

## **Children of Armenia Fund**

### **The experience of Armenian family medicine residents with participatory learning methods in rural health centres**

An evaluation the experience of Armenian family medicine residents' first exposure to participatory learning methods in COAF supported medical centres using qualitative research methods

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# Summary

## Introduction

The Family Medicine residency program in Armenia relies on traditional teacher-centred and didactic learning methods. The program is largely classroom based. Learning through contact with patients is limited. The Children of Armenia Fund has been active in medical education since 2010. It has provided educational support for family doctors and nurses in medical centres and hosted family medicine residents. In July 2016, family physician partners of COAF worked alongside the COAF educational supervisor to provide residents more active methods of learning combined with practical teaching in clinics, a combination which was called participatory learning.

## Method

A two-day seminar for the family medicine residents was designed to include structured patient contact and active classroom learning methods. The program had three components: structured clinical teaching in family medicine clinics, group case presentations, and problem based learning. Participants' experience was evaluated through a focus group discussion led by an independent researcher.

## Results

Six main themes emerged from the focus group: a feeling of responsibility; the opportunity to practice and receive feedback; the merger of theory and practice; the benefits of small group and problem-based learning; being valued; and evidence-based medicine. The findings concord with existing research on the benefits of active learning and resident-patient contact: increase in motivation and engagement of residents during their training. The unexpected finding was the ease and enthusiasm with which residents adapted and valued the novel approach.

## Discussion

Active learning methods have been shown to improve performance in assessments. Although unaccustomed to participatory learning methods, this group of family medicine residents in Armenia were immediately appreciative of the approach. This has implications for family medicine training in Armenia. More student-centred, active learning methods and practical teaching with patients is likely to be acceptable to residents.

**Key words** Family Medicine, Armenia, Residency Training, learning methods, low middle income country, clinical teaching, qualitative, grounded theory

*“Theory without practice is sterile,  
practice without theory is stale”  
(Various attributions)*

## **Background**

Medical education in Armenia, both at undergraduate and postgraduate levels, relies on traditional teaching and learning methods. The Yerevan State Medical University's (YSMU) six-year course for a medical qualification comprises lectures, seminars, practice in a simulation laboratory, and limited clinical rotations. Contact with live patients during rotations varies greatly depending on the individual teacher to the extent that in some rotations residents may have little or no opportunity to practice clinical skills. Summative assessment is through multiple choice questions, viva voce examinations and demonstration on mannequins. Unlike many other programmes around the world, there is no assessment of clinical skills with patients. The family medicine residency is a two year post-graduate program. Between six and eleven residents enter the program each year. Teaching and assessment methods continue those of the undergraduate program. Patient contact and exposure to family medicine is through attendance at the Polyclinic attached to the university and a clinical rotation at clinics during June and July each year.

The educational supervisor of the Children of Armenia Fund (COAF), herself a family physician, has been providing onsite education for doctors and nurses in rural health centers supported by COAF. Since 2010, COAF has participated in the residents' clinical rotation. Residents accompany the educational supervisor on her visits to rural health centers. They observe her work and to have contact with patients but there is no structured teaching programme.

## **Aims**

This was a pilot scheme to build on the existing work of YSMU and COAF with a structured program combining the theoretical and practical teaching. The overarching aim of the educational program was to introduce residents to modern, active learning methods in the clinic and the classroom. The objectives were to construct short sessions in clinical skills training and student-centred learning methods, such as case presentation and problem based learning. The combination of patient contact and active learning was termed “Participatory Learning” to contrast it to the methods residents were accustomed to.

Integral to the pilot was an evaluation of the residents' experience of the scheme. The most appropriate method for doing so is qualitative study.

## Method

### *The educational intervention*

An educational program that could be delivered over two days was designed. The program had three elements:

- 1 Structured contact with patients, including clinical skills teaching in clinics.
- 2 Practice in collaborative working skills through working in groups on case presentations.
- 3 Practice in collaborative working skills through group work on clinical problems (problem based learning).

The timetable is shown in table 1.

### *Teaching and learning activities*

#### 1 Clinic based teaching

Residents were prepared through an introductory talk on a consultation model to ensure they knew what was expected of them.

The learning set divided into two groups to attend to patients, each supported by two teachers. Patients were notified that they would be consulting trainees initially then by family doctors. Residents took it in turn to attend patients. Each consultation followed a predetermined structure. Each resident would take a history from their patient following the model presented earlier. The teachers would then invite the other residents if they had any questions to add before completing the history phase by offering their own. The resident would then examine the patient with immediate feedback from the teachers. The group would then discuss the differential diagnosis and provide management options. The teachers pressed residents to come up with their own conclusions and to explain their rationale. Finally, the resident would explain the illness and management plan to the patient. After each consultation, the entire group discussed the case systematically: the structure of the consultation, the patient-doctor interaction, the medical content and any additional teaching points.

#### 2 Case presentations

Each group selected and worked up two cases they had seen in the clinic that would be suitable or educational for presentation to the whole learning set. They prepared the presentations using the classic SOAP (Subjective Objective Assessment Plan) format. They had access to textbooks and the web to look up supporting material. The presentation was followed by a discussion by all residents and teachers.

### 3 Problem based learning

A teacher presented a case scenario on type 2 diabetes and facilitated a discussion on the issues raised by the case. Following the discussion, the learning set was divided into three pairs. Each pair was given a problem, arising from the issues raised, to answer. Textbooks and web access were available. The learning set reconvened to present their results and discuss the presentations collectively. The case scenario had been adapted from material used successfully at the University of Rochester Medical School, NY, USA.

#### *Evaluation*

The learning set met with an external evaluator working independently of the program preceptors. Participants were assured of the confidentiality of the discussion. They were assured that the report would be a summary of the discussion and would not identify individual contributions. Informed consent was obtained. A focus group discussion (FGD) was held using a semi-structured interview guide. The FGD was audiotaped and transcribed verbatim in Armenian. The transcription was analysed using grounded theory methodology to develop a theoretic framework or themes that emerged of the students' experience.

## **Results**

Out of eight eligible second year residents at YSMU, only five were able to take up the offer. Two who had intended to join were unavailable. One was called for military service and the other was posted to a distant province on rotation. Additionally a recent graduate from the residency joined the program as a junior level preceptor, precepting in the clinic, but joining in on the group based learning during the other two sessions. The learning set divided into two groups for the clinical session, each group attended five patients.

Five themes emerged from the FGD: a feeling of responsibility; the opportunity to practice and receive feedback; the merger of theory and practice; the benefits of small group and problem-based learning; and evidence-based medicine

#### *A feeling of responsibility*

Residents reported that they felt responsible for getting the correct diagnosis and treatment.

*“You feel responsible for the patient you are working with, unlike just observing doctors at work and you communicate with the patient, examining him/her and*

*simultaneously thinking what the next step in treatment would be... in other words it is more interesting, because you take the responsibility”*

This novel position was not one they were comfortable with. Tied to this was a fear of making mistakes in front of others. However, they reported that continuing collaboration helped them to overcome such fear and to use identified weaknesses for further study.

#### *The opportunity to practice and receive feedback*

This was the first time that they had had an opportunity to conduct a consultation themselves. They valued the opportunity to take a history themselves and to practice physical examination under direct supervision on real patients in contrast to previous patient exposure that had taken two passive forms. First, observation of their teachers at work; second, conversing with patients and reporting back to their instructors. Neither experience had included feedback on the residents’ performance or linkage to classroom teaching. Previous examination practice had been largely confined to mannequins, or possibly each other.

*“It was interesting as both the patient and the professional were present and their interaction made more impression on you and in the future, when I come across a similar case, I will approach the patient with much more confidence... this will make our future practice easier”.*

The residents perceived the feedback during consultations as the teachers’ “very gently, ethically intervening if they had done something wrong.” The residents reported that the feedback given after consultations had helped them to identify further weaknesses and encouraged further reading.

*“As we observe the skill set we should know, but do not, what skill set should have used, but did not, afterwards you go and read more about it thus learn more about it”*

#### *The merger of theory and practice*

Another benefit from clinic teaching was the merger of theory and practice through using specific findings in the cases as a springboard for general discussion. In contrast, the residency program was largely theoretical with rare linkage to practice.

One example of the theory-practice merger started with the identification musculoskeletal examination as a learning need during clinic attendance. A session on joint examination was added to the following day’s classroom teaching. A talk on the

general principles of musculoskeletal examination was followed by a practical demonstration of shoulder examination. The residents reported that such passage from observed practice to general principles to particular application helped them to structure their knowledge.

*“The step-by-step approach we observed was new and different ... erm ...this novelty was very positive. ”.*

#### *Benefits from small group and problem-based learning*

Although this was their first exposure to small group work and problem-based learning, and a brief one at that, they perceived benefits in the learning environment. They identified three beneficial differences from their previous learning experiences. First, learning to study collaboratively.

*“Group work combining the experiences of the group and each individual was completely new”.*

*“Group work was very interesting as I was working with a patient and when I had no more questions, someone else would have a questions and I would understand the specific question I should have asked too”.*

Second, to work up questions to identify relevant topics on which to focus their study

*“We chose to discuss the patients that we had seen and during the discussion we realized that there were other questions which we did not ask the patient”.*

Third, to summarize lessons that they had learnt

*“... It is one thing you learn merely for learning, but using this approach you have discussion over the issue, try to accumulate knowledge, thus it is more memorable, then studying only separate topics”*

#### *Being valued*

Asking residents to consider the differential diagnosis and management of cases--through a question and answer method--made them feel that their opinions were valued. Being treated as an equal and respected was novel and created a supportive environment for learning.

*“In this situation, there was no criticism of the students and they were really centred on us”.*



*“They were not like ordinary lecturers and there was no hierarchy in communication, like they are above you and you are below them”*

#### *Evidence-based medicine*

The residents had picked up that the teachers emphasized an evidence-based approach even though at no time did the teachers use that phrase. During PBL, the teachers had used statements such as “research shows that tight control of HbA<sub>1c</sub> does more harm than good” and “although these tests [physical examination of the shoulder] are useful, often a precise diagnosis cannot be made”.

*“They were more inclined towards an evidence-based approach, which maybe is a bit of a strict approach, yet whatever information they provided was backed up with a reliable source”.*

## **Discussion**

#### *Strengths and Limitations*

The study is limited by the self-selected nature of the group since attendance was voluntary. However, a substantial proportion participated and the whole learning set was included in the evaluation. The focus group facilitator was independent of the program providers and used an open method of evaluation.

#### *Lessons from the learners’ perspectives*

There were several surprises for the course providers. First, although the disjunction between theory and practice in Armenian medical education was known to them, its extent was greater than had been expected. Second, the residents developed a sense of responsibility for the patients although the course providers retained ultimate responsibility. Understanding whether this was a characteristic of the individuals or of the teaching environment did not emerge in the FGD. Third, the students felt that the teachers were demonstrably practicing evidence-based medicine whereas what the teachers thought they had done was to place statements in context and to share uncertainty. Again, understanding why this was so did not emerge but one can conjecture that backing opinion with new or updated evidence was a novel experience for them.

### *Lessons for teaching*

The residents' experience - feeling valued, a sense of achievement and a facilitating atmosphere - fits in with research showing that PBL improves these aspects of the learning environment [1]. Our residents' perceptions of patient contact also concord with research findings: it integrates the curriculum and motivates students towards their career choice [2]. The value of patient contact is widely recognized to the extent that the trend is towards introducing it earlier in medical courses in many countries.

Student feedback cannot provide evidence for the effectiveness of a teaching program[3]. Nevertheless, based on studies of the elements of PL, there are good reasons for believing that our program would be effective. Such studies have shown them to be superior to traditional forms of teaching. A recent review of active learning methods found that student performance in tests increased by 0.47 standard deviations under active learning while traditional lecturing led to a greater risk of failing (odds ratio 1.95) [4]. Active learning methods are more likely to lead to self-directed learning in the long term, an approach necessary for the lifelong learning necessary for physicians [5].

The prior belief of the program providers was that the residents would not adapt to the innovation during their first contact. Indeed, the program was a pilot for a longer term strategy of embedding it into the COAF program. The experience of the participants overturned this belief. The learners' experience was uniformly positive. They not only adapted enthusiastically and rapidly to the program but they also perceived immediately the improved learning environment. These findings may be transferable to other low middle-income countries that retain traditional modes of medical education should be considered. Certainly for family medicine training in Armenia, PL is not only feasible but will be enthusiastically welcomed.

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*Preceptors and residents at the COAF offices, July 2016*

## Appendix

**Table 1 timetable**

13 July Day 1	Morning Structured clinical skills teaching in clinics 3 hours (two hours travelling time)	Location: Myasnikyan rural medical centre A brief talk on consultation tasks was given. The learning set divided into two groups, each led by two preceptors. Residents took it in turn to take a history, examine the patient, suggest a differential diagnosis and provide management options. The preceptors pressed residents to come up with their own conclusions and to explain their rationale. After each consultation, the entire group discussed the case systematically: the structure of the consultation, the patient-doctor interaction, and any additional teaching points.
13 July Day 1	Afternoon Collaborative working through case presentation 3 hours	Location: COAF offices. Each group selected and worked up two cases from the morning for presentation using the classic SOAP (Subjective Objective Assessment Plan) format. They presented their cases to the whole set and preceptors for discussion.
14 July Day 2	Day 2 Morning Collaborative working through problem based learning 3 hours	Location: COAF offices. A case scenario adapted from material provided by the University of Rochester Medical School, USA was presented and discussed. Following the discussion, the learning set was divided into three pairs and each pair given a question/problem to answer. Textbooks and internet access were available. The learning set reconvened to present their results and for collective discussion.
14 July Day 2	Day 2 Afternoon 90 minutes Evaluation	Location: COAF offices. Focus group discussion.

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