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Original Article

Do trauma courses change practice? A qualitative review of 20 courses in East, Central and Southern Africa

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ABSTRACT

Background: Trauma courses have been shown to improve clinical knowledge and patient outcomes. However, little is known about the individual drivers of change in practice amongst course participants in their home clinic environment.
Methods: Front-line healthcare workers participated in a two-day Primary Trauma Care (PTC) course. Immediately after the course participants completed an evaluation survey on intended change in the management of trauma patients. Six months after the course, participants completed a survey on actual changes that had occurred.
Results: A total of 451 participants were sampled, with 321 responding at 6 months, from 40 courses across East, Central and Southern Africa. The most commonly reported intended change was the adoption of an ABCDE/systematic approach (53%). Six months after the course, 92.7% of respondents reported that they had made changes in their management, with adoption of an ABCDE/systematic approach (50.0%) remaining most common. 77% of participants reported an improvement in departmental trauma management, 26% reported an increase in staffing, 29% an increase in equipment and 68% of participants had gone on to train other healthcare workers in PTC.
Conclusion: The findings suggest that PTC courses not only improve individual management of trauma patients but also but is also associated with beneficial effects for participants' host institutions with regards to staffing, equipment and training.

1 Introduction

Injury is the fifth leading cause of death globally with an estimated mortality of 4.8 million people in 2013 [1]. Injuries also confer significant morbidity with an estimated 973 million people in 2013 sustaining an injury significant enough to warrant a healthcare intervention [2]. A significant proportion of this burden of disease lies in sub-Saharan Africa with injury the cause of 9.6% of all deaths [3,4]. Current projections estimate that this burden of disease will only increase given the increasing growth in motorisation in the region [1]. Despite Africa's considerable disease burden it has only 0.5 surgeons (IQR 0.2–1.0) per 100,000 of the population [5]. Further compounding the challenges of a stretched workforce is the scarcity and sometimes lack of formal training in trauma management. As such, there exists a significant disparity between the necessity for and provision of adequate training in trauma management [6,7].

Trauma management in high-income countries is protocol driven, based on the principles of the Advanced Trauma and Life Support (ATLS) Course developed by the American College of Surgeons [8]. The ATLS course has not been extensively incorporated into training programs in sub-Saharan Africa because of numerous limitations associated with healthcare training and practice in many low- and middle-income countries (LMICs) such as limited resources, funding and trained staff [9]. In order to address the need for improved trauma care and shortage of training in trauma management, the Primary Trauma Care (PTC) Foundation was established in 1997 [10]. The PTC course is endorsed by the WHO, who have published the course manual

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since 2003. The PTC course, which has been delivered in over 60 countries to date, aims to train front-line health workers including clinical officers, paramedics, nurses and doctors in the basic principles of trauma management in order to reduce the devastating human cost of injury in LMICs [10].

In 2012, the University of Oxford partnered with the College of Surgeons of East, Central and Southern Africa (COSECSA) to improve the standard of training in trauma management and musculoskeletal injuries within the region that covers the 10 COSECSA countries (Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe). Through the support of the UK Department for International Development (DFID) and the Tropical Health Education Trust (THET) the COSECSA Oxford Orthopaedic Link (COOL) was established to deliver the PTC course. This qualitative study aims to explore the impact that attendance at a PTC course has on participants' practice of trauma management in their home clinic environment.

2 Methods

The PTC course runs over 2 days and is taught through the medium of lectures, moulages (practical sessions with actors), small group scenarios and practical skills stations where the "ABCDE" approach to trauma management is introduced and explained. Experienced and trained clinicians, working on a voluntary basis, deliver the courses. In order to improve the sustainability of the course it is taught within a 5-day programme consisting of a 2:1:2 format where the initial 2 day PTC course is followed by a 1 day instructor course. The instructor course is aimed at teaching candidates, who had either been put forward by their departmental heads as potential instructors or had demonstrated good clinical and leadership skills over the last 2 days, how to deliver the course to new trainees. The 1 day instructor course is followed by another 2 day PTC course that the newly trained instructors help run. The cascading 2:1:2 course model is described in further detail elsewhere [11].

Front-line healthcare workers participated in a 2 day PTC course. Immediately after the course participants completed a paper evaluation survey on intended changes in the management of trauma patients. Six months after the PTC course, an electronic survey on actual changes that had occurred, administered via the online survey engine (surveymonkey), was sent to course participants. This survey was to determine personal clinical, departmental, equipment and staff changes that course attendees had observed 6 months after participating in the PTC course. The survey explored both qualitative and quantitative responses. A total of 100 2 day PTC courses as described above were run over a four-year period in the ten countries (2012–2016) with more than 2000 individuals trained. 451 participants' immediate post-course surveys, from a sample of ten courses (two courses per COSECSA country), were selected for analysis. All 6-month post-course surveys were included in analysis.

Computerised spreadsheet tools were used to generate descriptive statistics using Excel for Mac 2011; version 13.3.4 (Microsoft, Redmond, WA, USA). Qualitative responses were analysed using a framework in behaviour change devised and validated by Cane et al. which consists of the following domains; knowledge, skills, social/professional role and identity, beliefs about capabilities, optimism, beliefs about consequences, reinforcements, intentions, goals, memory, attention and decision processes, environmental context and resources, social influences, emotions and behavioural regulation [12]. Using this framework, a descriptive thematic analysis was conducted [13,14] based on definitions defined by the American Psychological Association [15]. The results were discussed in depth between three authors (R.O, G. L & C.L) in an iterative process until conceptual saturation was reached and the finalisation of major thematic results through a data reduction process by consensus.

Changes in management of trauma cases were grouped under the following headings: ABCDE, systematic approach and triage; improvement of specific skills; improvement of staff, training and systems; improvement of equipment; and other. Responses to perceived departmental changes were grouped under the following headings; personnel/teams, physical changes and patient management. Reported staff changes are presented quantitatively but common themes amongst the qualitative responses are also presented. Responses to changes in equipment were grouped under the headings Airway, Breathing, Circulation and other significant equipment, as was most applicable. Participants' reported involvement in training after the PTC course is reported quantitatively in terms of number of people trained.

2.1 Ethics

The Medical Sciences Inter Divisional Research Ethics Committee, Research Services, University of Oxford gave ethical approval for the study. All course attendees gave written informed consent

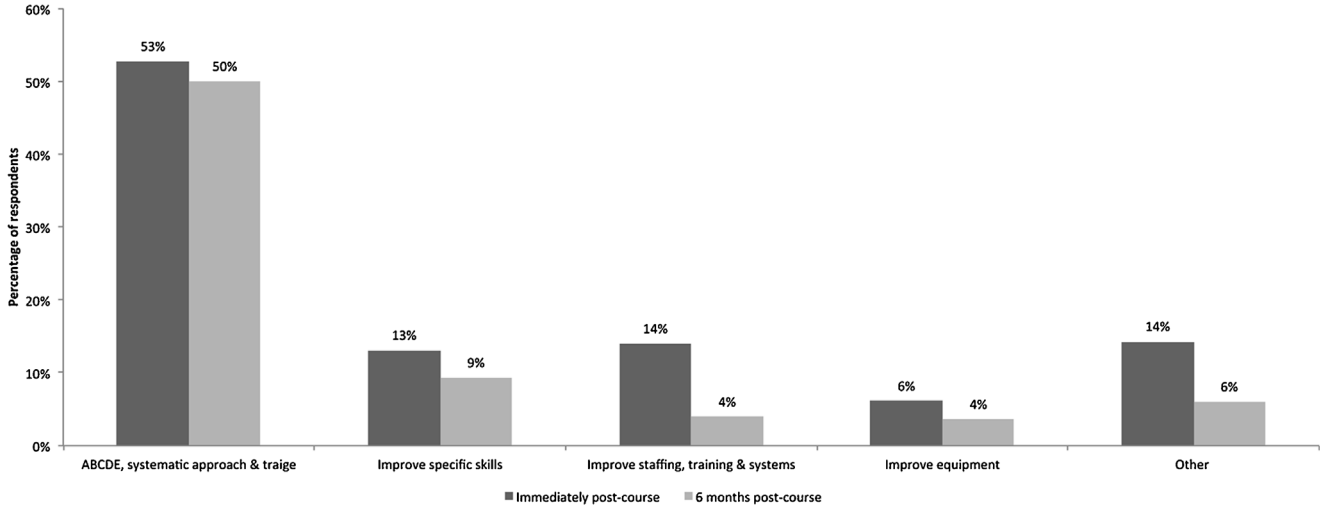

Fig 1. Course participants 'intended changes' immediately after the PTC course compared with self-reported actual changes 6 months after the course.

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