

The students' view on the relationship of basic clinical skills during preclinical phase with practical in clinical phase

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Abstract

Faculty of Medicine and Health Sciences Syarif Hidayatullah has been trying to make Islamic competent doctors. Basic Clinical Skills (BCS) are part of curriculum that has been taught among medical student since 2005. In preclinical phase, BCS learned at second until sixth semester, and will be practiced during clinical phase. Therefore we want to know the students' view on relationship BCS during preclinical phase with practical in clinic phase. Descriptive study was conducted at FMHS during January until December 2013. After students finished clinical rotation they were asked to fill up questionnaire that comprised their view whether BCS in preclinical phase help their practical in clinical phase. There were nine items questionnaire with Likert Scale of 1-5 (strongly disagree to strongly agree) and open question for comments. Fifty students of 53 students were enrolled in this study. Most of students declared that relationship BCS to practical in clinical phase was fair (3.75). Students expressed that BCS tutor's in preclinical phase less support in practical clinical phase (3.48). Students revealed that procedural skill of BCS didn't effect to their practical in clinical phase (3.62). Highest score were physical examination and communication of BCS (3.90 and 3.83), those helpful for students' practical in clinical phase. Students' view on relationship of BCS in preclinical phase with practical in clinical phase was fair. This study showed necessity to evaluate BCS curriculum in preclinical phase by involving all of stakeholders include BCS tutors and preceptors in teaching hospitals.

Keywords: basic clinical skill; students' view; preclinical phase; clinical phase

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1. Introduction

The main objective of the medical curriculum in the world is to provide medical students with knowledge, skills and attributes required for their practice (Barrow & McKimm, 2009). Faculty of Medicine and Health Sciences (FMHS) Syarif Hidayatullah was founded in 2005 and has implemented curriculum there is problem based learning (PBL) (Anggraini, 2012). FMSH Syarif Hidayatullah has been trying to make Islamic competent doctors with this curriculum. PBL approach in preclinical years to cover Indonesian Medical Council required which called student centered, problem based, integrated, community based, elective, and systematic (SPICES). PBL is essentially a learning system design that incorporates several educational strategies to optimize student center learning outcomes beyond just knowledge acquisition. PBL was implemented almost four decades ago as an alternative pathway to learning in medical University (Schmidt, 1983).

Students learn using clinical scenarios to explore learning objectives through small group discussion (SGD) and self-directed learning (SDL). In PBL system, students discussions led by facilitator. SGD were held 2 to 3 times for one trigger/case. Facilitator is facilitating the learning process of students. Students are presented with clinical information on patients. Medical students go through the process of problem identification, hypothesis, and many others (Wood, 2003). The curriculum at FMHS Syarif Hidayatullah is divided into 2 phases. Pre-clinical phase for six semesters beginning and clinical phase for five next semesters. One part of the PBL curriculum that is implemented in FMHS was Basic Clinical Skills (BCS). BCS has been taught among medical students in FMHS since 2005. In preclinical phase, BCS learned at second until sixth semester, and will be practiced during clinical phase. By BCS, medical students exposed early to the clinical skills (Anggraini, 2012). Since BCS was implementation at 2005, we has never evaluated of the implementation of the BCS. In this study we want to know the students' view on relationship basic clinical skills during preclinical phase with practical in clinical phase

1.1 Learning Context

Early exposure to clinical skills first introduced in 1993 by General medical Council (GMC) publication Tomorrow's Doctors. Many medical school in the UK and the around the World following the recommendations of GMC as many benefits. The Medical School since 1997 implementing a new curriculum with introduction of clinical skills in junior medical students. A Clinical Skills course to allow junior medical students to acquire basic clinical skills. Most teachers use live demonstrations and audio-visual material (often videos and slides) to expound the contents (Lam, 2002). Blackley (2009) said that the implementation of course of skills in preclinical phase appears to be associated with increased confidence and improved student performance in 3rd year clerkship, especially in internal medicine.

Research by Widjyandana at Gadjah Mada University state that implementation of BCS in preclinical phase were had many benefit at clinical phase. Students expressed:

- Having clinical experience earlier
- Practicing interpersonal communication
- Improving confidence
- Improving clinical reasoning
- Motivating to practice clinical skills. The statements expressed the importance of BCS in preclinical phase (Widyandana, 2012).

Research conducted by Remmen in 2001, comparing three university medicines that using traditional

method, compared with one medical university that applies BCS from beginning. This study showed the three traditional medical schools were less effective in attaining outcome of basic clinical skills, and recommended BCS start early and runs through the preclinical period (Remmen, 2001).

In 2005, BCS curriculum in FMHS adapted from medical faculty of university Indonesia. In 2010, a change in mapping BCS, the addition of some skills. In 2012, a change of the curriculum in FMHS Syarif Hidayatullah, so BCS adjusts the curriculum that has been set. Each BCS held for two hours. Simultaneously, BCS training are allocated about 20 hours in six weeks module. It is same with SGD, one group consist of nine to ten students with one tutor (Angraini, 2012).

BCS training such as communication, physical examination, data interpretation and procedural skills among medical students in preclinical phase. BCS was given to medical students in FMHS integrated with modules that were running. For example, in cardiovascular module, which is taught physical examination of heart? Tutors are doctors who have been trained in specific clinical skills. Furthermore, the group will take turn practicing clinical skills in accordance with the schedule. By the time they practice communication and physical examination, they practiced between friends or using a standardized patients or peer. When practicing procedural skills, they use mannequin or tools that has been provide by skill lab. With the implementation of BCS on 2nd semester better skills expected of students at admission in clinical phase. Skills laboratories provide a safe environment for practice and learning processes there in can be well structured (Angraini, 2012).

In International Medical University, BCS given to medical students at the beginning. They introduce communication skills in pre-clinical phase and simultaneous with clinical phase (Remmen, 2001). The tutor BCS are doctors who have been trained previously since 2012. Trained by specialist who is more competent for 1 till 2 hours (Anggreini, 2012). In 2005 till 2012, FMHS Syarif Hidayatullah apply four steps (Peyton's Four Step Approach) in implemented the BCS, which adapted from medical Faculty of Indonesia.

- Demonstration: Trainer demonstrates at normal speed, without commentary.
- Deconstruction: Trainer demonstrates while describing steps.
- Comprehension: Trainer demonstrates while learner describes steps.
- Performance: Learner demonstrates while learner describes steps (Nikendel, 2014).

In 2012, FMHS Syarif Hidayatullah begins implementing the five steps in the BCS:

- Conceptualization: the learner must understand the cognitive elements of skills
- Visualization: the learner must see the skill demonstrated in its entire from beginning to the end.
- Verbalization: the learner must hear a narration of the steps of the skill along with second demonstration
- Practice: the learner having seen the skill, heard narration and repeated narration, now performs the skill
- Correction and reinforcement: skill error need immediate correction, positive reinforcement should be used to good performance (George & Doto, 2001).

In BCS there are three assessments:

- Peer review ; student assess another students
- Self-assessment : student asses himself honestly whether it is competent
- Tutor assessment : tutor assess whether the student has competent or not.

Before the year 2012, BCS schedule were irregular. So since 2012, FMHS made a fixed BCS schedule, Tuesday and Wednesday. Begins in the second week until end of the module. This is BCS schedule in FMSH Syarif Hidayatullah on Table 1 (Angraini, 2012).

Medical schools should implement a clinical skills curriculum that incorporates the developmental nature of learning, including the designation of expected levels of skill performance. Professional skill learning is a developmental process that is continually shaped and refined throughout the physician's career. Cultivation of

skill acquisition in the foundation years of undergraduate medical education results from exposure to sequentially more challenging clinical learning experiences, repeated practice opportunities, observation and feedback based on definable performance outcomes, and self-directed proactive learning (Corbertt, 2008). Pangaro's RIME schema, Miller's Learning Pyramid, and Dreyfus' competency level model are frequently applied in the context of defining skill acquisition in medical education. Pangaro's RIME schema describes the developing clinical role of the learner. Miller's pyramid refers to the type of demonstrated learning, and Dreyfus' model relates to the general level of skill performance show in table 2 (Corbertt, 2008).

Table 1*BCS Schedule*

	Tuesday	Wednesday
08.00-10.00	Second year	Second year
10.00-12.00	First year	First Year
13.00-15.00	Third Year	Third Year

Table 2*Clinical Learning Models*

Pangaro's schema	Miller's Learning Pyramid	Dreyfus' competency
Reporter	Knows	Novice
Interpreter	Knows How	Advanced beginner
Manager	Shows How	Competent
Educator	Does	Proficient
		Expert
		Master

Clinical phase was the phase of medical students interacts with patients. They applied the knowledge, skills and attitude that they had on preclinical phase. In the clinical phase, students will be divided into small groups (Nikendel, 2014). At the College of Medicine and Health Sciences (CM&HS), Sultan Qaboos University (SQU), Sultanate of Oman, the current medical curriculum is two-phased. The 4-year first phase is pre-clinical where students are exposed to integrated, system-based basic medical sciences, after which they attain the BSc degree in Health Sciences. The second phase is clinically-based and lasts for a further 3 years after which they attain the professional MD degree (Holmboe, 2004). In clinical phase, bedside teaching has been an integral part of medical education. With a renewed emphasis on small group interactions, a core element in current education a spring physicians includes real time feedback on their history and physical exam skills at the bedside teaching from seasoned clinician (Cassidy, 2011).

Medical students from FMHS will be held at Fatmawati Hospital as a major teaching hospital. The students will be divided into small group consisted of 9 to 15 students. They will follow the rotation of major or minor. Cisarua hospital, Marzuki Mahdi hospital, and Bekasi Hospital as other teaching hospitals. Minor stage is the phase of students clinic held for 4 weeks. Which include minor stage are psychiatry, neuro, cardio, pulmonary, dermatology, eye/ophthalmology, ear, nose and head (ENT), emergency, and geriatric. Mayor stage is the phase students' clinic held for 10 weeks. Which include major stage are pediatric, internal, surgery, obstetrics and gynecology, family medicine. After the major and minor stage, they will begin elective rotation in the minor and major stage, they are teaches by preceptors or residents. Almost all stage was implemented bedside teaching (Anggraini, 2012). Since BCS was implementation at 2005, we has never evaluated of the implementation of the BCS. In this study we want to know the students' view on relationship basic clinical skills during preclinical phase with practical in clinical phase.

2. Methods

Descriptive study was conducted at FMHS during January until December 2013. In total this study involved

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53 students finished clinical rotation they were asked to filled up questionnaire that comprised their view whether BCS in preclinical phase help their practical in clinical phase. Unfortunately we excluded three students because they didn't send back their questionnaire to us or the data was incomplete.

On February 2013 we obtained 30 questionnaires, on May 2013 we obtained 11 questionnaires, on August 2013 we obtained eight questionnaires and on November we obtained only one questionnaire. All students have passed the same selection process, admission policy and entrance examination. There were nine items questionnaire with Likert Scale of 1-5 (strongly disagree to strongly agree) and open question for comments.

Table 3

Questionnaire about the Students' View on Relationship Basic Clinical Skills During Preclinical Phase with Practical in Clinical Phase

No	Questionnaire Items
Q1	BCS curriculum helps you during clinical phase
Q2	Preclinical phase curriculum helps you to during clinical phase
Q3	Communication skills stations help you during clinical phase
Q4	Physical examination skills stations help you during clinical phase
Q5	Procedural skills stations help you during clinical phase
Q6	Regular OSCE helps you during clinical phase
Q7	OSCE comprehensive helps you during clinical phase
Q8	BCS facilities help you during clinical phase
Q9	BCS tutors helps you during clinical phase

This study used quantitative approaches. For quantitative approach we did descriptive study. As further analysis, to find the interaction between factors of questionnaire items (Q1 until Q9 and mean total scores) shows on table 3 and students' gender, also the interaction between factors of questionnaire items and type of assessment (formative and summative), those factors were incorporated into one way ANOVA. Statistical analysis was performed with SPSS 21.0. P value of less than 0.05 was considered significant.

3. Results

The subject of this study was the class of 2007. In this study, there were 50 students enrolled in the full study. Three students, dropout in this research. There are 14 male students, and 36 female students show on table 4.

Table 4

Subject Characteristics

Characteristic Subject	Total/ %
Sex	
A. Male	14 (28%)
B. Female	36 (72%)
Graduation Period	
A. Formative Assessment National OSCE	
1. February	30 (60%)
2. May	11 (22%)
B. Summative Assessment National OSCE	
1. August	8 (16%)
2. November	1 (2 %)

This study divides two large groups. Students who graduated on the February and May are that it is considered a formative assessment National OSCE. While students who graduated August and November, it is expressed a summative National OSCE. This study showed in table 5, that's the students' view on relationship basic clinical skills during preclinical phase with practical in clinical phase was fair (3.72 ± 0.41). Students expressed a physical examination and communication training in preclinical were higher score (3.90 ± 0.61 and

3.84±0.64). Students said that was most support is BCS tutor (3.48± 0.83).

Table 5

Questionnaire Items and Mean (SD) of Item Scores

	Questionnaire Items	Mean Scores (n=50)
Q1	BCS curriculum	3.68 (0.71)
Q2	Preclinical phase curriculum	3.68 (0.71)
Q3	Communication skills training	3.84 (0.64)
Q4	Physical examination skills training	3.90 (0.61)
Q5	Procedural skills training	3.62 (0.72)
Q6	Regular OSCE	3.80 (0.66)
Q7	OSCE comprehensive	3.82 (0.59)
Q8	BCS facilities	3.70 (0.78)
Q9	BCS tutors	3.48 (0.83)
	Average of mean scores	3.72 (0.41)

Using one way ANOVA we analyzed questionnaire items and students' gender and type of assessment national OSCE. Table 6 shows that based on gender no significant, students who underwent the formative national OSCE were able to differentiate their ratings than students who underwent the summative national OSCE in some areas: BCS facilities (Q8), and BCS tutors (Q9).

Table 6

Students' Gender and Type of Assessment National OSCE

	Questionnaire Items	Gender (p)	Type of Assessment (p)
Q1	BCS curriculum	0.70	0.28
Q2	Preclinical phase curriculum	0.76	0.28
Q3	Communication skills training	0.23	0.43
Q4	Physical examination skills training	0.37	0.50
Q5	Procedural skills training	0.71	0.77
Q6	Regular OSCE	0.68	0.23
Q7	OSCE comprehensive	0.36	0.82
Q8	BCS facilities	0.86	0.04*
Q9	BCS tutors	0.51	0.02*
	Average of mean scores	0.85	0.05

Note. *significantly difference using one way ANOVA

4. Discussions

Subjects in this study were the class of 2007. The class consists of 64 students, 39 female students and 25 male students. Almost in most of the faculty of medicine, the medical students are female. Students who graduated in February and May are the first and the second graduated on the class of 2007 to become a doctor. At that time, the national OSCE is still used as a formative.

The results showed that in general the students' view on relationship basic clinical skills during preclinical phase with practical in clinical phase was fair. Class of 2007, is the third generation of FMHS Syarif Hidayatullah. FMHS Syarif Hidayatullah is a medical faculty which is very young at the time. There is still lack at the time such as: insufficient number of tutors, still lack competent sources, still rarely same perception between tutor, lack of facilities, and many others. This study said the lowest points are less support from BCS tutor during the clinical phase. In that time, insufficient number of tutors, still lack competent sources, still rarely same perception between tutors. Preparation tutor in BCS affect implementation BCS' students.

The tutors are the teacher for medical students. The education of teachers is not completed with pre-service preparation. New teachers are still learning to teach in the context of teaching, and good teachers continue to grow professionally throughout their careers. Each of these phases of a teacher's career can and should be

supported through the creation of structures, learning opportunities, and incentives, all within a culture of collegiality and a professional learning community. Teaching practice develops over time. Feiman-Nemser has identified critical tasks in learning to teach for each phase of formal teacher education from initial preparation to new teacher induction to continuing professional development. Some of the critical tasks during initial preparation include developing a defensible vision of good teaching, acquiring deep and flexible subject matter knowledge for teaching, learning about learners and learning, including the influence of culture, developing a beginning pedagogical repertoire, and cultivating the skills and dispositions to reflect on one's teaching.

In this study, the students said that BCS curriculum and preclinical curriculum were not helpful during clinical phase. Actually FMHS already made improvement to BCS system like a change in curriculum mapping BCS in 2010. In 2012, a change of the curriculum in FMHS Syarif Hidayatullah, so BCS adjusts the curriculum that has been set. Hopefully with BCS and curriculum mapping changes, the next generation had a better clinical phase. Communication skills and physical examination in BCS were helpful in clinical phase. When tutors apply the five steps in the BCS, communication and physical examination skills students will be better in clinical phase. In the communication and physical examination skills in FMHS Syarif Hidayatullah using simulated patient or peer.

Strength: Since 2005, we've never done research the students' view on relationship basic clinical skills during preclinical phase with practical in clinical phase Weakness: small sample, recall bias because students have to remember their BCS training experiences when in the preclinical phase, about 3-5 years before.

5. Conclusions

Students' view on relationship of BCS in preclinical phase with practical in clinical phase was fair. This study showed necessity to evaluate BCS curriculum in preclinical phase by involving all of stakeholders includes BCS tutors and preceptors in teaching hospitals. Further studies are needed towards the students' views on having experienced a change toward the BCS system.

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