

Evaluation of a Pilot Interprofessional Arclight™ Workshop for Healthcare Students in Rwanda: Promoting Collaborative Practice in Eye Health

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Abstract

Preventable and treatable visual impairment affects more than 1 billion people worldwide. Rwanda has an estimated visual impairment prevalence of 3.7% amongst the 12 million inhabitants. Around one third of this demand could be addressed through a more integrated and collaborative approach, particularly in primary eye care services. Healthcare students, therefore, need to be prepared for collaborative practice in eye health through interprofessional learning. Interprofessional workshops were piloted with ophthalmic clinical officer, medical clinical officer, nursing and medical students from the University of Rwanda. The aim was to promote collaborative practice by teaching students how to assess and recognise common eye conditions using the Arclight; a low cost, solar powered, portable ophthalmoscope designed for use in low resource settings. Students reported that the workshop content was relevant to all professional groups. They valued the opportunity to learn interprofessionally, share their knowledge and perspectives, and acquire new knowledge and skills together. This pilot helped to identify the most relevant skills and knowledge for future interprofessional eye health training. It enabled the facilitators to reflect on how best to maintain a balance between a quality interprofessional experience and the more specific eye health related learning objectives.

Introduction

Preventable and treatable visual impairment affects more than 1 billion people worldwide (WHO, 2019a). South Asia and Sub-Saharan Africa carry the greatest burden. Although various initiatives have made a positive impact on blindness reduction, the need is still greatest where access to eye health specialists and diagnostic equipment is least (Bourne et al., 2017). Rwanda has an estimated visual impairment prevalence of 3.7% amongst the 12 million inhabitants. One third of this demand could be addressed by the delivery of integrated primary eye care (PEC) services (Bright et al, 2018). The implementation of PEC programmes in Sub-Saharan Africa has increased training for ophthalmic clinical officers (OCOs) and nurses to deliver assess and diagnose common eye conditions in health centres and community settings. There is, however, a greater need for a more collaborative approach to tackle this global health issue (WHO, 2019a; 2019b; 2010). Interprofessional education (IPE), where two or more professions learn with, from and about each other (CAIPE, 2002), can help to improve collaborative practice, increase understanding and appreciation of changing roles and changing scope of practice in eye health. Although momentum with IPE in Africa is building, reported initiatives have mainly occurred in South Africa (Botma & Snyman, 2019).

Background

The College of Medicine and Health Sciences, University of Rwanda and the School of Medicine, University of St Andrews collaborated to design, implement, and evaluate pilot IPE workshops, focussing on eye health, for healthcare students from University of Rwanda. This paper focuses on one of the objectives of this study, which was to evaluate students' experience of these workshops.

The University of Rwanda delivers a range of health professional programmes across their three campuses. These include clinical medical officer (CMO), OCO, nursing, and medical training programmes. The aim was to promote collaborative practice for eye health amongst an interprofessional mix of students and to use the Arclight device as a vehicle for IPE. The Arclight is a low cost, solar powered, portable ophthalmoscope designed for the needs of users in low resource settings (Blundell et al.,2018; Kousha & Blaikie, 2019).

Methods

The workshops took place at the University of Rwanda, College of Medicine and Health Sciences, Remera Campus. Ethical approval was gained from the University of Rwanda and the University of St Andrews. A purposeful sampling method was used to target 180 year three and four nursing students from the advanced diploma and bachelor programmes, medical students, and students from the CMO and OCO programmes. Comprehensive eye care training is inherent in the OCO programme but the depth of knowledge varies between the other programmes. It was felt that this variation in knowledge would provide a valuable opportunity for students to share their knowledge and skills.

Participants were recruited through advertisement of the workshop and study information which was emailed to students by the programme leads. The workshops were arranged during the university holiday period and offered as a voluntary opportunity. Students were invited to contact a member of the research team (JBS) to express their interest in taking part. JBS confirmed their place in the workshop and then sent a direct link to an online study consent form and the pre-workshop survey. The full quota of 180 students was recruited. Nine half-day workshops involving approximately 20 students in each workshop were planned over the course of one week. Travel expenses were reimbursed for students travelling from other campuses.

Table 1 provides an overview of the workshop plan. The first part of the workshop consisted of students discussing the enablers and barriers to effective interprofessional working, and comparing where their knowledge and skills related to eye health overlapped and where this may have been profession specific. The second part of the workshop focussed on eye assessment skills using the Arclight device. Students were encouraged to practise these skills in pairs or threes and to ensure these groupings had a mix of students from different professions. The workshops were facilitated by the research team who were also from a mix of health professional backgrounds. Each workshop consisted of three facilitators with at least one facilitator with expertise in eye care and ophthalmoscopy.

Table 1. Interprofessional Arclight workshop plan

Total time	3 hours (including 15-minute break)
Number of workshop participants	20
Number of facilitators	3 (1 with ophthalmic background)
Aim:	To promote interprofessional collaborative practice in eye health
Learning outcomes:	<ul style="list-style-type: none"> • Learn with, from and about different healthcare professionals including their roles and responsibilities in relation to eye health. • Develop knowledge and skills to undertake a basic eye examination using the Arclight. • Understand the importance of collaborative practice in eye health.
Interprofessional learning activities and timings	Facilitator introductions. Explain purpose of the workshop and provide an overview of the global health issue of blindness and visual impairment.
Part 1 (1 hour including 15 minute break)	<p>Workshop participants subdivided into interprofessional groups of four to discuss topics including:</p> <p>Who are you and what are you studying?</p> <p>What knowledge and skills do you cover in your training related to eye health?</p> <p>What are the roles and responsibilities of your profession in relation to eye health?</p> <p>What factors contribute to effective and ineffective interprofessional collaboration?</p> <p>Feedback from groups coordinated by facilitators. Facilitators noted main discussion points on a flip chart.</p>
Part 2	<p>Demonstration and training in practical eye examination skills:</p> <p>How to assess visual acuity.</p> <p>How to use the Arclight device to examine the front of the eye, red reflex and fundus.</p>
Part 3 (1 hour)	<p>Use of Arclight device and simulated eye models to examine common eye conditions.</p> <p>Close of workshop</p>

Following each workshop, an electronic link to an online survey was opened to participants to complete within one week. Participants were asked to provide free text

comments relating to aspects they found interesting or beneficial; aspects least useful or requiring improvement; and further comments and suggestions for future workshops. The free text comments were thematically analysed using the framework method (Ritchie & Spencer, 1994).

Results

A total of 179 students participated in the workshops. Table 2 provides a breakdown of workshop participants by their programme of study. 69% of workshop participants (n=123) provided free text comments in the post-workshop survey.

Table 2. Total number of workshop participants and their programmes of study

Programme of Study	Number of Participants n (%)
Nursing (Bachelors Programme)	59 (33%)
Nursing (Advanced Diploma Programme)	53 (29.6%)
General Medicine Programme	31 (17.3%)
Clinical Medical Officer programme	20 (10.6%)
Ophthalmic Clinical Officer Programme	16 (8.9%)
Total	179

Table 3 provides a summary of the main themes and sample quotes from the free text comments. The value of the IPE experience and relevance of the knowledge and skills learned was identified as two of the main themes in relation to aspects students found beneficial. Students valued the opportunity to learn interprofessionally, share their knowledge and perspectives, and acquire new knowledge and skills together. Although the OCO students had previously learned how to examine eyes and were knowledgeable of common eye

conditions, they still valued the interprofessional element, sharing their knowledge and skills and learning how to use the Arclight device.

The majority of students reported that the skills and knowledge they learned within the workshop were relevant to their professional practice. In particular: recognising common eye conditions, learning how to use the Arclight to examine the front and back of the eye, and appreciating the Arclight as a portable and practical tool to help with the treatment and prevention of blindness.

The limitation of time was identified as a main area for development. One student felt that the workshop time focussed more on how to use the Arclight rather than IPE. A number of students highlighted that more time was required to practice skills and to learn more about treatment, management, and referral processes. In relation to further improving their IPE experience, it was suggested that more IPE should occur and that other professional groups should learn how to assess eyes and recognise common conditions.

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Table 3. Workshop evaluation: main themes and sample quotes

Survey Question	Main Theme	Sample Quotes from Free Text Comments
<p>What aspects of the workshop did you find most interesting of beneficial?</p>	<p>Experience of IPE</p>	<p>“It was very interesting to work with individuals from other professionals and get to learn from their point of view”. (Medical student)</p> <p>“Learning together with others from different professions about the same thing. Interacting with other fellow students and helping them to know what you know”. (Ophthalmic clinical officer student)</p> <p>“Working with different students from different disciplines”. (Bachelor nursing student)</p> <p>“To connect people from different professions and share their knowledge “. (Advanced diploma nursing student)</p>
	<p>Relevance of skills learned with Arclight device</p>	<p>“As future ophthalmic clinical officers, it will help me to examine the anterior segment and posterior segments of the eye wherever I will be because it is portable”. (Ophthalmic clinical officer student)</p> <p>“This workshop helps young health care providers to improve eyes examination skills and early detection of eye condition in order to prevent avoidable eye impairment”. (Clinical medical officer student)</p> <p>“Getting knowledge and practice about examining internal and external eye assessment and diagnosing the different conditions that affects eyes”. (Bachelor nursing student)</p> <p>“I have acquired practical evidenced knowledge to examine and diagnose some conditions of the eye, like cataract and others. My most interest is about examining the eye with the Arclight to diagnose some eye conditions which may result into blindness when diagnosed later or in advanced stages”. (Clinical medical officer student)</p>
<p>Areas for development and suggestions for improvement</p>	<p>Limited time. Balance of skills acquisition and IPE</p>	<p>“While examining eyes in order to diagnose the time was short, and some of them I did not clearly understand”. (Bachelor nursing student)</p> <p>“The time was limited and we have not been able to learn funduscopy well using the samples we had”. (Medical student)</p> <p>“I wish an increased time for training so that the participants can know much in pathology of the eye and management of diseases”. (Ophthalmic clinical officer student)</p> <p>“The time we spent together is inadequate compared to the skills required”. (Clinical medical officer student)</p>

	<p>“Speaking for myself and the few people I talked to, we couldn't link the Arclight and ophthalmology training and the IPE. I think most of us thought it was an Arclight training more than it was an IPE training”. (Medical student)</p>
<p>More IPE and involvement of other professionals</p>	<p>“We need to train other health care providers after getting more information and knowledge about it”. (Advanced diploma nursing student)</p> <p>“You should teach those instruments to other students for patients' better outcome”. (Bachelor nursing student)</p> <p>“Increase more training about IPE so that we are sure to handle those big number of people who are suffer from eye diseases in Sub Saharan region”. (Bachelor nursing student)</p> <p>“A wide range of students to take part in the activities and the need of a long or more time given to share knowledge”. (Ophthalmic clinical officer student)</p> <p>“Extend to include more topics and include more people”. (Medical student)</p>
<p>Management and treatment of eye conditions</p>	<p>“Provide enough time for demonstration and practice... and teach the emergency eye care management. As nurses, it is better to know what to do in case there is emergency intervention needed”. (Bachelor nursing student)</p> <p>“How to identify the normal and abnormal eye and how every health care providers can intervene for better eye care to people”. (Ophthalmic clinical officer student)</p> <p>“More workshops for accurate diagnosis management for various eye pathologies”. (Bachelor nursing student)</p>

Discussion

Evaluating the student experience of IPE has helped identify relevant learning activities for an interprofessional workshop related to eye health. Encouragingly, the students stated their desire to learn more about treatment, management, and referral routes, reinforcing the impression that they were engaged in the workshop and that the content was perceived as both relevant and important to them. This is significant feedback in view of the desired need for more healthcare workers to assess, detect and manage eye conditions in low resource regions (WHO, 2019a; 2019b).

These pilot workshops have enabled facilitators to reflect on the efforts to maintain interprofessional interactions whilst teaching the students specific skills using the Arclight. During the practising of eye examination skills, facilitators encouraged a mix of professional groups. This was however difficult to monitor and always implement. In skills based IPE, careful thought should be given to time allocation to ensure all content is covered with equal weighting but without jeopardising the validity of the interprofessional experience. Learning activities should maximise interprofessional engagement and should be both active and interactive (Barr & Low, 2013).

Students were happy to both share prior knowledge and skills and learn new skills. During the workshops, the facilitators noted that the OCO students, in particular, were forthcoming in helping the other students with the eye assessment skills such as visual acuity testing and helping others to identify common eye conditions.

Limitations

There are several limitations to this study. Firstly; students were 'invited' to the workshops, creating a self-selecting cohort. In addition, each student received an Arclight device to keep which may have influenced positive feedback. Another limitation of the study is the lack of long term follow up to observe any positive impact of this workshop on their practice.

Conclusion

Collaborative practice in eye health is important in view of the changing scope of practice to tackle the global health issue of visual impairment. In this study, the Arclight provided a valuable vehicle for IPE, promoting collaborative eye health practice amongst nursing, medical, MCO and OCO students. Student evaluation confirmed the relevance of the skills and knowledge covered in the workshop. In the planning of future workshops, we have learnt that careful consideration of content and timing will be needed to maintain the richness and value of IPE. Consequently, we feel the IPE described in this paper opens further opportunities to build on this initiative and to explore the positive impact of IPE and collaborative practice in Africa.

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