, which will ultimately result in better and improved health care to the society.^[11,12] Medical students are not only expected to master an enormous body of knowledge but they also need to achieve high levels of CT for solving clinical problems systematically and make effective clinical decisions and judgments.^[1,13] Again, CT is not explicitly taught or assessed in most of the education programs for health professionals.^[14] However, medical academics and practitioners have raised concerns about the low levels of CT and stress the need for fostering CT among medical practitioners.^[15,16] Studies related to CT are limited and confined to assessment of CT skills and disposition toward CT. Literature on interventional studies and the impact of intervention in improving the CT skills among the medicos is not available.^[17,18] An attempt has been made through the present study to identify and analyze the gap among the interns with respect to their CT skills and attitude toward CT.

Materials and Methods

This was a cross-sectional descriptive study conducted among the MBBS interns with two subgroups (male and female) in a tertiary care teaching hospital during 2016. The study was approved by institutes' ethical committee. Informed consent was taken from the interns for participating in this study. Regular batch interns of a tertiary care teaching hospital for the academic year 2016 were chosen as participants for this study. All the 98 MBBS students who have successfully cleared the final year examination during December 2015 and admitted for internship of the academic year 2016 were included for the study with their consent. The individuals who attended the interns orientation program were administered with Hogan Lovells CT appraisal tool which is a modified version of Watson-Glaser CT appraisal tool^[19] to assess their CT skills which contains five subtests with 17 items that assess the inference, recognitions, deduction, interpretation, and evaluation skills and with CT disposition self-rating form^[20] containing 20 items to assess their attitude toward CT, respectively. The Hogan Lovells CT appraisal tool is an assessment tool designed to measure an individual's CT skills which is a modified version of Watson-Glaser CT appraisal tool that has a long history of use in educational and business settings. It is used to determine an individual's ability to think critically and as a way of assessing their suitability for an organization or a specific position within it. The CT disposition self-rating form estimates one's overall disposition toward CT that has been in the past 2 days. Percentage analysis of the data was carried out using the interquartile range of the scores of the participants to assess their level of CT skills as low,

moderate, and high. Their attitude – positive, mixed, and negative toward CT was assessed following the scoring procedures given in the tool. The participants were asked to award 5 points for every “Yes” on odd numbered items and for every “No” on even numbered items. If their total is 70 or above, their disposition toward CT over the past 2 days is rated as generally positive. Scores of 50 or lower indicate a self-rating that is averse or hostile toward CT over the past 2 days. Scores between 50 and 70 show that they would rate themselves as displaying an ambivalent or mixed overall disposition toward CT over the past 2 days.

Results

Of 98 interns enrolled for the study, only 68 returned the questionnaires in a fully completed form. Questionnaires with incomplete information and questionnaires that were not returned are not counted for calculating the response rate. The response rate for the survey was 69%. The interpretation of the overall levels (low, moderate, and high) of CT skills of the interns participated in the study is given in Table 1.

The different levels (low, moderate, and high) of the subset of CT skills such as inference, recognition of assumption, deduction, interpretation, and evaluation of arguments is given in Table 2.

The different types (positive attitude, mixed attitude, and negative attitude) of attitude toward CT of the interns are given in Table 3.

Twenty-six percent of interns had high CT skills, and the five sub dimensions of CT showed varied levels of skills among the interns and thereby the extent of gaps in CT skills between them. Fifty-one percent of interns showed positive attitude toward CT. The findings showed a gap among the interns in their CT skills as well as gaps in their attitude toward CT.

Discussion

Twenty-six percent of interns had high CT skills, and the five sub dimensions of CT showed varied levels of skills among the interns gives an impression that CT is not proactively fostered during their educational program as a major educational component.^[14] Fifty-one percent of interns showed positive attitude toward CT denotes that only half of the respondents believe CT in medical practice is valuable and exciting.^[3,21] The findings showed a gap among the interns in their CT skills and

Table 1: Overall critical thinking skills

	Low	Moderate	High
n (%)	12 (17.64)	38 (55.88)	18 (26.47)

Table 2: Subtest of critical thinking skills

	Inference, n (%)	Recognition of assumption, n (%)	Deduction, n (%)	Interpretation, n (%)	Evaluation of arguments, n (%)
Low	44 (64.70)	4 (5.88)	4 (5.88)	11 (16.17)	32 (47.05)
Moderate	13 (19.11)	15 (22.05)	31 (45.58)	48 (70.58)	29 (42.64)
High	11 (16.17)	49 (72.05)	33 (48.52)	9 (13.23)	7 (10.29)
Overall	68 (100)	68 (100)	68 (100)	68 (100)	68 (100)

Table 3: Attitude toward critical thinking

	Positive	Mixed attitude	Negative
n (%)	35 (51.47)	16 (23.52)	17 (25)

their attitude toward CT. Hence, it is pertinent that understanding CT skills of medical students and their attitude toward CT is essential to formulate objectives, teaching–learning methods, and assessment methods to deliberately foster CT among them.^[2,22-24] Such studies will also help policymakers devise policy measures to promote CT among the medicos and recommend relevant educational interventions to develop CT among the interns.^[18]

The results of this study suggest that the assessing the CT skills and attitude toward CT will be useful for improving student selection for health professional programs. CT assessment tools are being used extensively in nursing and pharmacy student selection.^[21,25-27] Similar interventions have been conducted among professionals and students of different fields to inculcate the habit of CT in their routine work. These studies have proved the importance of studying CT that makes individuals more productive.^[2,6,12,18,22,26]

This study further suggests that assessing the CT skill and attitude toward CT is a logistically feasible one for selection and training of medical resident and for fostering CT skills. It should be noted that the results from this study are unique to the interns working in the teaching hospital where the study was conducted and includes only one batch of interns of a selected academic year. In addition, not all members of the interns participated in the full study. Future research should investigate the relationship between CT skills and academic outcomes within a larger group of participants, ideally across multiple programs.

Conclusion

Studies have suggested the need for studying CT of individuals to make them more productive in their workplace. There are studies that have assessed the CT skills and attitude toward CT among the medical fraternity, but there are no interventional studies conducted among the medical interns with reference to their CT skills. The findings showed a gap among the interns in their CT skills and their attitude toward CT and addresses the dearth of literature with regard to CT

skills and attitude toward CT among the medical interns in India. The need to foster CT among the interns is also evident from this study. Such studies will also help policymakers devise policy measures to promote CT among the medicos and recommend relevant educational interventions to develop CT among the interns. This will also help educationists to frame strategies to introduce CT for selection of residents and include CT in the formal curriculum of all health professional education.

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Conflicts of interest

There are no conflicts of interest.

References

1. Sharples JM, Oxman AD, Mahtani KR, Chalmers I, Oliver S, Collins K, *et al.* Critical thinking in healthcare and education. *BMJ* 2017;357:j2234.
2. Macpherson K, Owen C. Assessment of critical thinking ability in medical students. *Assess Eval Higher Educ* 2010;35:41-54.
3. Heidari M, Ebrahimi P. Examining the relationship between critical-thinking skills and decision-making ability of emergency medicine students. *Indian J Crit Care Med* 2016;20:581-6.
4. Croskerry P, Norman G. Overconfidence in clinical decision making. *Am J Med* 2008;121:S24-9.
5. Croskerry P, Nimmo GR. Better clinical decision making and reducing diagnostic error. *J R Coll Physicians Edinb* 2011;41:155-62.
6. Lateef F. Patient expectations and the paradigm shift of care in emergency medicine. *J Emerg Trauma Shock* 2011;4:163-7.
7. Lighthall GK, Vazquez-Guillamet C. Understanding decision making in critical care. *Clin Med Res* 2015;13:156-68.
8. Krupat E, Sprague JM, Wolpaw D, Haidet P, Hatem D, O'Brien B. Thinking critically about critical thinking: Ability, disposition or both? *Med Educ* 2011;45:625-35.
9. Koenig JA; National Research Council (U.S.), editors. *Assessing 21st Century Skills: Summary of a Workshop*. Washington, D.C: National Academies Press; 2011. p. 142.
10. Tayyeb R. Effectiveness of problem based learning as an instructional tool for acquisition of content knowledge and promotion of critical thinking among medical students. *J Coll Physicians Surg Pak* 2013;23:42-6.
11. Benner P, Hughes RG, Sutphen M. Clinical reasoning, decisionmaking, and action: Thinking critically and clinically. In: Hughes RG, editor. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008. (Advances in Patient Safety). Available from: <http://www.ncbi.nlm.nih.gov/books/NBK2643/>. [Last accessed on 2018 Sep 06].
12. Heidari M, Shahbazi S. Effect of training problem-solving skill on decision-making and critical thinking of personnel at medical emergencies. *Int J Crit Illn Inj Sci* 2016;6:182-7.

Zayapragassarazan and Chacko: Critical thinking skills and attitude toward critical thinking among interns

13. Zayapragassarazan Z, Menon V, Kar S, Batmanabane G. understanding critical thinking to create better doctors. *J Adv Med Educ Res* 2016;1:5.
14. Huang GC, Newman LR, Schwartzstein RM. Critical thinking in health professions education: Summary and consensus statements of the millennium conference 2011. *Teach Learn Med* 2014;26:95-102.
15. Wallman A, Lindblad AK, Gustavsson M, Ring L. Factors associated with reflection among students after an advanced pharmacy practice experience (APPE) in Sweden. *Am J Pharm Educ* 2009;73:107.
16. Bengtsson M, Carlson E. Knowledge and skills needed to improve as preceptor: Development of a continuous professional development course – A qualitative study part I. *BMC Nurs* 2015;14:51.
17. Maudsley G, Strivens J. 'Science', 'critical thinking' and 'competence' for tomorrow's doctors. A review of terms and concepts. *Med Educ* 2000;34:53-60.
18. Bowen JL. Educational strategies to promote clinical diagnostic reasoning. *N Engl J Med* 2006;355:2217-25.
19. Apply – Hogan Lovells. Available from: <http://graduates.hoganlovells.com/page/apply/>. [Last accessed on 2018 Sep 07].
20. Facione P, Gittens CA. *Think Critically*. 3rd ed. Boston: Pearson; 2015. p. 432.
21. Giddens J, Gloeckner GW. The relationship of critical thinking to performance on the NCLEX-RN. *J Nurs Educ* 2005;44:85-9.
22. Ross D, Schipper S, Westbury C, Linh Banh H, Loeffler K, Allan GM, *et al*. Examining critical thinking skills in family medicine residents. *Fam Med* 2016;48:121-6.
23. Morrissey B, Heilbrun ME. Teaching critical thinking in graduate medical education: Lessons learned in diagnostic radiology. *J Med Educ Curric Dev* 2017;4:1-5.
24. Wilkes M, Bligh J. Evaluating educational interventions. *BMJ* 1999;318:1269-72.
25. Allen DD, Bond CA. Prepharmacy predictors of success in pharmacy school: Grade point averages, pharmacy college admissions test, communication abilities, and critical thinking skills. *Pharmacotherapy* 2001;21:842-9.
26. Colucciello ML. Critical thinking skills and dispositions of baccalaureate nursing students – A conceptual model for evaluation. *J Prof Nurs* 1997;13:236-45.
27. Shin K, Jung DY, Shin S, Kim MS. Critical thinking dispositions and skills of senior nursing students in associate, baccalaureate, and RN-to-BSN programs. *J Nurs Educ* 2006;45:233-7.