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## Setting an Agenda for Collaborative Research in Medical Education in Indonesia

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### Abstract

**Introduction:** Collaborative research in medical education has been proposed as part of the education collaboration activities among three medical faculties (Universitas Indonesia, Universitas Sebelas Maret and Universitas Andalas) under "Development of Medical Education and Research Centres and Two University Hospitals Project in Indonesia". This paper describes the development of medical education research priorities among three medical schools with consideration of different resources and capabilities in the three settings.

**Methods:** A two-day working group meeting held in October 2011 was attended by representatives of the three medical schools and the Directorate of Higher Education of the Indonesian Ministry of Education and Culture. Participants were divided into two groups to develop a list of research areas and topic priorities. A rating system was employed to select the most prioritized topics among those listed. Each participant was then asked to score each topic according to pre-determined criteria.

**Results:** The first five research priorities in medical education were (1) learning environment, (2) Evidence Based Practice (EBP) in medical education, (3) medical education and patient safety, (4) students assessment in clinical stage, and (5) involvement of residents in clinical teaching.

**Conclusion:** Through a listing and scoring process, collaborative research priorities for three medical schools have been established. The research priorities were set considering the availability of resources in the three medical schools and also other factors (national importance, contribution toward academic hospital development and collaboration program).

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### Introduction

The development of Evidence Based Medicine and the increasing demand of its implementation in the wider aspect of healthcare have led to the growing need of the implementation of evidence-based policy and practice in education.

Currently, the volume of medical education research being conducted worldwide is increasing. Effort toward selection of the most important topics is needed to ensure that the research will have direct impact on medical education and medical practice. Initiatives have been made in some countries to determine a national medical education research agenda (Fincher *et al.*, 2010; Xu *et al.*, 1999).

Recent developments in healthcare and services within national and global scope, recognition of new teaching and learning strategies and advances in information technology have influenced several transformations in medical education in Indonesia. These transformations need to be evaluated continuously and this is an opportunity for medical education research which is still somewhat limited in Indonesia.

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A set of activities has been planned within the framework of collaboration between three medical schools (Universitas Indonesia, Universitas Sebelas Maret and Universitas Andalas) in the "Development of Medical Education and Research Centres and Two University Hospitals Project in Indonesia" which comprises education, research and health services. This project is supported by the Directorate of Higher Education of the Ministry of Education and Culture, Republic of Indonesia. Collaborative research in medical education has also been proposed as part of educational collaboration activities. In planning the research, priorities have to be determined considering differences in resources and capabilities in the three medical schools.

Collaborative research in medical education among medical schools in Indonesia has not been reported previously. The aim of this report is to describe the strategy to select the priorities and determine the collaborative research agenda in medical education, which is agreed on and will be implemented by the three medical schools.

## Methods

To determine the research priorities, we adopted the approach used by the Task Force on Research Priorities during the "Millennium Conference in 2007: A Collaborative Approach to Educational Research" (MC07), (Fincher *et al.*, 2010). A two day working group meeting was held in Jakarta in October 2011 attended by representatives of the three medical schools whose positions were relevant to research in medical education, such as the Heads and Research Coordinators of the Medical Education Department or Medical Education Unit and the Manager of Education. The representative of the Directorate of Higher Education of the Ministry of Education and Culture, who is responsible for the project, was also present.

Prior to the meeting, a literature review was conducted by the core team to identify trends in medical education research, important issues in medical education research and previous medical education research which had been conducted nationally. The result of the literature review was presented at the beginning of the meeting. This was followed by presentation of the research focus of the three medical schools as well as their previous

medical education research to share experiences and interests for further planning.

The participants were then divided into two groups to develop a list of research areas and topic priorities that its team members collectively perceived to be of the highest importance in medical education. Each group comprised of representatives from the three medical schools and the Ministry of Education and Culture.

The two lists were then combined and redundant entries were condensed. This list was considered too extensive to be implemented as collaborative research by the three medical schools therefore needed to be prioritized. A rating system was employed to select the most prioritized topics among those listed. Each participant was then asked to score each topic according to the following criteria: (1) national importance, (2) feasibility and practicality, (3) contribution toward development of academic hospitals, and (4) contribution toward the collaboration program. Each criterion was rated on a scale of 1 (lowest priority) to 5 (top priority). These scores were totalled to create an overall score. According to the consensus of all participants, different weight for each criterion was assigned for final calculation as follows (1) national importance = 20%, (2) feasibility and practicality = 35%, (3) contribution toward development of academic hospital = 20% and (4) contribution toward collaboration program = 25%. The result would determine the research priorities to be implemented over the next five years.

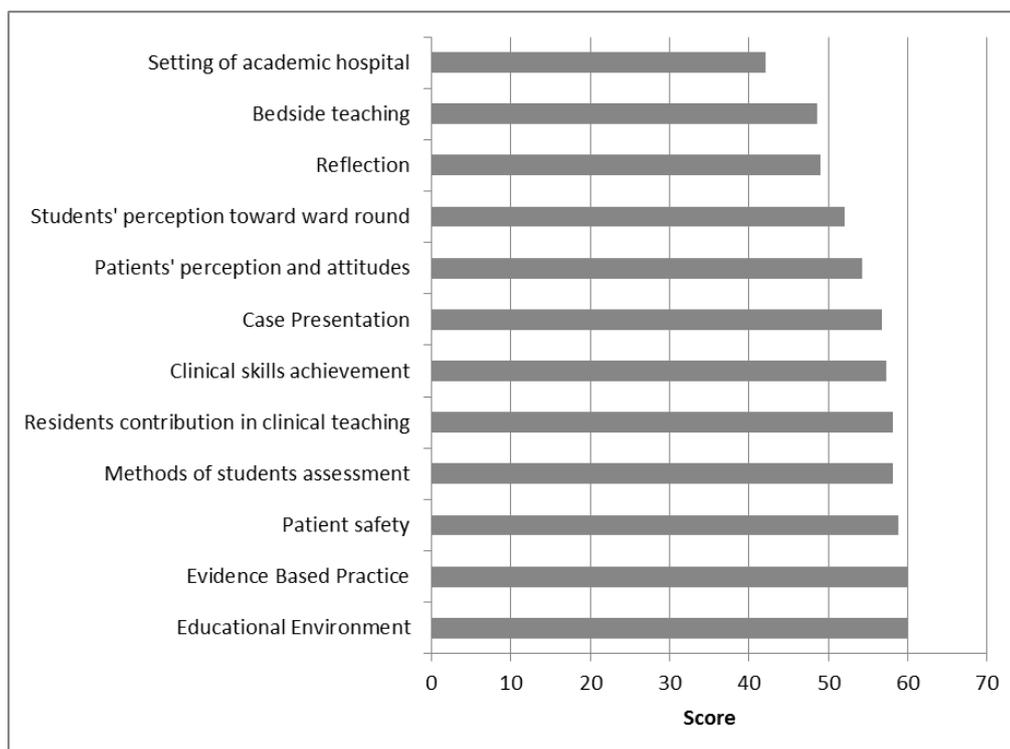
## Results

The meeting was attended by 16 representatives of the three medical schools (4 from each school) and the Directorate of Higher Education of the Ministry of Education and Culture. The initial list of research areas and topics developed as the result of the group discussion consisted of seven research areas and 16 research topics as presented in table 1. Figure 1 shows the total priority score based on the rating of the 16 participants. Based on the score rank, the first five research priorities were (1) evaluation of the education environment, (2) implementation of Evidence Based Practice (EBP), (3) implementation of patient safety, (4) student assessment in clinical stages, and (5) involvement of residents in clinical teaching.

**Table 1: Initial research priorities developed during the group discussion**

Area	Topics
Educational environment assessment	Perception of students and teachers toward educational environment in the academic and professional stage.
Teaching and learning in clinical stage	<ul style="list-style-type: none"> <li>• Description of achievement of clinical skills of the graduates in accordance to the standard of competency.</li> <li>• Patients' perception &amp; attitude about their contribution in clinical teaching.</li> <li>• Students' perception &amp; attitude toward residence contribution in clinical teaching.</li> <li>• Students' perception toward ward rounds.</li> <li>• Achievement of clinical reasoning skills through case presentation.</li> <li>• Implementation of bedside teaching, including students' perception and achievement of clinical reasoning.</li> </ul>
Infrastructure	Identify the ideal setting of facilities in academic hospitals, both for out-patients & in-patients which could support the teaching and learning process.
Reflection	Methods of teaching self-awareness and students' ability to make reflection.
Patient safety	Knowledge, attitude and behaviour of students and teachers related to patient safety.
Evidence based Practice	Description of evidence-based practice teaching and learning process and EBP skills of students.
Students assessment	Description of methods of students' assessment in clinical stage (e.g. Mini Cex, Long case, Objective Structured Clinical Examination/OSCE and Direct Observation of Procedural Skills/DOPS)

**Figure 1: The priority ratings of the research topics**



## Discussion

Medical education as a discipline has just commenced in Indonesia. Therefore, many participants have limited experience in medical education research. The process of identifying research priorities was begun by developing a list of research topics through focus group discussions. We believe this approach would produce a narrower list of topics which could be translated into research initiatives, compared to other techniques such as Delphi or a nominal group technique. Seven domains of research were identified and twelve topics were then listed within these domains. A scoring method to select the priorities and determine the collaborative research agenda in medical education by three medical schools in Indonesia has been implemented. This scoring method was determined through a consensus to reduce subjectivity and bias.

The research topic priorities selected were in line with current trends in medical education research. A review of four main journals in medical education identified four key domains in medical education research which were: applied curriculum and teaching issues, skills and attitude relevant to the profession, students' characteristics and students' evaluation (Regehr, 2004). Two among the five research topics selected in this collaborative project (evaluation of education environment and involvement of resident in clinical teaching) are part of curriculum and teaching issues, while evidence-based practice and patient safety are skills and attitudes relevant to the profession.

The learning environment is the manifestation of curriculum (Genn & Harden, 1986) therefore assessment of the educational environment of an institution should become an integral part of curriculum evaluation (Soemantri *et al.*, 2008). All three medical schools have recently experienced changes in the medical curriculum and assessment of the educational environment needs to be conducted as part of curriculum evaluation.

The need to incorporate knowledge, skills and attitudes on evidence-based practice (EBP) into medical curricula has been recognized around the world (Crilly *et al.*, 2009). It is also acknowledged by the Indonesian Medical Council as part of the Standard of Competencies of Indonesian Medical Doctors (Indonesian Medical Council, 2006). The implementation of EBP in the three medical schools and its academic hospitals need to be

evaluated to assess their preparedness in teaching EBP.

The need for patient safety education for health professions training has been recognized by many accreditation bodies. The World Health Organization (WHO) has developed the "WHO Patient Safety Curriculum Guide for Medical Schools" as a guidance in teaching patient safety to medical students (Walton *et al.*, 2010). Research in patient safety is considered as important by the three medical schools to assess its current implementation in their medical school curricula.

The decision to develop collaboration in medical education research by the three medical schools is part of a strategy to make educational research a priority in medical school (Shea *et al.*, 2004) while improving the quality of medical education research (Gruppen, 2007). To support that, the Indonesian Medical Council has recommend all Indonesian medical education institutions to allocate at least 5% of the operating budget of the institution for research activity that supports medical education research (Indonesian Medical Council, 2006). However, there is no evidence whether all medical education institutions have implemented this standard.

Awareness that "the education setting is a unique microcosm, so what work well within one setting may not work well in another" (Shea *et al.*, 2004), also fosters the need of collaboration. Other important issues such as the complex nature of educational interventions that involved multi-components/factors (Murray, 2002) and the constantly evolving context of medical education (and its research) were factors considered in selecting research priorities and determining the duration of collaborative research.

The prevalence of small samples and insufficient data has been the main limitation in medical education research which negatively impacts the ability to make good assessments. Small samples reduce the ability to see the effect of an intervention resulting in limitation of power. Insufficient data comes from a failure to collect enough data to allow reproducible conclusions. Thus, creative ways to gain more data and create larger samples of observations are needed (Shea *et al.*, 2004). Therefore, this collaborative research among the three medical schools can increase the generalizability and statistical power in a way

that the opportunity to collect sufficient data is larger (Carney *et al.*, 2004).

Collaboration is also recommended to overcome research challenges in medical education. Several opportunities for medical education research to both further its development and enhance its impact have been identified. These include collaborating with colleagues in other fields, studying a broader array of outcomes, linking medical education and health policy, examining emerging literature, and enhancing collaborative research skills (Shea *et al.*, 2004). Another advantage of collaborative research in medical education is that it offers significant opportunities for investigators to pool limited resources and expand professional networks. Collaboration also enhances research design so that intervention and investigation can occur in a number of comparative settings and provide rigor to an investigation (Hugget *et al.*, 2011).

After the research topics have been selected, selection of study designs can be discussed. These will include qualitative, quantitative or combination of both. The quantitative approach such as observational study design (cross sectional, longitudinal, case control study, cohort study) and experimental study design are likely to be used. However qualitative methods, which are more frequently used in medical education research, should also be considered.

The research will be conducted over five years in accordance with the duration of the collaboration project, assuming that one topic per year is likely to be done. It is considered to be more feasible and can achieve optimal outcome. Each medical school was expected to form the research team to work in collaboration to develop the research protocol which will be implemented simultaneously in the three schools. Intensive communications were planned to be held through e-mails, video-conferences or meetings. The result from the three medical schools will be reported together in one publication. These five selected topics however, did not fully represent national issues because they did not include all possible topics from other medical institutions in Indonesia. Ideally, this type of collaborative medical education research needs to be expanded to involve all of medical schools in Indonesia.

## Conclusion

Through a listing and scoring process, collaborative research priorities for three medical schools have been established. The research priorities were set with consideration to availability of resources in the three medical schools and also other factors (national importance, contribution toward academic hospital development and collaboration program). We hope that this list will further lead to national discussion on priorities in medical education research and will serve to enhance research in medical education in Indonesia.

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**Conflicts of interest:** None

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