CHALLANGES IN PROBLEM BASED LEARNING IMPLIMENTATION IN DEBREBERHAN UNIVERSITY, COLLEGE OF MEDICINE, DEBREBIRHAN, ETHIOPIA

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Signed by the examining committee

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ABSTRACT

***Background**:* Ethiopia's Federal Ministry of Health (FMOH), in collaboration of Federal Ministry of Education (FMOE) and other partners, has developed strategies to address health workforce challenges by introducing the Medical Education Initiatives (MEI).The new medical education curriculum adopts alternative teaching and learning strategies that helps student to become self directed learners and guidance in clinical decision making process.

Learning in problem based learning (PBL) schools, is based on integration of subjects and disciplines throughout the program. FMOH expand higher education by opening 13 new medical schools that all schools use PBL as one of the teaching methodology since 2011. However many of the newly opened schools faces significant challenges including shortage of qualified instructor and educators, lack of infrastructure and a lack of learning resources for implementing PBL. DebreBerhan medical school is also among those medical schools that face similar challenges. The management of such a curriculum becomes vital to the delivery of this program.

***Objectives*:** The aim of this study is to explore challenges and strength in PBL implementation in a new PBL based medical School, DebreBerhan University College of medicine from the side of student, tutor and administrative body. The Identified factors would be used to guide implementation of PBL in the medical education system in DebreBerhan university medical school and for other schools that use PBL.

***Methods**: Explorative descriptive study design* to implementation of the curriculum using semi-structured interview questionnaire for tutor and administrative body (dean), focus group discussion for students. Purposive samplings were employed to select the participants. Interviews and focus group discussion was recorded by tape-recorder Data was analyzed by transcribed and coded and categorized into five themes by research assistant and the researcher manually.

Conclusion: The delivery of a Problem-based Learning curriculum in a newly established medical school requires a centralized management structure. Commitment to the philosophy

of PBL to a realistic acceptance of a role change needed for the effectiveness of PBL implementation and facilitation by academic staff. The major challenges, which were identified, are tutors are not committed, no standardized cases preparation, no strong management system, which recognize the input of staff. In addition, poor assessment system and students coming from different disciplines was the main challenge for the students as well as for the tutors.

Recommendation: Tutors who participate in PBL should be rewarded by giving recognition for writing problem scenarios and for small group teaching, just as they would be for lecturing. In addition, tutors should get continuances capacity building training about PBL and how to facilitate small group discussions. Faculty should create a forum/workshop/ for facilitators to discuss PBL issues as they arise. Assessment of students and evaluation of teaching must be made appropriate. There should be PBL case committee from different subject experts, as well its own responsible coordinator to see its effective implementation.

Key words: PBL, DebreBerhan, qualitative study, challenges

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ACHRONYM AND ABBREVATION

PBL	Problem Based Learning
FMOH	Federal Ministry of Health
FMOE	Federal Ministry of Education
WHO	World Health Organization
NMEI	New Medical Education Innovation
MEI	Medical Education Initiative
DUMC	DebreBerhan University Medical College

1. INTRODUCTION

1.1. BACKGROUND

It has been half a century since medical education started in Ethiopia[1], but it practices the old curriculum still now. However, in 2011 the FMOH (Federal Ministry of Health) in collaboration of FMOE (Federal Ministry of Education) 13 new medical schools are opened those use PBL as one of the teaching methodology in the integrated curriculum. [1] Faculty of Medicine at DebreBerhan University is one of NMEI (New Medical Education Initiative) Schools, which adopts PBL as a basis for the educational process of medical students since 2011. The total duration of the course is four and half years and students who enter in this school are those who have first degree in health science and Natural science fields [1].
Teaching and learning in the first half of the program (preclinical year 1 and 2) uses a PBL-based structure, where each week, students are given one case of PBL with learning objectives. The cases for PBL are written in the curriculum [1].

"The learning process now needs to be increasingly based on the capacity to find and access knowledge and to apply it in problem solving. Learning to learn, learning to transform information into new knowledge, and learning to translate new knowledge into applications become more important than memorizing specific information [2].

Problem-based learning (PBL) is a learner-centred instructional format requiring students to participate actively in their own learning by researching and working through a series of real-life problems to arrive at a best solution [3].

PBL was first designed for medical students at McMaster University based on the gaps of conventional medical training. However, in time, some other medical schools around the world began to adapt PBL [4].

PBL has been reported to be a valuable learning method in which students encounter a problem and this is followed by a student centered inquiry; PBL is enjoyable and fun for both students and staff [5].Problem based learning has long been believed as to motivate medical students, develop clinical reasoning, structure knowledge in clinical contexts and developing self-learning skills [6].

Curriculums in PBL in fact showed little effect as an important improvement factor of students learning outcomes, but helped students by enhancing learning environment [7]. On comparing course related stressors in undergraduate PBL versus non PBL medical programs, course designers and student support services should minimize stressors on students such as unclear curriculum [8**]**. Both curriculum planning and implementation needs expertise in medical education, attention is need on its implementation [9]on the other hand, it is difficult to conduct outcome based research to compare effects of different curricula[10] ,so ongoing evaluation as we did is mandatory to improve curriculum implementation and effectiveness [10].

It is reported that ongoing instructional changes in PBL curricula proved to improve the student performance **[11]**. Changes to curricula which improve students' performance is needed to be recognized, since many medical schools in the gulf region are planning for or already in the changes phase to their curricula for adopting PBL and consequent changes to their curricula [12].

The curriculum map and blue prints is mandatory for the teachers, students, and the curriculum implementation. These documents are required so it is transparent for all the individuals involved in this process. These documents should include the expected learning outcomes, contents and assessment [13].

PBL is a complex learning environment in which different variables influence each other mutually. In this sense it is not a surprise that, in practice, problems are often encountered [14].

Changing to a problem-based learning (PBL) curriculum represents a substantial challenge because many faculty members are unfamiliar with the process should undertake tutor training prior to case writing and assessment workshops. Once faculty have understood the tutorial process and trained as a PBL tutor, they are in a better position to develop cases and materials that reflect and enhance the tutorial process. Similarly, a principal goal of assessment is that assessment and learning processes should be congruent. It is difficult for faculty to debate and develop new assessment processes until they have a solid grasp of the PBL process [15].

Problem-based learning (PBL) is increasingly being used as an educational approach in medical education. It is supposed to 'promote the transfer of concepts to new problems and the integration of basic science concepts into clinical problems [16].

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1.2 STATMENT OF THE PROBLEM

PBL is an approach in learning and instruction in which students tackle problems in small group under the supervision of a tutor in which they will collaboratively solve problems and reflect on their experiences [1].

The challenges facing those who are implementing Problem-based Learning (PBL) in teaching and learning are as diverse as they are complex. They range from people and resource issues to organizational matters [17].

Problem-based learning (PBL) was introduced in Malawi in 2002: However, its implementation has been very slow throughout the country and after six years of initiation, only one out of 13 nursing colleges reported to have successfully implemented PBL [18].
Changes and problems are likely to arise during transition from a more traditional program to Problem-based Learning [17]

Researchers and writers have identified the change of lecturers‟ mindsets resistance to change, greater demands on staff and resources, and the unique cultural and political context of institutions as heavily influencing the experience of Problem-based Learning by teachers, and its effectiveness in Temasek Polytechnics Business School [17].

Setting-up a university program based fully on PBL is resource-intense [19]; appropriate number of smaller rooms with the necessary equipment is needed (i.e. whiteboard, eventually beamer and computer), experience at Maastricht also showed that the importance of the library also increased considerably and staff-intensive [19].

The Rosario University School of Medicine in Argentina identified four basic requirements for full implementation of a PBL curriculum. These were the low number of students in each group, appropriate numbers of facilitators in specific science courses such as Sociology and clinical areas, and adequate human and financial resources [20] Facilitating small group discussions demands more human resources as facilitators and infrastructure such as classrooms [20]. This can be a challenge in a resource-constrained country like Ethiopia.

In the above study, it was reported that the Rosario University School of Medicine neglected to invest in the facilitators' knowledge of PBL facilitation and other social and psychological preparation for staff and students. That resulted in resistance to change by both students and staff.

PBL not only takes into account the content of a course, but also incorporates a Strong emphasis on skills development. While this is considered as advantage and strength of learning with PBL, experience showed that students develop the respective skills only in rare cases in an intentional manner on their own, but that this second component ideally has to be taken into account when designing a course, and even more importantly when implementing PBL in the tutorials [19].

Staff members at the Faculty of Arts and Social Sciences of Maastricht University [21] consider difficult group dynamics and lacking skills of students as one of the challenging aspects of working with PBL.

Process-type assessments can also be resource-intensive [22]. Time constraints, poor student motivation, evaluation problems, concerns about student-directed learning and a lack of structure coupled with loss of faculty control were problems that can act as barriers to the implementation of Problem-based Learning [22].

Ethiopia, like other countries with limited resources, suffers from significant human resources for health (HRH) shortage. With a current physician ratio of less than one per every 25,000 people [1]. Ethiopia is in the Process of rapidly scaling up its number of physicians by introducing the new curriculum in 13 newly opened medical schools with collaboration of FMOH and FMOE [1]. This integrated new curriculum uses PBL as one the teaching methodology since 2011. DebreBerhan University medical school is one of the newly opened ones, which uses PBL, in teaching and learning process. However, many of these newly opened schools face significant challenges, including a shortage of qualified instructors and educators, insufficient infrastructure, and a lack of learning resources to implement PBL [23].

According to the Ethiopian Ministry of Health report, the newly opened NMEI schools faces a lot of challenge while implementing PBL, such as; *Shortage* of infrastructure in the medical schools, shortage of teaching aids mainly Laboratory equipments, absence of teaching hospitals under the universities, shortage of both biomedical and Clinical instructors [24]

Since PBL is new approach to teaching and learning, teachers need education and training as well as they need to study individually and in teams (learning communities), exchanging their experiences, incorporating new ideas from outside including formal knowledge [25] . Curriculum development committee had the responsibility of Continuous monitoring and evaluation of the medical education process and curriculum implementation in order to detect challenges and propose solutions [1].

Literature on the implementation and use of PBL in Sub Saharan Africa is limited. The same true in Ethiopia there is no studies done on the implementation and challenges aspect .Therefore, the aim of this study is exploring what challenges faced in DBU medical school while implementing PBL.

1.3 THEORETICAL BASIS FOR PBL

One of the arguments used to support the superiority of PBL is the concept of contextual learning [26] .The basic premise is that when we learn material in the context of how it will be used, it promotes learning and the ability to use the information. In PBL, the problem is usually portrayed in the real-life context of a patient coming to visit a doctor, or some variation. Thus, almost all of clinical education occurs in the contextually[26] relevant process of patient care. One background about learning theories underlying PBL considers this as the most central innovation Of PBL, as it considers learning as "a process in which the learner actively constructs knowledge'' [27].

In similar study of above shows that for knowledge to be recalled and applied later, it is best if the PBL assignments and the context of learning mimic the future professional problems that students might encounter as closely as possible. In traditional learning environments students are just left with the acquired knowledge without any explanations of how the learnt could now be applicable in the real work or in a future job. This shortcoming of a mental distance between the acquired knowledge and its translational to a real-work context is overcome by PBL [27].

At the same time, PBL strongly points at the process-dimension of learning, emphasizing that the focus should not be "what is learnt" but "how it is learnt". Educating students towards independent, reflective and sustainable learners is the ultimate goal of PBL [19].

2. LITRATURE REVIEW

2.1 OVER VIEW

Several studies acknowledge the positive effects of PBL on various aspects of student learning [28].These includes areas such as knowledge retention, integration of basic science knowledge, and acquisition of self-directed learning skills and enhancement of intrinsic interest. Research, conducted primarily in medical education, provides increasing empirical support for the effectiveness of PBL [29], but the weakest link appears to be the assessment methods [30].

The main challenge for most of African country is lack of resource, however; a study done in South Africa shows PBL was adopted as one the viable solution to solve this challenges and PBL seen from an institutional perspective is education that is more efficient and therefore better utilization of meager resources [31].

2.2 STATUS OF PBL

Ethiopia as other African country that adopted PBL since 2011 uses PBL as one of main teaching methods in 13 medical schools. Even though there is no research done regarding the challenges faced during implementation of PBL from those schools or other bodies, there is a report from the MOH that there are a lots of challenges faced in those 13 newly opened medical schools[24].

In the past decades, a growing number of medical schools have adopted problem-based learning (PBL), an educational strategy that many believe that responds to the issues behind demands for reform in medical education [32].

Problem-based learning (PBL) is widely used in higher education faculty, though educational practice problems are often encountered, such as tutors who are too directive, problems that are too well structured, and dysfunctional tutorial groups [14].

2.3 FACTORS AFFECTING PBL

2.3.1 SOCIO-DEMOGRAPHIC AND ECONOMIC FACTORS

Demographic characteristics are usually presumed to have an influence on the students' learning styles, perceptions and performance [33]. Study done at Bond University shows diversity of students (i.e. local and international, males and females, graduate and school-leavers, younger and older students), where the observation of their verbal interaction in the PBL tutorials could contribute to the decision of assessing the applicability of a PBL program in a different region of the world with a multicultural environment [34].

Students from health professions backgrounds were noticed to dominate the discussion and forced their new knowledge on the interaction occurring in PBL tutorial [34].

PBL students used the library more than traditional [35]. Moreover, when PBL students use the library, "they do so more frequently, for longer periods of time, and as a source for a greater proportion of their study materials" [35]. In general, in their study they found that problem based learners utilize library resources and services more heavily, including database searching, journals, reserve materials, photocopy services, and audiovisual materials. Problem-based learners "use and value information resources that support the independent learning process, acquire information searching skills at an earlier stage in their medical education, and report greater ease in using these resources" [36].

The costs of PBL were high when class sizes exceeded 100 [28]. PBL was stressful for both students and faculty and appeared to be unreasonably expensive [22].

One study found the following barriers to successful implementation of PBL; projects were time-consuming, classrooms felt disorderly, teachers could not control the flow of information, it was difficult to balance giving student's independence and providing them supports, it was difficult to incorporate technology as a cognitive tool, and authentic assessments were hard to design [37]

2.3.2 TUTOR RELATED CHALLENGES

As study done in Singapore the challenges or concerns discussed touched on many factors: the mindset of tutors towards change, the philosophy of tutors concerning teaching and learning, new skills, resources and requirements made of tutors, attitudes of students towards learning which tutors need to change, and issues related to assessment [17].

Few shortcomings of the implementation process observed in new PBL medical schools .These were; some block planners may not make course/block blueprints explaining detailed expected learning outcomes, and weight of different discipline, new block planners are not aware of previous recommendations of Curriculum Development Committee and evaluation of end of block examinations are done after its end not as an ongoing process [38].

Dominant tutor causes tension and conflict in groups, which leads to lack of commitment, cynicism or student absenteeism [39]. Conversely, if the degree of tutor regulation is too loose, e.g. a tutor who is too passive, there is also a problem. Dominant tutors in the group hinder the learning process, but the quiet or passive tutor who is probably trying not to teach also hinders the learning process [39].

In research took place in Hong Kong, China; there are four factors affecting the implementation of PBL in institutions were identified. These are, resource, quality assurance, student factor and teaching conception of faculty members [40]. Irrespective of the experience of PBL tutors, all agreed that the quality assurance evaluation mechanism, student factor and teaching belief played an important part in PBL implementation. However, those faculty members with less experience in PBL found it quite difficult to take up the PBL teaching approach and they believed that it was impossible to run PBL as an individual course [40].

In another study, most students (71%) state that one of the factors affecting performance of tutor is their point of view towards PBL or their adaptation level of the system [40]. Moreover, in another study the students stated that the tutors' content expertise also affected their performance during PBL implementations. Similarly on the other study it was stated that students (especially first grade ones) were more dependent on their tutor's content expertise than advanced students. [41-43]

Faculty members need training to develop facilitator skills, otherwise they may be unsuccessful in Problem-based Learning [44].
Staff perceptions of lack of support or unity often seem valid to them, and may determine the climate of the implementation process [45

2.3.3 STUDENT RELATED CHALLENGE

Many faculty members and students in PBL have experienced dysfunctional tutorial groups. Various studies were conducted investigating dysfunctional tutorial groups as problem[46]. Such as; apathetic groups, groups cynical about PBL, not discussing problems, and groups with passive tutors. In another sudy[47, 48] describe situations in which PBL leads to ritual behavior, being a group in which specific kinds of cognitive activities such as elaborations and activation of prior knowledge do not take place. In these groups, new ideas are brought into the discussion without connections being made to other ideas.

Students in these groups maintain an appearance of being involved, but their behaviour is ritual. Another discouraging experience is a group that is faced with some group members who do not prepare for the meeting and let others do the work in the group, which might lead to less involvement from those students who were motivated initially[47,48].
The occurrence of critical incident in tutorial groups also investigated as one of the challenges in implementing PBL [49, 50]. These studies demonstrated that lack of elaboration, lack of cohesion and lack of motivation highly inhibited the learning process in PBL;which leads to dysfunctional tutorial groups .

PBL typically runs in groups of 5-10 students work together in a group tutorial, facilitated by one or more faculty members. Students are encourage-aged to explore what they know in order to under-stand the problem [51].

Common difficulties in PBL group were listed in a tutor novice guidebook [52]; such as; the quite group member, dominant group member and the group keep stay storming. Although the small groups used in PBL allow students to discuss problems freely, some students might not contribute to the PBL discussion for a number of reasons, including personal (shy, withdrawn), cultural (cultural background prohibits putting themselves forward, e.g. Saito *et al*., 2007 [53].

2.3.4 ADMINISTRATION (FACULTY) RELATED CHALLENGE

Study done in Pakistan lists why low implantation in PBL and perception of the faculty shows: most of tutor said that; PBL Need adequate infrastructure like library, skills lab, rooms for small group discussion with teaching aids ,WHO has not provided adequate support for the equipment and dequate number of teachers not trained in conducting PBL sessions [54].

However, the administrative perception was that teachers adequately trained but institutional changes take time, similarly the tutor also raised issues like: WHO has not provided adequate support for training, adequate number of teachers not aware of PBL principles and concepts and transfer of trained faculty to other institutions.

In the above study, the other point raised by the faculty were their attitude by assuming as PBL increase work load for the faculty, time consuming hence incentives need to be added , Fear of failure reverting back to the traditional curriculum and the program has been imported from the west and hence not suitable for our educational system are the main reason for low implementation[54].

Designing effective problems is not an easy task. In some PBL curricula students are confronted with problems that are too well-structured, too close ended and too simple, due to which students are not challenged to construct knowledge actively. Furthermore, problems are all too often not realistic. The problems used are mainly paper problems; real patients are seldom used. In this situation, PBL does not stimulate students' towards constructive or contextual learning [14].
Changing the curriculum to problem-based learning (PBL) represents a major challenge for faculty in any school. This is most immediately obvious in terms of curriculum delivery [55].

Added to this is the level of integration required to construct the new curriculum around real-life professional cases. As faculty in traditional schools usually teaches within the boundaries of their own discipline, the concept of an integrated multidisciplinary case-based curriculum may initially create substantial tensions. Faculty may fear a 'loss of control' over the curriculum, expressing concerns about the representation of core curriculum content, perceived unwanted fragmentation of discipline input and the amount of each discipline that a student will be able to learn using a PBL approach [56-58]. In health sciences curricula, consensus between basic scientists and clinicians about curriculum content may be difficult to achieve [59].

Developing and advocating rewards for teaching are essential in valuing and sustaining the contribution of faculty to the change process. However, in many schools these structures are given insufficient attention [60]. This is a significant problem for PBL schools where, arguably, the need to attract and retain faculty skilled in the PBL approach is the most acute.

There are several barriers to the acceptance of problem-based learning in established medical schools: institutional complacency resulting from longstanding educational traditions and a lack of reward for teachers who develop academic competence in education at the expense of biological research and clinical care [61].

Lack of shared meaning, and professional development which is “ad hoc, discontinuous and unconnected to any plan for change are also factors which may work against innovation”[62]. It was emphasized in the above study, the need to view change as a process, not an event. The point is made that true change can only come about if the change becomes institutionalized. A lack of institutional commitment to change may represent another barrier to implementation of PBL [62].

Generally, the challenges in implementation of PBL range from people and resource issues to organizational matters [17]. Demographic characteristics of the students [33] , lack of resource,tuors related challenges like tutor w ho is too directive ,resistance to change for new curriculum(PBL),no experience, lack of training for tutor to be more facilitator, lack of award who work better, poor attitude of tutor for PBL was found in different in literature.
Since Problem-based learning (PBL) is widely used in higher education faculty, student related challanges like dysfunctional tutorial group ,negative attitudes towards PBL , quite group member, dominant group member and the group keep stay storming., some students shy, withdrawn) which are the causes of ineffective group discussion results in low implementation of PBL. organizational issue like their perspective as they consider PBL increase work load for the faculty ,time consuming, Fear of failure ,lack of institutional similarities on acceptance of the program, and the case related issue which were prepare for the students were the main things discussed in the literature.

3. SIGNIFICANCE OF THE STUDY

This study attempts to explore the factors that affect the implementation of the integrated curriculum specifically PBL in DebreBerhan university college of medicine.

The study result will help for curriculum developer committee and ministry of health and education as the baseline information for planning and implementing of appropriate intervention concerning the case prepared for the student, the training aspect of the tutor and the staff as whole how they run the program. It will also provide baseline information concerning quality of education given in the medical school.

The outcome of this study will help to promote the quality of medical education by giving information about the existing gaps and obstacles for implementing the PBL. The tutors, students, PBL coordinators as well as curriculum developer committee can benefit from this study by doing their best in the areas of weakness. On the other side, the result of this study can also be used as a secondary data for further study on this issue.

4. OBJECTIVE

4.1 GENERAL OBJECTIVE

To explore the challenges of problem based learning implementation in DebreBerhan University College of medicine

4.2 SPECIFIC OBJECTIVE

- To explore challenges of PBL implementation administrative related of college of medicine
- To explore student related challenges in the implementation of PBL.
- To explore tutor related challenges in implementing PBL at college of medicine, DebreBerhan University.

5. METHODS

5.1. STUDY AREA AND PERIOD

The study was conducted in DebreBerhan University, situated in, Amhara Region, North Shoa zone, DebreBerhan town, located 130km North East of the capital city, Addis Ababa. DebreBerhan town has a population of 110,408 according to the 2012 estimation. DebreBerhan University, which is a 10 years old young university, is established in the 600years old historical town, DebreBerhan. The initial intake capacity of the university (in Jan.2007G.C) was 725 students who joined into five departments with 68 instructors and 7 administrative staffs. Currently, the enrolment has significantly increased to around 18,450 regular, extension and summer students who joined in to 33 departments/programs under ten colleges, two institutes and six post graduate programs. Currently, the university is staffed with around 850 (first degree to third degree) and more than 750 administrative staffs

Since, 2011 G.C DebreBerhan University (DBU) has started the training program of medical doctors, in an effort to meet the enormous national demand of physicians. DBU with other 12 institutions has adopted a new innovative medical education curriculum for the production of competent professionals capable of handling the huge national and public responsibility of a physician. With a vision of achieving healthier Ethiopia, in which quality health care service is accessible to every citizen. In 2013 G.C medicine has been established as a college of medicine under the institute of medicine and health sciences. Currently there are 40 academic, 3 technical and three administrative staffs under the medical college. Among the academic staffs 27(physicians) have direct involvement in the preparation of cases and implementation of problem based learning (PBL) as a tutor. The college has 210 medical students with (55, 62, 38 and 55) students from year one to four respectively.

The study was conducted from July 20-August 5, 2016.

5.2. STUDY DESIGN

Explorative descriptive qualitative study design used to conduct.

5.3. POPULATION

5.3.1. SOURCE POPULATION

All medical students of DebreBerhan University (210), all tutor (27 General practitioners) and administrative bodies (preclinical co-ordinator).

5.3.2. STUDY POPULATION

All year one and year two medical students of DebreBerhan University (117) all tutor (27 General practitioners) and administrative bodies (preclinical co-ordinator) who are directly involve in the implementation of PBL during the study period.

5.4 ELIGIBILITY CRITERIA

5.4.1 INCLUSION CRITERIA

Tutors who delivered PBL for at least six months were incorporated for interview. Students who were volunteer and with different educational background were included in study.

5.4.2 EXCLUSION CRITERIA

Those tutors who delivered PBL for less than six months were not interviewed.

5.5. SAMPLE SIZE AND SAMPLING TECHNIQUE

5.5.1. SAMPLE SIZE

The total numbers of student who are taking PBL are 117(year 1 and 2).Among those, 16 students were selected purposely from year 1 and 2. Then, they were arranged in two groups, 8 students in each group from each year. Then group discussion was conducted and data was collected until saturation of ideas is maintained(when ideas are repeatedly raised and when the group facilitator believes no more new ideas is going to be raised, the group discussion were stopped). For Tutors 7 general practitioners were purposely selected from 27 tutors and interviewed until saturation of ideas is maintained(the interviewer can stop if there is repetition of ideas and no more new ideas are anticipated to be raised). Lastly, pre-clinical co-ordinator of College of medicine was interviewed.

5.5.1 SAMPLING TECHNIQUE

Sampling Technique was purposeful sampling

5.6. PRE-TEST

A pilot study conducted in the first week of July 2016 to test the interview guide for appropriateness and clarity of the questions. The interview guide revised according to constructive comments received from the pilot study participants. The questions were reduced whilst ensuring that the study objectives to be retained. The pilot study data incorporated into the results of the main study. The interview guide questionnaire not developed from standard source; it was prepared from the researcher.

5.7. DATA COLLECTION METHOD AND INSTRUMENT

Data collected using semi-structured interview guide question and focus group discussion, taped-recorder, pen, pencil and paper.

5.7.1. DATA QUALITY CONTROL

Peer review, reflexivity, and engagement in data collection until data saturation occurs as ways to ensure internal validity in this research as other qualitative research.

The results of the current study may not be generalizable, as seen in any other qualitative study. The theory generated during or after data, analysis is specific to that specific research situation at that time.

The quality of the data was also assured through pretesting interview guide and the semi-structured interview questionnaires was crosschecked and make correction on daily base.

5.7.2. DATA PROCESSING AND ANALYSIS

I began my data analysis by transcribing the recorded data from interview and focus group discussion on paper. I incorporated a more intensive analysis by reading all of the data several times, taking notes, writing memos of the data. At that point, I searched for patterns and regularities that eventually became broad categories for coding. I initially started with the broad categories 'tutor related challenge, student issue, faculty related challenge, case related challenge, and assessment related challenge. I also gave the recorded data for my assistant to code it. and what I found was similar broad themes and sub themes.

I then read the data from the record and coded data under the broad categories that were identified. A second more advanced and intensive analysis helped me streamline conceptual categories based on concepts related to the research questions.

5.7.3. DISSEMINATION PLAN

The soft and hard copy of the result will be submitted to Addis Ababa University, College of health science, and department of medical education, DebreBerhan University College of medicine and Federal ministry of health particularly to the curriculum developer committees with appropriate recommendations. There will be also a try to publish the thesis both in national and international medical journals. Presentation of the thesis on different seminars, forums and discussion meetings will also be part of dissemination of the result.

5.7.4. ETHICAL CONSIDERATION

An official support letter was obtained from the ethical review board of Addis Ababa University College of health science for official recognition support from the relevant organization and departments. I was also well informing the interviewee about the aim of study. Additionally, it was explained that they have full right to be involved in the study and their verbal consent ascertained with their agreement. Finally, all information collected from respondent kept strictly confidential and names were not included in the abstract data.

5.7.5. LIMITATION OF THE STUDY

As in any research, there are limitations to the current study. This study was qualitative in nature. Yet, study results cannot be generalized for all universities who use PBL as their teaching methodology, which is one limitation of the study.

Another limitation is that teachers have shared their experiences based on the implementation of only one or two system PBL cases. Implementation of more PBL cases by teachers in their classrooms would have yielded different information.

6 RESULT

A total of 7 general practitioners and the pre clinical co-coordinator were interviewed as well two focus group discussions were held with year one and year two medical students a total of 16 each group of 8 . Challenges in the implementation of PBL are explored and the findings are presented in five themes .These are student, tutor, faculty, case, and assessment related Challenges.

The following figures are the demographic representatives of participants in the study.

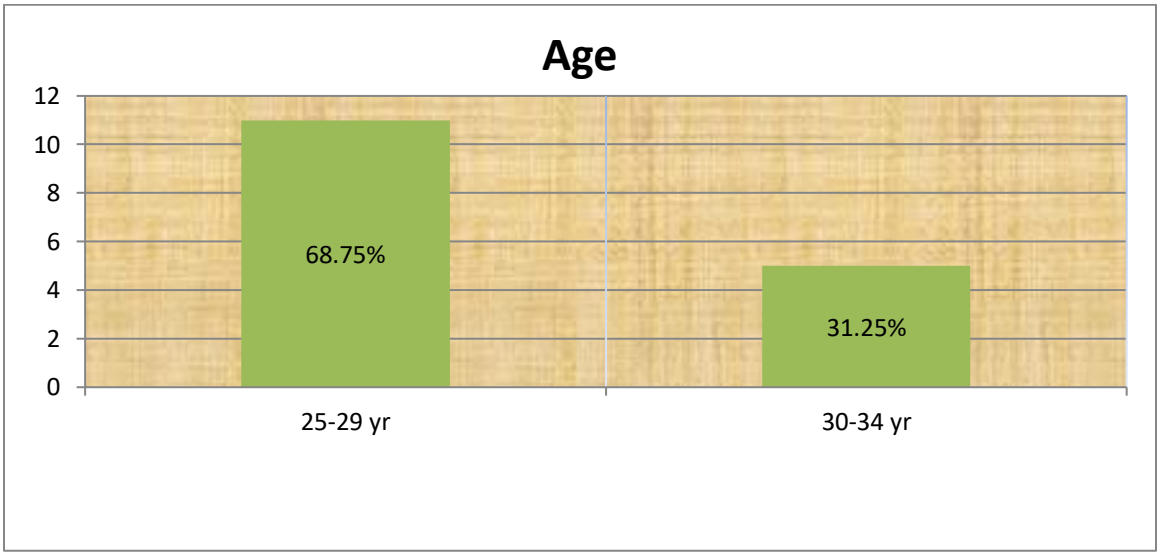

Figure 1students age distribution of focus group

Figure one-show students in the focus group discussion age distribution. As you see most of them are on the range of 25 -29 year, which is 68.75%.

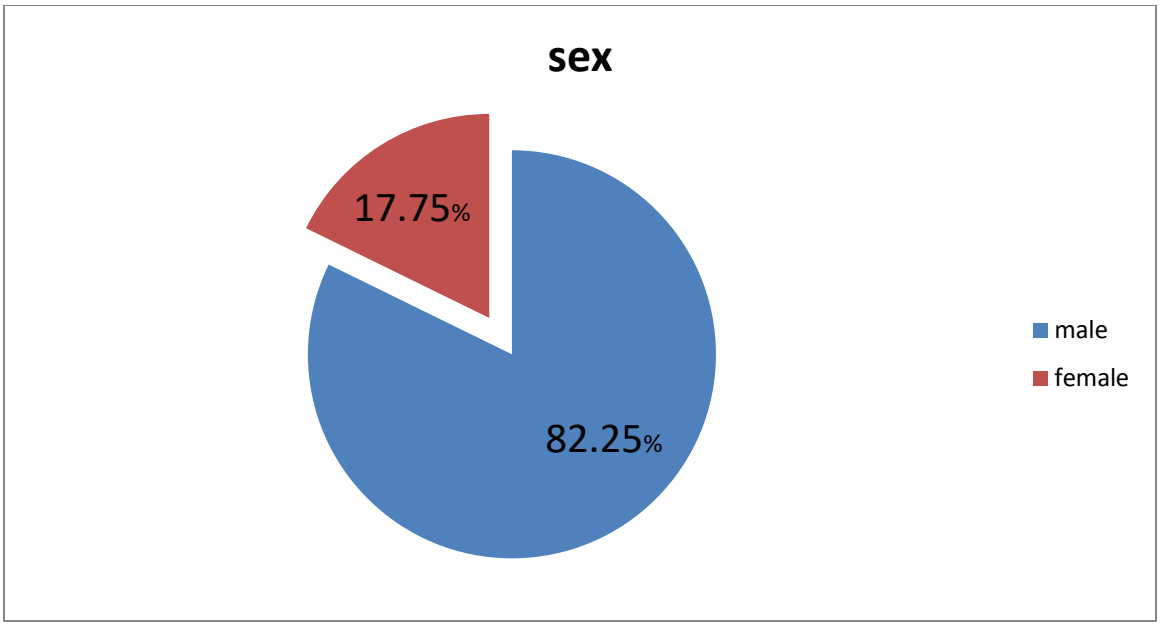

Figure 2 sex distribution of students participated in the focus group discussion

The above figures show the sex distribution of students participating in focus group. Most of them are men 13 (82.25%) and three (17.755%) of them are females.

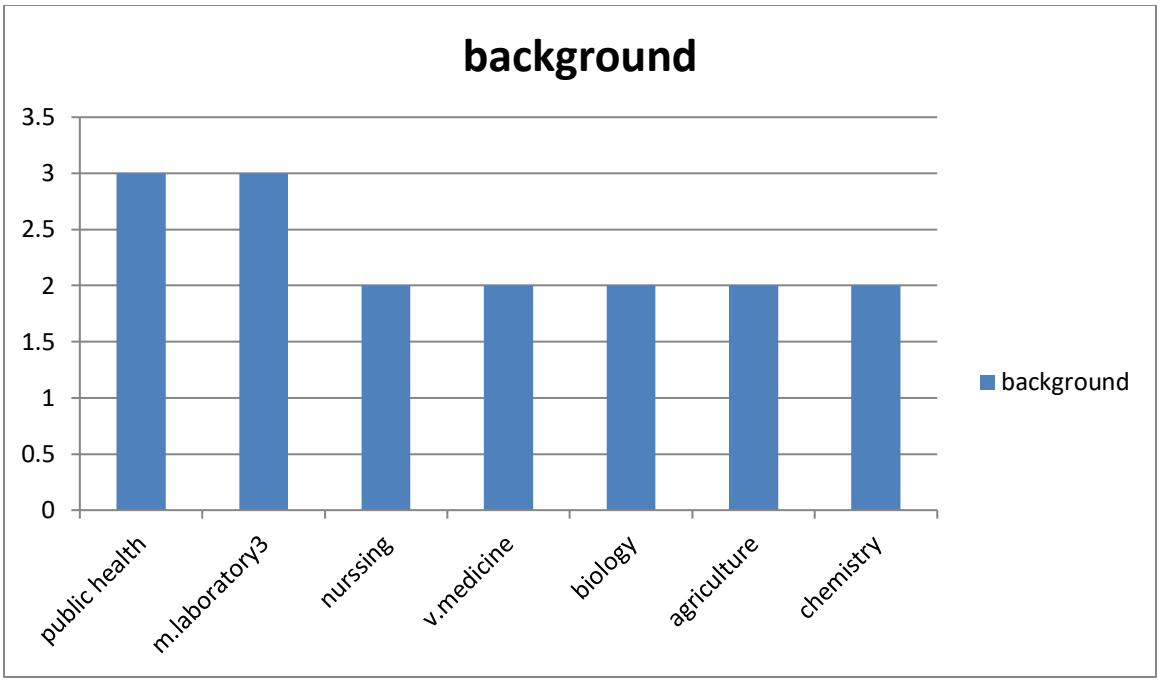

Figure 3students background(their first degree) distribution of focus group discussion

This figure 3 shows the student's first-degree background student public health 3(18.75%),medical lab 3(18.75) and the rest of them from five disciplines each 2 (12.5%) .

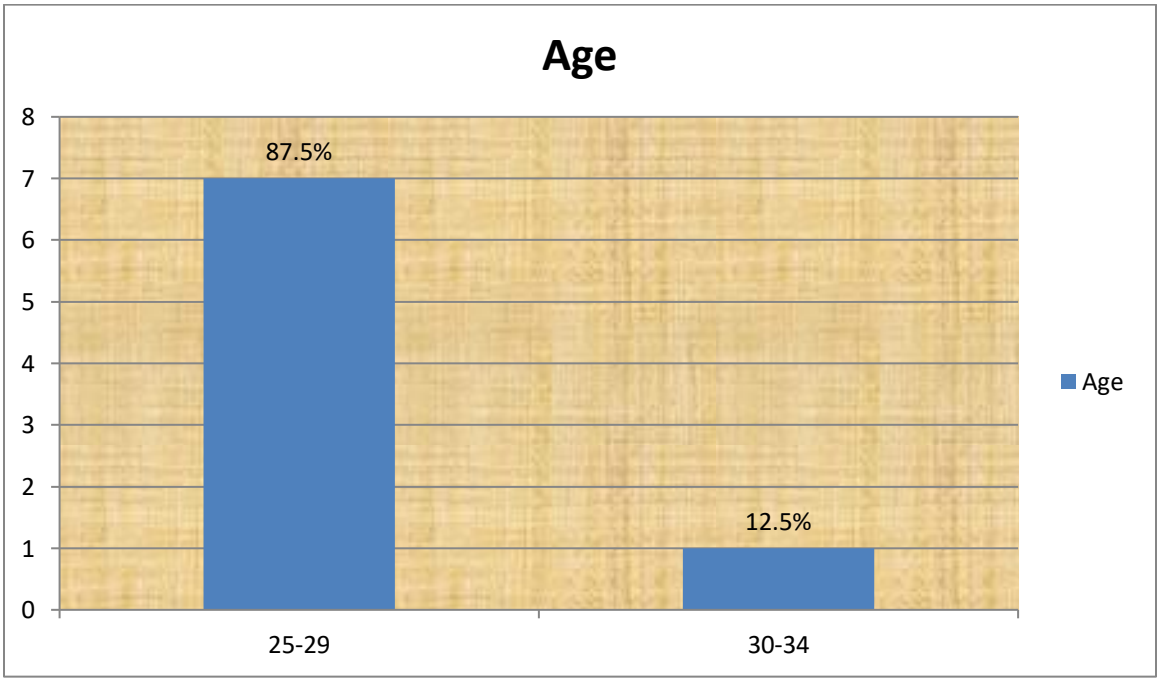

Figure 4 staff age (interviewed) distribution

The above figure shows staff age distribution who were interviewed most of them are on the range of 25-29 years 7(87.5%) and 30-34 years are 1(12.5%).

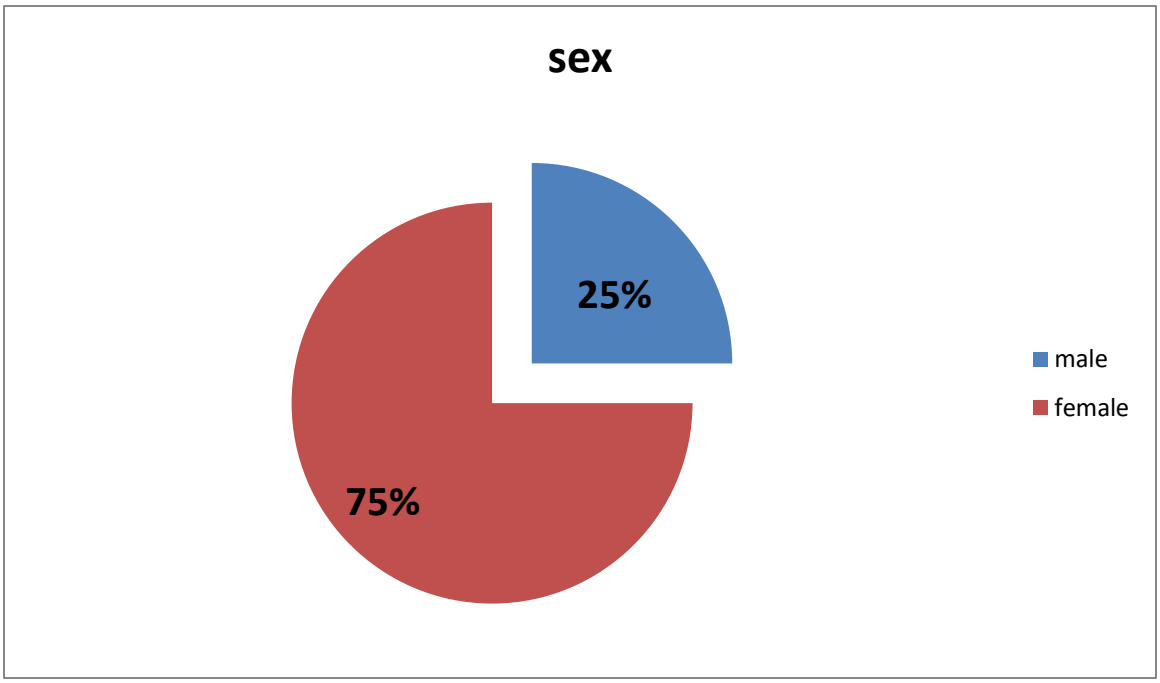

Figure 5 staff sex distribution (interviewed)

Figure five shows sex distribution of the staff interviewed most of them are male six (75%) and female are two (25%).

In general, five themes is developed from the result and presented as follows.

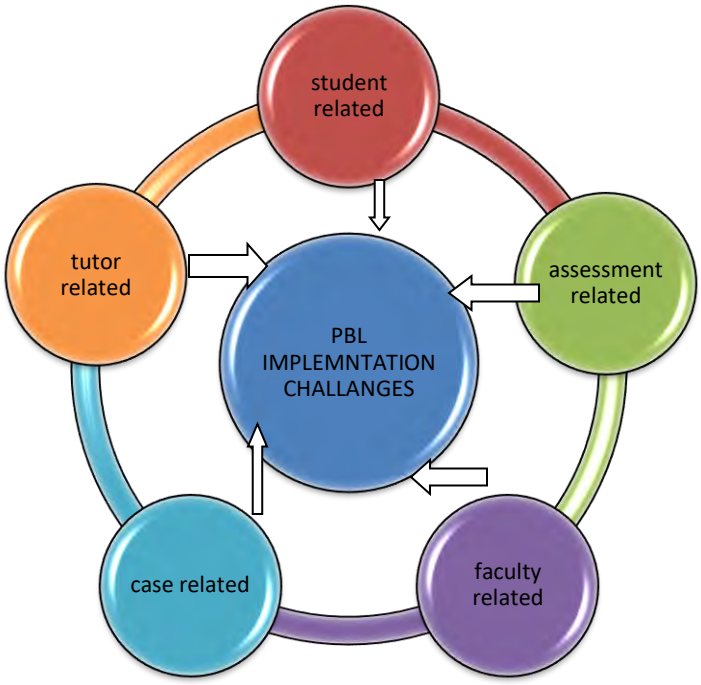

Figure 6challenges in implementing PBL in DEBREBERHAN medical college

6.1 STUDENT RELATED CHALLENGE

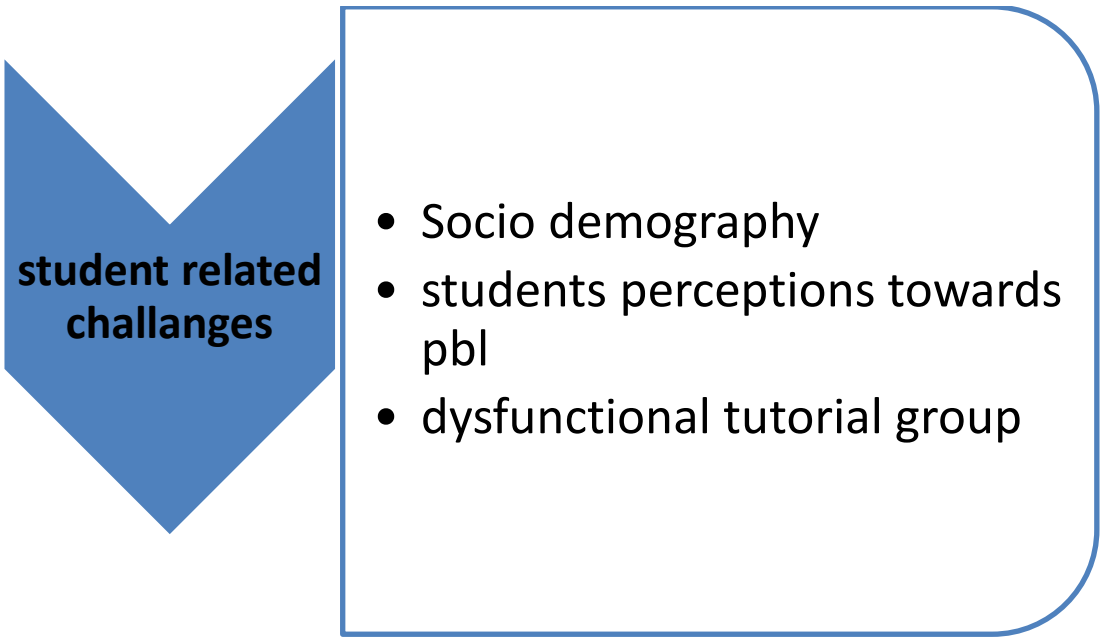

Figure 7 student related challenge-implementing PBL in DUMC (DebreBerhan University medical college)

6.1.1. Socio demography

Student‘s age was raised as an obstacle in facilitating by tutors ‘*’there is variation among students in their participation due to their age, younger students come with reading ,eager to participate, do their reading assignment properly. On contrast older (relatively, above 30) students are not as such eager, they repeat what their colleagues talk, are not coming with reading. Tutors believe that this is because of ; some of them are coming from long time after graduation, working long time in office ,not working as academician as well, some of them have their own responsibility(family)* ‘’. Most of the tutor’s also comments that ’there should be strict control of students’ age who are going to join medical school.’’

Students also mentioned background of their study as a major challenge for their participation. Result from focus discussion shows students those come from non-heath background says'' we are unable to cope up with students come from health background because all the terms are new for us, when we try to search definitions' of terms they finished integrating system and they proceed further reading and actively participate. We feel inferiority, feel of incorrectness .This results having our assessment result becomes low relatively''.

Students also said ''we cannot express easily our ideas because of the communication media is English, which is our secondary language.''

6.1.2 Student's perception towards PBL

Most of the students want to learn by PBL. However, they think that it takes time for preparation and self-study time as well as some of them fear challenging questions, think as waste of time for irrelevant discussion. Some of them also assume as if it is not useful for exam. Due to the above reasons, they lack to be committed to be fully engaged in the system.

Most of the students need to work in their teams based on the principles of PBL. However, they also identified some shortcomings like unwillingness to share the same goals, lack of responsibility of some team members and under preparation of some team members.

6.1.3 Improperly functioning tutorial groups

Overactive students who dominate the discussion were found. 'Some students talk unrelated things just for evaluation, not giving chance for their colleagues.''

The other is *the students do not know their role as PBL learner and their tutor role; they expect much from their tutor*.'' one student says *"since the curriculum is new as well as we are not passing through in such methodology, we thought not be expected to deal a lot with our own effort"*.

Some of the reasons mentioned by Students why their groups are not well working include: the selected leader /chairperson do not give equal chance and unable encourage passive ones, lack of

trust of each other; some students come without reading, lack of motivation, lack of shared vision and inconsistency of the same groups for long period.

Some student also suggest that they do not engage to the group discussion due to personal behavior like shy; these students are good in written exam, have a good knowledge but unable to communicate during PBL sessions.

6.2 TUTORS RELATED CHALLENGE

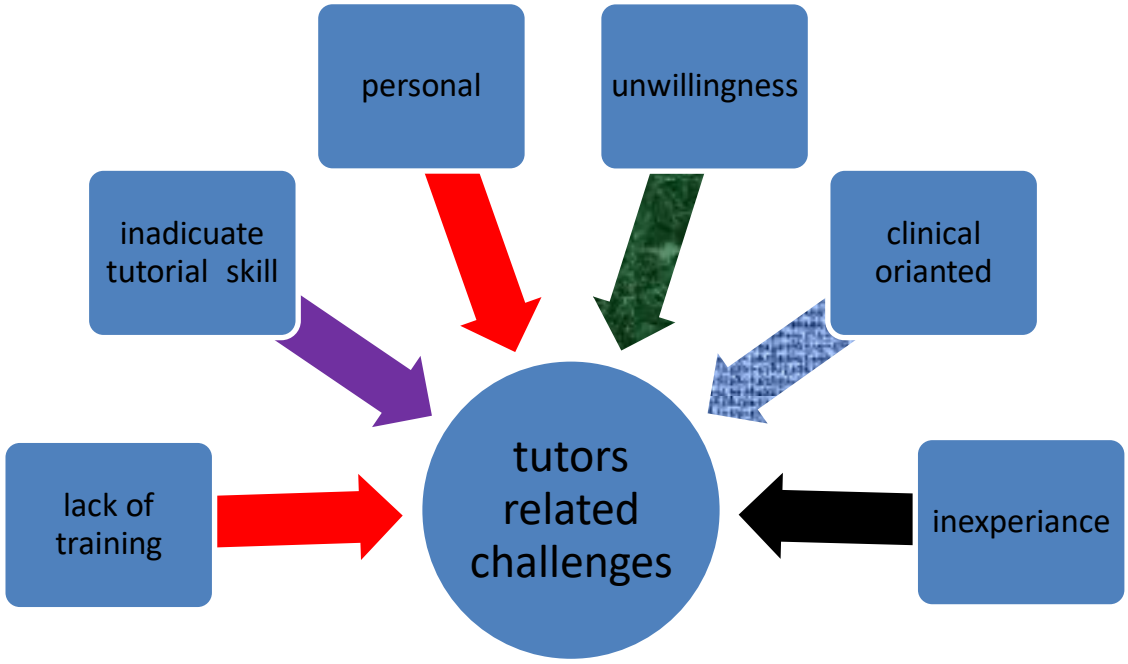

Figure 8 tutors related challenge in implementing PBL in DUMC (DebreBerhan University medical college)

6.2.1. Unwillingness

Unwillingness of the tutors and their resistance to change was identified as one challenge in implementation. They have varies reason why they are not willing such as, they think as if' waste of their time for no relevant thing', since they assume as no contribution in the discussion. They complain that 'mostly we go and sit down, and just observe while students struggle; this is boring for us as tutor'. On the other hand, they also raised the issue of, the case addressees multidisciplinary subjects so they are expected to be expert of those subjects, need to be prepared in such areas. It also takes time in preparing course material. They assume they are the source of knowledge, they are not happy with role as tutor. Lack of incentive is also suggested by the physicians for their unwillingness to deliver, prepare and facilitate PBL tutorial.

6.2.2. Inexperience

Almost all tutors came from conventional curriculum medical schools where PBL is not the means for teaching learning. Therefore, this is one of their obstacle to be easily familiarized with the principles of PBL, how to become a good facilitator. Furthermore, most of them have served for less than a year in tutoring PBL in this collage.

6.2.3. Lack of Training

There are tutors who did not trained about PBL. Those tutors complains that they are facing a lots of difficulty such as they don't know the procedures,steps,principles and their role clearly while delivering PBL.Most of those untrained staff tend to mislead students out of objectives starting from case preparation to delivering the cases. Even the trained staff also complains that the training is too short, not inclusive, and not as such relevant to be facilitator. They also complain that they did not get continues capacity building training program.

6.2.4. Clinical Oriented Tutors

Most of the tutors are clinical oriented, so that they inclined to focus more on clinical aspect of the PBL. Students complain that 'we are asked what we don't know, we read basic science but the tutors asked clinical areas. Students also comment, "Tutors do not like to discuss the basic science, they do their work when we are discussing basic science part; even they don't like to be asked about this portion". The reason why they focus on clinical portions suggested by the tutors is that in order to encourage discussions on basic science part the need to read on the subject matters which is too difficult to come up with all readings of the basic sciences so that they prefer to focus on clinical aspects which is relatively easy to ask and to discuss. The tutors also think that they do not come with reading because they are not expected to know.

On the other hand, one teacher said 'in our set up ,tutors are expected to know much more on the subject because most students do not come with reading. if you know the problem with its objectives and concept ,you can challenge students and facilitate the group effectively. However, this does not happen since tutors do not come with preparation. As a result tutors ask what they know which is the clinical portion".

Some Tutors give lecture during the PBL discussion. Actually, some students expect more from tutors so that students consider them, as they are excellent tutors. However, most of the students complain that it takes their time of discussion. On the hand, some tutors act as leader/chair person in which students complain that they do not freely participate

Sometimes ''tutors come for only evaluation'', one student said. They are not directing, following and facilitating the group. Due to this'' we are not learning what we have to learn'.

6.2.5. *Inadequate Tutorial Skills*

Skill gap among tutors is the main issue .Most of the tutors told that '*'we have difficulty in facilitating the group since we have not acquired the required skill how to lead dynamic group members*''. Tutors also mentioned the *fact that Students coming from different disciplines is one of the difficulties to maintain group dynamics and create smooth environment. Students who come from non-health background do not cop up with those coming from health background .so, most of the tutors lack the skill how to maintain the group members with different level of knowledge in a similar momentum during the discussion.*

6.2.6. Personal behavior of tutors

'Some tutors are aggressive and consider us as if we know nothing' students complain. Even some of them are so carless, do not follow what we talk, do not guide when we are in wrong way of direction.

Non-punctuality and absenteeism were also the problems of some tutors. Some tutors also facilitate two PBL groups at a time.

6.3 CASE RELATED CHALLENGS

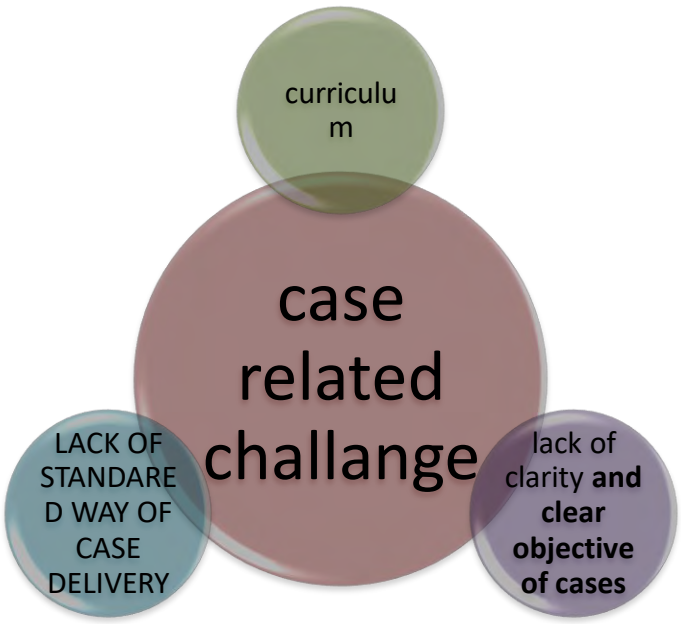

Figure 9 case related challenge in implementing PBL at DebreBerhan University College of medicine

6.3.1. Curriculum

PBL cases listed on the curriculum itself are found as challenging for both students and tutors. Tutors comment that "some of the cases in the curriculum are not clear with no clear objective to deal about. Some cases are challenging case (difficult to understand)

Time allocated for each PBL case is another issue.' *Giving equal time for all cases is not fair'* a comment shared by both students and tutors in common. In addition students said that "*the time given for the first session of PBL was long, we don't use appropriately since we come up with no reading and the case is new; however, the time given for the second session is not enough to reflect what the group members read*".

Miss-arrangement of PBL cases with class lectures was another issue raised by students .They said, "*We usually discuss cases in our PBL session before we learn the basic science lecture; this is one of our reasons not to actively participate. We do not know what we are going to read*". Finally, they suggest that it will better if curriculum will be revised, like; if PBL is given after they took some system lectures, as well, as if professional competency development (PCD) part is given before PBL.

6.3.2. Lack of clarity and clear objective of cases

Some cases are too short (only chief complaint) .A student also complains, "*The cases are not described well, terms are not clearly defined as well there are also words put in abbreviation which are difficult to understand*".

Some cases have no clear objective in which difficulty of knowing what to read is the usual question; too vast or too narrow objectives to discuss. Because of the vagueness of the learning objectives prepared by the tutors, there is great variation of understanding of those objectives to read between different groups of students, it creates miss understanding of learning objectives.

Some case preparations do not initiate students for discussion .They always use similar (history and physical examination) approach .tutors do not use different was of case preparation like videos, charts and pictures.

6.3.3. Lack of Standard Way of Case Delivery

Different tutors use different approaches, variation of case delivering system. for example some tutors finished in the first session from history taking up to investigation but other gives up to physical examination. So this create different groups learn differently.

6.4 ASSESSMENT RELATED CHALLENGES

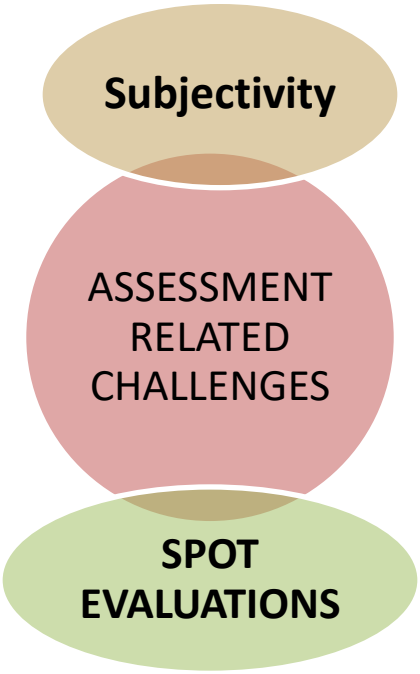

Figure 10 assessment related challenge in implementing PBL at DebreBerhan University College of medicine

6.4.1. Subjectivity

Subjectivity of the assessment is one of the challenges raised by the students.PBL assessment tool is available and given for all tutors. However, the tutors do not use it. They said that, "this assessment tool cannot be functional in our set up; it is too complex and even subjective and if we are going to evaluate the students based on the assessment tool, everybody will fail. For example communication skill is one of the assessment tools and they are expected to communicate with English but they mostly discuss in Amharic".

The tutors also complain that using the assessment tool is very tedious and time consuming and it creates additional workload. As a result, tutors evaluate the students without standards as a base line, which resulted in non-uniform and subjective evaluation of students and creates disappointment among students.

6.4.2. SPOT EVALUATIONS

Spot evaluation is the other complains raised by students. Most of the tutors do evaluation at the end of the module or once up on a time in between. No continues evaluation for most tutors. Students said ‘’somebody smart at last day can get good result, which is unfair; we have to be evaluated daily. Our daily status (performance) is not known since there is no ongoing evaluation and they did not give us feedback based our performance, which results difficult to know which student do the best, to know our weakness and strength.

6.5 FACULTY RELATED CHALLENGES

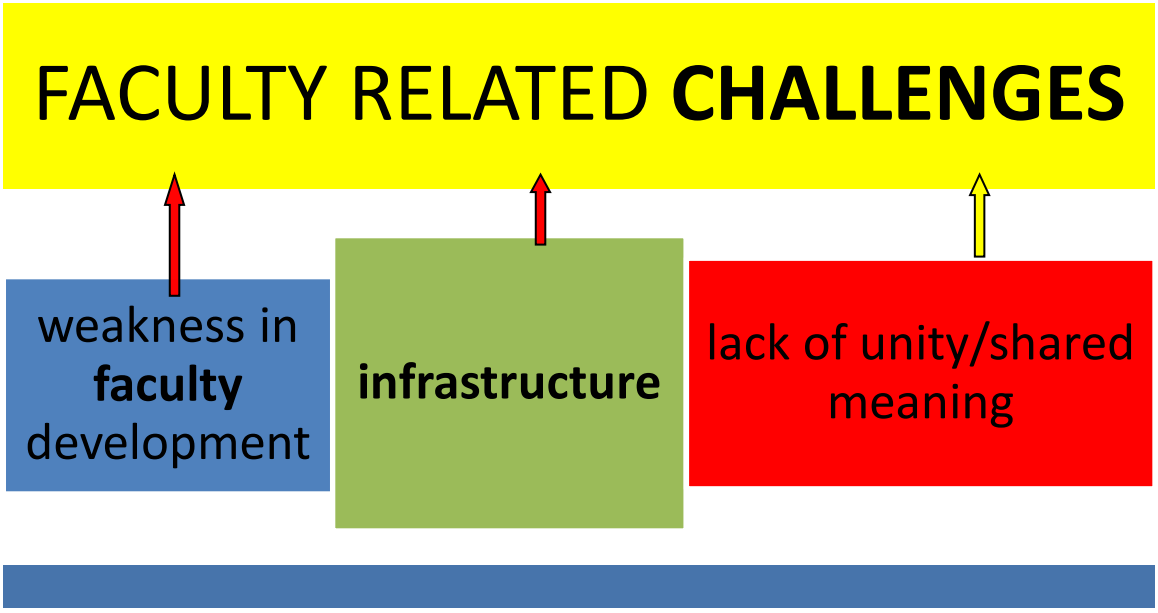

Figure 11 faculty related challenge in implementing PBL at DebreBerhan University College of medicine

6.5.1. Weakness of Faculty Development

Staff training is essential to build up their knowledge and skill. *'The training given for the staff, which is for one week was not enough to be a good facilitator, and also there is no continues capacity building training program ''* .what a coordinator commented. He mentioned the following reasons why the faculty are not given continues capacity building training program *''one is, there is no training center to give in service training, as well as shortage of budget. So due to this we obligated to wait the training given by the ministry of health. But sometimes when we have shortage of tutor we assign new comers by trying to aware some ideas with their colleagues informally, which might not be appropriate to do so. Since the program is new for us, we as an institution need trainings. The other problem is, ''there is high turnover of trained staff due to in seek of further education at which time untrained staff will be assigned.''*

The preclinical coordinator also faces difficulties in coordinating PBL. ‘’the main challenge for me is convincing the teachers to be PBL facilitator, because all most all tutors do not want to be assigned as a tutor or coordinator.

Tutors also complain that ‘’we are not supported, recognized and no reinforcement.’’ The college coordinators said that *‘’we haven’t done on this area, we have a lots Of weakness on creating awareness, changing their attitude, and to create ownership feeling since the curriculum is new, we have not done what we have to do.’’*

PBL case committee is not still organized. Since the curriculum is integrated, it needs all subject experts to prepare the tutor guide in collaboration, which also might increase uniformity of cases and learning objectives’’. Similarly the available PBL bank is not working it needs to be much organized in the bank. The tutor guide is what senior staff prepared. The pre –clinical coordinator also acts as coordinator of PBL, due to work over load he is unable to follow the implementation of PBL as expected.

6.5.2. Infrastructure

PBL is given with two shifts for year I and year II students and classes are available for both year students. The problem is the classes are not attractive for discussion. There is also shortage of white board and marker.

6.5.3. Lack of Unity among the Staff and the Faculty

The coordinator said ‘’actually we are not working on team spirit, which contributes for the ineffectiveness of PBL implementation. And we have weakness on getting continues feedback from the student as well the tutor.’’

7. DISCUSSION

The challenges facing those who are implementing Problem-based Learning (PBL) in teaching and learning are as diverse as they are complex. They range from people and resource issues to organizational matters [17]. What we find here in the study also shows that challenging PBL implementation are ranges from the faculty to tutors, students and the curriculum itself.

Changing to a problem-based learning (PBL) curriculum represents a substantial challenge because many faculty members are unfamiliar with the process should undertake tutor training prior to case writing and assessment workshops (15) .These is the case of our faculty since the faculty members are new for the curriculum there are a lots of complaints raised from the staff .Such as ;there is lack of training, weakness the faculty to get feedback , no Workshop , This result in lack of commitment among the staff. Faculty members need training to develop facilitator skills; otherwise, they may be unsuccessful in Problem-based Learning [44].

For this new approach to teaching and learning, teachers need education and training as well as they need to study individually and in teams (learning communities), exchanging their experiences, incorporating new ideas from outside including formal knowledge [25] Therefore, facilitators who are experts in this new approach to studying are appreciated [25]. Staff perceptions of lack of support or unity often seem valid to them, and may determine the climate of the implementation process [45]

Study finding in the Rosario University School of Medicine neglected to invest in the facilitators' knowledge of PBL facilitation and other social and psychological preparation for staff and students, resulted in resistance to change by both students and staff (20).similarly in this study the faculty complains that tutors are resistant to change (being the facilitator of PBL) and difficulty of convincing the tutors. On the other hand, tutors also disappointed with the faculty because of there are no support from the faculty, they not recognized, not initiated.

Few shortcomings of the implementation process observed in new PBL medical schools .Such as; some block planners may not make course/block blueprints explaining detailed expected learning outcomes,

and weight of different discipline [38]. Here similar finding shows that Most of the tutors are clinical oriented, so that they inclined to be more clinical aspect, which is totally out of the objective of the case. Students complain that 'we asked what we don't know, we read basic science but tutors asked clinical areas. as students' Tutor hates the basic science, they do their work, when we are discussing basic science part' even they don't like to be asked about this portion'. Even though Students in preclinical year are expected to know the basic science; unfortunately, the tutors are mostly misleading of students to the clinical aspect. In health sciences curricula, consensus between basic scientists and clinicians about curriculum content may be difficult to achieve [59].

Unwillingness of the tutors and their resistance to change , inexperience, lack of training, difficulty of leading the group and some personal problems of tutors were identified as the main challenge in implementing PBL from the perspective of tutor. All tutors are coming from conventional curriculum where PBL not used as a teaching and learning methodology. No one has come through it. Student factor and teaching belief played an important part in PBL implementation. Those faculty members with less experience in PBL found it quite difficult to take up the PBL teaching approach and they believed that it was impossible to run PBL as an individual course [40]. Tutors have varies reason why they are not willing such as, they think as if' waste of their time for none relevant thing', since they assume as no contribution in the discussion. They complain that 'mostly we go and sit down, and just observe while students struggle; this is boring for us as tutor'. On the other hand, they also raised the issue of, the case addressees multidisciplinary subjects so they are expected to expert, need to be prepared in such areas. "Only the tutor who believes in the System tries to implement PBL entirely [41]. Similarly on the other study it was stated that students (especially first grade ones) were more dependent on their tutor's content expertise than advanced students [42, 43]. In fact, novice students beginning the PBL curriculum are unfamiliar with the PBL process and mostly have little prior content knowledge.

Staff members at the Faculty of Arts and Social Sciences of Maastricht University [21] consider difficult group dynamics and lacking skills of students as one of the challenging aspects of working with PBL. Students from health professions backgrounds were noticed to dominate the

discussion and forced their new knowledge on the interaction occurring in PBL tutorial [34] Background of students also mentioned as a major challenge for their participation in this study. Result from focus group discussion shows students those who come from non-heath background says'' we are unable to cope up with students who come from health background because all the terms are new for us, when we try to search definitions' of terms they finished integrating system and they proceed further reading and actively participate. Due to this, we feel inferiority, feel of incorrectness and we are not confident enough to participate freely .Even this is also one reason for our result to become low relatively from those of students coming from the health background''.

Dysfunctional tutorial groups investigated as problem[46]. Such as; apathetic groups, groups cynical about PBL, not are discussing problems and groups with passive tutors. In another sudy[47, 48] describe situations in which PBL leads to ritual behaviour, being a group in which specific kinds of cognitive activities such as elaborations and activation of prior knowledge do not take place. In this study, an overactive student who dominates the discussion was found. 'Some students talk unrelated things just for evaluation, not give chance for their colleagues. the students does not know their role as PBL learner and their tutor role, they expect much from their tutor. Students mention the following reason why their groups in not well working these are ''the selected leader /chairperson not give equal chance and unable encourage passive ones , lack of trust each other, some students not come with reading, lack of motivation , lack of shared vision and consistency of similar group for long time''. Some student also not engaged to the group discussion due to personal behavior like shy, Common difficulties in PBL group were listed in a tutor novice guide book [52] such as; the quite group member, dominant group member and the group keep stay storming. Here is also similar finding such as some group members were not actively engaged in to discussion, as well as some group members who are over active.

Designing effective problems is not an easy task [14]. In some PBL curricula students are confronted with problems that are too well-structured, too close ended and too simple, due to which students are not challenged to construct knowledge actively. Furthermore, problems are all too often not realistic. The problems used are mainly paper problems; real patients are seldom used. In this situation, PBL does not stimulate students' towards constructive or contextual learning [14]. PBL case itself was found as challenging for both students and tutor in this study.

Tutors said ‘some of the cases in the curriculum are not clear, challenging (difficult to understand) and, difficult to prepare tutor guide’. Students also complain ‘the cases were not described well, are too short (only chief complaint given), terms not defined and as well there are also words put in abbreviation”.

Several studies acknowledge the positive effects of PBL on various aspects of student learning [28], but the weakest link appears to be the assessment methods, [30]. Like, Evaluation of end of block examinations is done after its end not as an ongoing process [38]. Spot evaluation is raised by students as problem in this study. Most of the tutors do evaluation at the end of the module or once up on a time in between. No continues evaluation for most tutors. Students said ‘’somebody smart at last day can get good result, which is unfair; we have to be evaluated daily Subjectivity of the assessment was raise as the main challenge in this study. The reason was found tutors not use the assessment tool properly .But tutors also gives some reason why they are not use the tool such as ;the assessment tool is not contextualized in their set up, it takes time , they fear students fail, if they use the tool properly. So that what they suggest is using a check list which is prepared by committee organized from this faculty, which they believe it will minimized the biased issue related assessment. In addition, they will happy if there will be written exam to decrease the subjectivity.

8. CONCLUSION AND RECOMMONDATION

8.1 conclusion

The delivery of a Problem-based Learning curriculum in a newly established medical school requires a centralized management structure; a standing Curriculum Management Unit (CMU) to manage and monitor implementation and assessment of the curriculum. Certain conditions enhance the effectiveness of PBL implementation and facilitation by academic staff. These range from a need for a commitment to the philosophy of PBL to a realistic acceptance of a role change. but the major challenge which were identified above like tutors are not commitment, on standardized cases preparation ,no strong management system which recognize the input of staff and poor assessment system .The students coming from different disciplines were also the main challenge for the students as well as for the tutors.

8.2 RECOMMENDATION

The following are some recommendations that could be considered in the implementation of PBL:

- Tutors who participate in PBL should be rewarded by giving recognition for writing problem scenarios and for small group teaching, just as they would be for lecturing.
- Tutors should read more about PBL and how to facilitate small group discussions. They should try to see the situation from the student's viewpoint.
- Faculty should create a forum for facilitators to discuss PBL issues as they arise.

- Assessment of students and evaluation of teaching must be made appropriate for the subject and teaching method. There should be standardized, contextualized, assessment tools /checklist/ developed by organized committee as a college.
- Regular qualitative feedback from students and staff could be sought and acted upon. Proper attention must be paid to the continued development of teaching materials used in PBL, to ensure its suitability and relevance to the subject and the profession. Tutors could also seek feedback more frequently from students.
- Different subject experts should prepare the case. Therefore, the faculty expected to form committee who will responsible preparing smart and good case. PBL bank at the college should also be organized so that tutors can easily avail which helps them to address the expected objectives

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INTERVIEW GUIDE QUESTIONS

Dear Student,

A project titled ”Challenges in the implementation of PBL tutorials” is being carried out in the Faculty of Health Sciences & Medicine at Debre Berhan University by Aklile Semu, a MSc student in Medical Education. This semi-structured interview guide question is being conducted for the purpose of research in the area of challenges in the Problem Based Learning (PBL) implementation from the student perspective.

Your participation will be of value in improving the PBL process. The responses to this interview are anonymous and confidential. Thank you for your participation.

A. Students

I. Demography

1. Age ___
2. Sex____
3. Educational back ground(first degree)___
4. Year of study ____

II. Case related questions

1. What do you think about how the case was prepared for you?
2. Can you easily understand the case especially in the first day?
3. What is your suggestion to make case clear for you? What challenges you want to mention related to the PBL cases?

III. Mode of delivery

1. What do you say about the number of students in each group?
2. How do you see the group formation (members) in PBL? Was there any influence in your participation? What is your suggestion in-group formation?

3. What do you feel about the way of the case delivery system? (Given at a time or in divided).

4. What do you say about the time given for PBL session?
5. What do you say about your tutor during delivering PBL? What are the things you would like to be improved from the tutors perspective?

IV. About assessment

1. What do you think about the way you are being assessed in PBL? What is your feeling?

2. What do you feel about the incorporation of PBL in the new medical curriculum?

Dear Tutors,

A project titled " Challenges in the implementation of PBL tutorials" is being carried out in the Faculty of Health Sciences & Medicine at Debre Berhan University by Aklile Semu, a MSc student in Medical Education. This semi-structured interview guide question is being conducted for the purpose of research in the Problem Based Learning (PBL) implementation from the tutor's perspective.

Your participation will be of value in improving the PBL process. The responses to this questionnaire are anonymous and confidential. Thank you for your participation.

I. Demography
    1. Age
    2. Sex
    3. Profession

II. About PBL cases
    1. What do you know about PBL? What about your willingness to give PBL?why
    2. Are you trained how to prepare PBL cases?
    3. What are the challenges in PBL implementation related with PBL cases? If so, what are your possible suggestions to alleviate the challenges?
    4. What are the participants in case preparation? Does there any affect in the case quality?{ hint: different disciplines)
    5. What do you say time allocation in PBL session?
    6. In general, what is your feeling about the incorporation of PBL in the new medical curriculum?

III. Mode of delivery

1. Are you trained how to deliver PBL?
2. What is your role as tutor in PBL?
3. What are the challenges you encounter while delivering PBL? What possible solutions you want to suggest?
4. What do you say about the infrastructure needed to deliver PBL in your set up ?

IV. Assessment

1. How do you see the current assessment method of PBL?
2. What are your general comments on the assessments of PBL?
3. What do you say about the group formed during PBL?

V. What is the strength of PBL?

,

Dear College and pre clinical coordinator,

A project titled ”Challenges in the implementation of PBL tutorials” is being carried out in the Faculty of Health Sciences & Medicine at DebreBerhan University by Aklile Semu, a MSc student in Medical Education. This semi-structured interview guide question will be conducted for the purpose of research in the area of challenges in the Problem Based Learning (PBL) implementation DebreBerhan university medical college.

Your participation will be of value in improving the PBL process. The responses to these questions are anonymous and confidential. Thank you for your participation.

I. PBL cases

1. What is your role in PBL implementation as a college?
2. What do you say about the implementation of PBL in your college? How do you follow whether it is implemented or not?
3. Are all staffs who are assigned to prepare PBL well trained how to prepare PBL cases?
4. What are the complaints and comments you received from your students and tutors about the PBL cases?
5. Do you have PBL bank at college level?

II. Mode of delivery

1. What do you say about the group formed during PBL
2. Who will be responsible in forming the group and how?
3. How do you see the infrastructure with the delivery of PBL as a college?
4. what challenge you want to mention related to PBL?
5. What possible solutions you want to suggest?

III. About the tutor

1. How do you see the tutor's commitment to run this program?

IV. About assessment

1. What are your general comments on the assessments of PBL?
2. In general, what do you see PBL in the new medical curriculum? Do you think that the incorporation of PBL in this curriculum can benefit students?