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ABSTRACT

Medical schools worldwide are promoting a student-centered and patient-centered care curriculum by using problem-based learning (PBL) strategy, emphasizing group dynamics and discussions. This approach facilitates student engagement, participation, and partnership interaction. However, in the context of the wide power-distance or the existence of socio-hierarchical gaps in Indonesia, two-way dialogue is limited. Few studies describe the one-way paternalistic communication styles between physician-patient, teacher-student, and parents-children, which can lead to less effective learning and healthcare environments. In this study, we investigated if students in an Indonesian medical school, who have been learning and practicing a partnership style of communication in a PBL curriculum for three years, are using the same style of communication with their junior peers outside the classroom. We examined the communication style between senior and new medical students, using surveys, observations, and focus group discussions, during a three-day orientation at the beginning of medical education. The results indicated that senior students used a one-sided communication style with their juniors, whereas new students expressed the need for egalitarian interaction with seniors. A classic dilemma of nature versus nurture was found and discussed. To change the traditional values, robust, constructive, and systematic formative training is key.

Keywords: intercultural communication skills, student-centered learning, patient-centered care, problem-based learning, partnership communication style

Introduction

In the well-known social-learning theory from Bandura (1986), the "reciprocal causation model," the environment influences learning, persons, and behaviors. Based on Bandura's theory, learning happens through two different processes: (1) through imitating others based on daily activities and is therefore influenced by the habits and cultural environment; and (2) through formal training, using continuous observations, structured guidance, feedback, and metacognitive thinking. Consequently, the transfer of formal learning is likely to be challenged by the imitation learning that is naturally acquired from being continuously exposed to the same learning environment (including habits and culture). In this study setting, changing the typical one-way communication style in the context of wide power-distance or socio-hierarchical culture into better forms of dialogue needs a robust, constructive, formative, and systematic curriculum that stimulates students' motivation through continuous self-reflection and action planning towards meaningful learning.

A problem-based learning (PBL) curriculum can enhance the metacognition, motivation, and intrinsic value of learners. The formative forms of learning should be intensively stressed to promote motivation towards self-regulated learning (Sandars & Cleary, 2011; English & Kitsantas, 2013). The self-determination theory is the basis for continuous support to student-motivation in PBL, utilizing the motivation continuum from external to internal motivation (Ryan & Deci, 2000). There are three main motivation variables that can be influenced: (1) autonomy, (2) competency, and (3) relatedness (Kusurkar et al., 2011). As an example, in a student-centered tutorial program of a PBL curriculum, there are problem scenarios for learning, clear steps of discussions, ample time for independent learning, and skills of facilitating learning from teachers. Stimulating students' autonomy can be done by encouraging students to define their learning

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problems. Letting the students report their knowledge-gain via self-study and information searching, which requires self-efficacy in learning, will arouse students' responsibility as part of the competency. Also, fostering students' relatedness can be done by assisting active discussions and interaction on a contextual basis. The overall process of facilitating tutorial sessions are formative, which mostly occur in the forms of observation, guidance, and constructive feedback.

In this longitudinal process of a PBL curriculum, interactions between teachers and students and between students and their peers should ideally be gradually enhanced. Small group discussions and partnership communications are reinforced in order to enable student-centered learning with more participative approaches. Consequently, medical training in this circumstance is also strengthened and oriented toward partnership communication skills (Kurtz et al., 2017).

A closer examination of this study setting, though, raises some doubt whether student exposure to interactive small group discussions within a PBL curriculum will directly result in the transfer of more partnership communication skills. Ideally, the more partnership interaction in a PBL program, the more egalitarian communication with the students' teachers, patients/simulated patients, and peers. Fundamentally, current medical research reveals a single underlying phenomenon that is at least partially responsible for the typical one-way communication style in Indonesia. The existence of wide power-distance or gaps in socio-hierarchical relationships, as described by Hofstede (2011), is characterized by a one-way communication style as opposed to egalitarian partnerships with two-way dialogue and appears to undermine the overall relationship and business in the society in a variety of ways. In this study, operationally we used the terms egalitarian and partnership interchangeably to represent the non-hierarchical form of interaction (characterized by two-way communication style), whereas the terms wide power-distance and socio-hierarchical gap were used to represent the hierarchical form of interaction (characterized by one-way communication style).

In the Southeast Asian health care context, few studies recognized the wide power-distance dimension that is represented in the daily one-way communication style between health care provider and patients (Claramita et al., 2013; Susilo et al., 2013., McKinn, et al., 2017) and between clinical teachers and students (Nugraheny et al., 2016; Kunanitthaworn et al., 2018; Suhoyo et al., 2017). This wide social gap in the relationship in this context is counterproductive to the partnership model endorsed in a PBL curriculum. In settings where faculty-student relationships are hierarchical, students often become intellectually passive, expecting answers from their teachers (Frambach et al., 2012). The learning process relies heavily on teachers, so the self-regulated learning is hampered by hierarchical relationships between students and faculty.

In Indonesia, although a strong concept of student-centered learning exists and has been promoted since the early 1930s, as evidenced by the national education's philosophy of *Tut Wuri Handayani* or "let the students lead the way" (Tauchid et al., 1962), the concept has been inadequately incorporated into the curricula and has remained merely a motto in this traditionally fundamentally hierarchical setting (McVey, 1967). The one-way communication patterns that are also a typical characteristic of the relationships and interactions between parents and children in Indonesia was found in a phenomenal anthropology study, half of a century ago, which interpreted Javanese culture through the prevalent paternalistic patterns of decorum (Geertz, 1976). Some other studies from non-western contexts have shown that similar hierarchical culture can be an important determinant regarding the success of the more interactive student-centered learning approaches and the practice of partnership-based communication models (Chng et al., 2011; Kho, 2003; Moore, 2008; Major & Mulvihill, 2017; McKinn et al., 2017).

Nevertheless, there is limited evidence that Southeast Asian patients are becoming less passive and more willing to articulate their expectations regarding medical care, in spite of the wide gap of the socio-cultural hierarchy (McKinn et al., 2017; Claramita et al., 2013; Kim et al., 2003). This change in patient communication style requires that doctors should be able to respond to their patients' needs appropriately. To better understand these concerns, doctors should become knowledgeable and sensitive about the cultural characteristics of the society they serve, and this should be done through constructive and systematic training.

In light of the potentially detrimental consequences of hierarchical relationships, especially within medical education and practice, studies of communication style or interactions between doctor-patient, teacher-student, and parents-children have been reported from this study setting, but are very limited, as explained above. Studies about peer-to-peer communication and interaction are rarely found. Peer-learning has been demonstrated to create better educational exchange via a more effective learning environment by continuous reciprocity of communication and modelling between the peers (Glynn et al., 2006; English & Kitsantas, 2013; Burgess et al., 2014). Therefore, in a PBL curriculum that promotes student-centered learning and partnership relationships within the classroom, it is worthwhile to investigate whether senior students will tend to communicate and form partnership relationships with their peers who are at less advanced learning stages. From the peer-to-peer interaction, we hope students will later develop more egalitarian

partnership relationships with their co-providers and furthermore patients, in the clinical education years, towards the quality of medical care.

The learning process, from training to real-life situations, is known as transfer of training (Rotthoff et al., 2011). The transfer of training in communication skills to the actual practice of communication is a well-studied phenomenon. A successful transfer from training to practice is the result of learners synthesizing learned skills with their interpretations of the world based on individual experiences and interactions (Eertwegh et al., 2013). PBL curriculum should promote deeper self-reflection and metacognitive skills for students to be able to transfer the learning process into reality.

To learn about the transfer effect of intended partnership interaction in a PBL curriculum within an Indonesian medical school, we explored a fundamental question: "Will senior students, after experiencing three years serial small group interactions and partnership communication skills training in a PBL curriculum, communicate in a two-way style with their junior peers outside the classroom?"

Context of this study

To answer the problem formulation, we studied the communication patterns between new and senior medical students during the three-day orientation program in an Indonesian medical school. The orientation program, in general, was constructed as follows: 1) faculty, alumni, and facilities orientation, 2) academic orientation, 3) a student council orientation, and 4) a specific session, called a mentoring session, with senior students to explore and discuss challenges, encourage resilience, and reflect on living experiences during medical school years. This study focused on the communication style during the mentoring session, where it was hoped that senior students would have a dialogue with the new students and start an exploration based on the new students' needs. The other two sessions in the orientation program were delivered by the faculty members and the other one by the senior students, whereas the mentoring session had specific goals to help new students find solutions for their concerns and problems and create action plans for their learning program. All the sessions were intended to support the transitions and adaptations of the new students into medical schools. Some sessions could be more informative, but the last sessions were intended to be more interactive and engaging.

Generally, there are many opportunities for senior and junior students to interact, for example, during the assistance of a practical session in a laboratory, or during an extra-curricular (i.e., basketball, hiking, photography clubs), or in a dormitory. However, those interactions are challenging to observe and usually involve only a few students. Moreover, for the last five years, the Indonesian government in all universities has been campaigning for egalitarian peer-to-peer interaction in the orientation program (compared to the traditional university orientation, which is far from a supportive environment) (Universitas Gadjah Mada, 2016). The campaign was based on a concern that all higher education students share similar ages within adolescence, which consequently involve many similar life and academic issues. In this way, the senior students joining an orientation committee are already experienced in partnership communication training and have been briefed beforehand to be engaging facilitators for their junior peers. The national message was to avoid bullying in the young generation.

Almost all medical schools and universities in Indonesia have an orientation program for their new students, which usually lasts 3-5 days. The selected medical school in this study is the oldest medical school established by the Government of Indonesia in 1949, and regarded as the top-ranked institution, which has pioneered the use of PBL since the 1980s. In the earlier years, the curriculum was called the Hybrid PBL. Traditional lectures and few tutorial sessions were mixed. Started in 2003, this institution implemented the full PBL curriculum using a system-based approach (i.e., respiratory system, cardiovascular system, etc.). The integrated multidiscipline micro curriculum of 22 blocks is disseminated in a four-year undergraduate medical student curriculum. The clinical clerkship still follows a traditional-based clinical rotation. There is no rotation in general practice and no general practice/family medicine specialist training during the period in which this study was conducted. Graduates of the 6-year medical education can directly practice in the community after a 1-year internship/housemanship, which mostly are in hospitals. In 2010, an updated communication skills training curriculum for undergraduate presently includes partnership principles, from simple to complex skills: building relationships—year 1, exploration on patients' perspective—year 2, informed and shared decision-making—year 3, and challenging conversations—year 4 (Prabandari et al., 2010). The training was developed in line with the blocks and designed to maintain dialogue between participants in a progressive series of feedback and reflection sessions with peers or simulated patients. Based on the approach, active listening skills are emphasized, teaching students to actively listen, talk less, and gain more information (Kurtz et al., 2017). We train the students to provide information, which should be done after adequate listening without interruption, and involves a two-way dialogue based on information-sharing and mutual decision-making with patients.

Methods

Design

We used an explanatory sequential mixed methods design (Creswell, 2014). The data were mainly obtained through quantitative measurement of the data and followed by qualitative exploration based on the results of the quantitative data. In this study, quantitative data were collected by research assistants via measurement of senior-junior interaction during the mentoring sessions. This study started with the assistants recording the "speech event/length of speech" between senior and junior medical students quantitatively. This observation was followed with the distribution of simple questionnaires, which included closed questions (for both new and senior students), and open items for only new students. Finally, the qualitative methods involved focus group discussions with senior students. This mixed-method approach allows triangulation of data to increase trustworthiness of the results.

Subjects

Measurements of the "speech event/length of speech" were done by the first author and two research assistants involving a total of 30 groups of new students during a 30-minute mentoring session on the second day of the orientation program—each group consisting of 10 new students and two senior students as facilitators. The total number of facilitators was 60, half of the total number of the students joining committee members of the orientation program. At the end of the orientation program, questionnaires were distributed to 300 new students and to all 120 senior students who were on the committee. The first focus group discussion was conducted one week after the orientation program ended, with a total of 7 senior students, based on the optimum number of focus group participants (Creswell, 2014). We selected the student coordinators who were representing the seven subdivisions of the orientation program committee to join the FGD. The second and third focus group discussions followed in the second week after the end of the orientation program.

Instrument

The 30-minute measurements of quantitative "speech event/length of speech" were guided by two questions: "Who is speaking and for how long?" The questionnaire that was distributed to new and senior students (in a close-ended question) asked the following: "Who do you think between new and senior students determined the learning activities during the current orientation program?" The purpose of this question was to clarify the self-directed learning process, which is implemented outside the classroom context. The formulation of the learning goals is ideally by the student themselves, instead of the teachers or facilitators in a PBL curriculum (Sandars & Cleary, 2011). New students were asked to consider the following prompt (in an open-ended question): "Write one short sentence that reflects your needs as a learner in early medical education." The same purpose of self-reflection and planning also applied to this question.

Procedures

The measurements of quantitative "speech event/length of speech" were done during the orientation program when there was a session in which the authors could observe a large number of interactions between junior and senior students. The distribution of questionnaires was done immediately after the orientation program ended to get fresh impressions and opinions from the students based on their experiences during the orientation program. The questionnaires for the new students and senior students were distributed separately, early in the morning, before their first lecture was conducted.

Ultimately, the focus group discussions were done one week after all quantitative data were analyzed. The authors collectively conducted three focus group discussions, each of which was conducted in less than one hour within two weeks following the orientations. Focus group discussion is a tool of qualitative methods to explore opinions in group discussions which are conducted by a facilitator, for 30-40 minutes each round, with a small number of participants (6 to 12), and should be replicated more than once, until the data is saturated (Creswell, 2014). A number of questions in a focus group discussion may vary but usually includes between 1 to 3 questions to maximize the opinions of the participants. All focus group discussions were recorded and transcribed within 48 hours following the discussions.

Methods of Analysis

A descriptive analysis and t-tests of independent samples were conducted to analyze the quantitative data of the "speech event/length of speech" and the results of questionnaires. Significance was set at $p < 0.05$. Serial coding processes for focus group discussion transcripts were conducted for the qualitative data, by all authors, four times in four weeks, until all authors approved an agreement on the overall interpretation of data.

Findings

The results from the quantitative measurement showed that senior students significantly performed most of the "speech event/length of speech" during the mentoring sessions of the orientation program. Length of speech ranged from 254 to 988 seconds, with a mean of 589.6 seconds and a standard

deviation of 82.25 seconds. The new students' duration of speech ranged from 3 to 98 seconds, with a mean of 28.7 seconds and a standard deviation of 12.11. The independent t-test results revealed a statistically significant difference in the length of speech between the senior and new students ($p < 0.05$).

Another quantitative result from the questionnaires revealed that the response rate was 78% for the new students and 75.8% for the senior students. We found that most of the new and senior students noted that the senior students were the ones who determined the learning activities during the orientation program, rather than the new students determining their own learning activities, as indicated in Table 1.

Table 1. Answers of new and senior students on this question: "Who among the two (new or senior students) determined the learning activities of the overall orientation program?"

Option of answers	Subjects and their answers	
	New Students (N=234)	Senior Students (N=91)
New students	14	8
Senior students	197	82

A total of 104 new students reflected on their learning plan. In total, 113 students expressed their need to interact with senior students and teachers, and 62 students expressed a need for good exemplary educational programs. Only one of the new students described the need for interaction with the community and patients. Table 2 shows the findings reflecting new students' learning goals and their needs for interaction and institutional provisions of education. These results are further discussed, together with other findings, in the following sections.

Based on the results of these quantitative data, we moved to the qualitative analysis. At the beginning of the focus group discussions series, we showed the results of the quantitative data to the senior students, who were surprised by the results of Table 1. During the second focus group discussion, senior students responded in high intonations about how they take care of the juniors by giving them information and tasks. Eventually, after the third focus group discussion, they realized upon reflection that the orientation program is a way to show seniority. Therefore, facilitating learning and egalitarian communication was not practiced (Table 3). When confronted with a question about reflecting on the orientation program with the tutorial program they had for the last three years, most of the senior students understood that the role of the tutor is to facilitate learning. Therefore, they should have a dialogue with their junior peers rather than telling them what to do. At the beginning of the focus group discussions, none of the students realized that such a spirit should be presented during the orientation program. Few students realized in the last session of the focus group discussions that they could be a better facilitator for the junior peers and that the senior students should model such facilitating skills as they have experienced with their tutors.

Discussion of the findings

Ideally, the "mentoring session" in the orientation program for the new students in this study provides an excellent opportunity for the senior students to become models of partnership communication skills—skills that they should have gained during three years of small group discussions in a PBL curriculum and intensive partnership communication skills training. However, in this study, we found that senior students largely monopolized interactions in the

Table 2. Reflections of the new students on their learning needs

Grouped answers	Frequency	Example of statements
1. Dealing with oneself	104	"I need to maintain regularity in learning."
2. Interaction with senior students	59	"I need to interact with senior students; they can help me with the adaptation process."
3. Interaction with teachers	54	"I need to interact with my teachers; they can help me with the adaptation process."
4. Exemplary curriculum, programs and facilities	62	"I need good curriculum, programs and facilities."
5. Interaction with patients/ community	1	"I need to interact with the community and patients to learn medicine."

Table 3. Senior students' responses to three questions of FGDs.

	Questions	Senior students' responses
(1)	For whom do you think the orientation program was meant?	"Of course the orientation program was meant for both new students and senior students because we interact together." (Senior student1).
	Probing: Why do you think of that?	"For the new students to have sufficient orientation about medical education that they will going through. For the senior students… (thinking)….to learn how to work together as a committee." (FGD 1)
(2)	(Based on the results of the observation study and quantitative study)	"The last year orientation program was awful. But when I joined this year's orientation program as a committee member, I think new students are happier than us before, because we really tried hard for this program to be successful…Why did the new students say that they did not have much contribution?! I don't agree. New students did all the tasks we instructed them to do!" (high intonation)…" (FGD 2)
	(2a.) Why do you think that most of the new and senior students mentioned that senior students were the ones who determined the learning activities during the orientation program instead of the new students?	
	Probing: Why do you (senior students) look very enthusiastic when you appeared in front of the new students?	"Why did the senior students look more enthusiastic than the new students during orientation program?! (high intonation)…Well… because we were really taking care of our juniors. We want to explain everything to them, we want to shape them in the way we think is best for them. Yeah (turning down intonation)…to be honest, this is how we show our seniority." (FGD 3) "
	What do you feel?	"Well, actually there is a minimum relationship between senior students and new students after the orientation program ends." (FGD 3)
	(2b) How did the orientation program connect with your experience of tutorial sessions during the last three years of the medical curricula?	"Well…PBL is tutorial, independent learning. A tutor is a facilitator… the connection between PBL and the orientation program?! What? Why? ...Oh! …(after couple of minutes of thinking)… So that is why new students said that their contribution was minimum during orientation program because we, the senior students, should be their facilitators instead of telling them what to do." (FGD 3)

orientation program, using a more one-way communication style. Interestingly, many new students expressed the need for more egalitarian two-way dialogue with their seniors and teachers to help them with the adaptation situation of a PBL curriculum. Reflecting this particular result among the characterization of Generation Z (people who were born from 1995-2012), they need more dialogue, and regularly communicate technologically since they are digitally native (Eckleberry-Hunt et al., 2018). All students in this study are included in early Generation Z or late Millennial Generation. However, although all students are coming from the same generation, it is interesting that the senior students have difficulty in using the partnership communication techniques and failed to transfer their training from the classroom to interactions with their junior peers, who are only 2-3 years younger. So, not only was the formal training (the partnership communication skills training during the three-year PBL program) still far from useful, the senior students seemed to disregard the natural characterization of a generation that demands intensive dialogues, and chose to perform like most Indonesians, by practicing a traditional one-way paternalistic communication. Previous research has demonstrated that Indonesian interactions between doctors and patients are characterized by hierarchical relationships, a fact made particularly evident by the one-way communication that dominates such relationships (Claramita et al., 2013). This study from the same setting reports similar findings but involves peer-to-peer interactions between students in a medical school.

Bandura (2002) used the images of the "tight leash" and "loose leash" of nature. Therefore, in a society that holds tight paternalistic control of the culture using mainly one-way communication between people, the training should also be highly structured, in contrast to the "nature" culture. Student

development of self-regulated learning can be enhanced by the gradual transition of "problem- to project-based" learning to facilitate intrinsic motivation to learn, planning appropriate action, self-monitoring, and self-reflection (English & Kitsantas, 2013). In order to have successful training in this context of the study, we need to have effectively structured strategies of PBL curriculum, which actively engage students in creating personal learning reflections with self-initiated action plans, based on information and feedback (Frambach et al., 2012, Kusurkar et al., 2012). This approach can facilitate the students to make a shift from their culturally influenced one-sided communication style to become self-regulated learners, who can demonstrate meta-cognitive thinking and dialogue with active listening skills while maintaining cultural sensitivity. Along with curriculum enhancement, faculty development programs regarding constructive facilitation towards student-centered learning should be reinforced through institutional supports.

Implications

Peer-to-peer interaction may seem simple in daily chats, which are often underestimated. However, in the setting of clinical workplace-based learning, paternalistic communication style habits can seriously impact patients' health outcomes and safety (Susilo et al., 2013). This study could be replicated in a postgraduate program of medical residency in the same cultural context, to better identify even more interesting phenomena of communication style in regards to the health outcomes and patient safety.

Nonetheless, the predominance of hierarchical relationships in medicine, as well as the deep-rooted problems caused by this kind of well-established phenomenon warrants an increased focus on ways to minimize the prevalence and impact of hierarchy. This need is further underscored by the fact that only one among the new students stated the need to interact with patients and the community in order to better understand the practice of medicine. Most new students were focused on their medical environment (the seniors, the teachers, and the faculty programs) instead of thinking about assisting and interacting with future patients as the primary insights of the study presented here.

In light of our findings, we have several recommendations regarding modifications to the student-centered learning curriculum that may enhance the transfer of partnership interaction outside the classroom. Global recommendations for twenty-first century education emphasize the acquisition of "soft skills" (i.e., critical thinking, reflection, metacognition, communication skills, collaboration, and leadership) towards the mastery of the cognitive, intrapersonal, and interpersonal domains (Pellegrino & Hilton, 2012). Formative training with constructive feedback is fundamental to encourage the transfer of abilities by providing students with opportunities to reflect on critical insights learned from the PBL program and communication skills training. There is clear evidence that reflection helps students to integrate new information and learning experiences within existing cognitive structures. Consequently, being a reflective doctor may be the key to providing quality care (Driessen et al., 2003). Minimal reflection in this study may be a partial cause of senior students failing to apply insights gained from PBL toward more balanced interaction and egalitarian communication with junior peers. It is recommended to pilot test communication skill transfer from PBL training to senior-junior peer communication in programs that place more emphasis on student reflection concerning communication challenges. The partnership communication skills training should be more productive by reinforcing and facilitating the faculty for dialogical interactions of small group discussions in the PBL curriculum, to minimize the effect of the socio-cultural gap with their students, as represented in the general Asian society.

There is further hope that within a student-centered curriculum, learning can be enhanced by implementing workplace-based learning in the primary care setting. Early exposure to primary health care problems is proven to promote the socio-behavioral abilities of medical students, including forming stronger professional partnerships and communicating in a more dialogical and egalitarian manner (Art et al., 2007). Learning in primary care can be better led by general practice specialist expertise.

We conclude our discussion by considering a brief vignette from Indonesian history. Dewantara, the first Minister of Education and Culture, who was a Javanese prince that grew up in the early twentieth century, had an interest in student-centered learning principles (Tauchid et al., 1962). As an example of his humility, he changed his royal family name into a lay person-name in order to dissolve social hierarchy. Dewantara described facilitating learning as "*Tut Wuri Handayani,*" which continues to be used to this day as the formal motto and symbol of the Republic Indonesia, Ministry of Education and Culture (https://www.kemdikbud.go.id/):

> "Teachers should let the students lead and by extra attention to help the students to reflect on their mistakes. We accompany them from a distance to achieve their utmost potentials – Tut Wuri Handayani" (Dewantara, 1938 as cited in Tauchid et al., 1962).

This historical episode is indicative of the extent to which hierarchy is entrenched in the Southeast Asian culture. We should not expect any easy solutions either within medical culture nor, more generally, in Asian culture as a whole.

Nonetheless, there is at least some hope that, where hierarchical relationships can become enduring partnerships, the benefits will be both significant and widespread. Worldwide, many medical curricula have successfully implemented PBL models with a variety of approaches; in the future, we hope that they are equally successful in Indonesia by emphasizing self-directed student learning that is independent of the traditional hierarchy.

Suggestions for further studies

Further research is needed to determine the extent to which transfer failure of PBL communication skills is actually a consequence of cultural factors. We recommend that a similar study be conducted in a culture with less strongly embedded hierarchical practices and lower power-distance indices.

Finally, when looking for methods to ameliorate the detrimental effects of hierarchical relationships, it is important that we do not also adopt a quasi-hierarchical framework. Our study focused on how the training of senior students, who are in the dominant position in the hierarchical relationship, influenced their interactions with their junior peers. If further research regarding the transfer of communication skills continues to produce less than promising results, it may be worthwhile to tackle the problem from the other side of the relationship, e.g., offering training to those in less privileged levels of the hierarchy in an effort to improve egalitarian communication.

Conclusions

Challenges abound in the field of medicine and medical education, especially when working to improve the quality of healthcare and patient outcomes. The process of transferring communication skills gained from a PBL curriculum into real life is indeed a challenge for the students as well as the teachers in this study. To create effective lessons on partnership communication for medical students and to enhance the transfer of learning, a strong curriculum and faculty development program is needed that emphasizes formative training. The priority is providing supports for students' metacognition, deep reflection, and planning the actions for further learning.

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Ethical Clearance

This study was part of evaluation research of Problem Based Learning program at the Faculty of Medicine UGM, Yogyakarta, Indonesia, 2010-2014 NPT Project Universitas Gadjah Mada-University of Maastricht and was approved by the Commission of Ethics at UGM.

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