

LETTER TO THE EDITOR

The impact of online toxicology training on Fijian emergency doctors' knowledge: the Global Educational Toxicology Uniting Project (GETUP)

Dear Editor,

More than one million deaths around the world occur annually because of suicide and accidental poisoning.[1] A significant number of these are attributable to deliberate self-poisoning. Unfortunately, many physicians worldwide, especially in developing nations, do not have access to formal toxicology training programs.[2] The Global Educational Toxicology Uniting Project (GETUP) was established to help overcome these barriers (www.acmt.net/GETUP.html).[3] Our aim was to investigate whether knowledge of poisoning pathophysiology, risk assessment, and management could be improved by an online toxicology course delivered to emergency doctors in a developing country.

We piloted a prospective introductory Internet-based toxicology curriculum delivered to Fijian emergency doctors from the two major Fijian hospital services (Colonial War Memorial Hospital, Suva, Fiji and Lautoka Hospital, Lautoka, Fiji). The 15-module introductory toxicology curriculum was delivered from August to October 2015.

The curriculum was adapted from a US-based online course (Physician Education and Assessment Center, Johns Hopkins University, Baltimore, USA) and supplemented with regionally relevant topics (organophosphate and paraquat) adapted from Wikitox. The course required no pre-reading and was structured as series of case-based modules supported by supplied relevant reading material.

Doctors participated in a set of pre- and post-module multiple-choice questions (MCQ) immediately before and after each online case-based module. Pre and post MCQs were not identical, but tested the same educational objectives. The primary outcome was to determine the difference in MCQ score pre and post module for each doctor. Approval to analyze and store the de-identified information was given by the Austin Health Research Ethics Committee, Victoria, Australia.

A total of 1280 multiple choice questions were completed by eight emergency doctors and consisted a substantial proportion of medical staff in the emergency training program (8 out of 9, 89%) from these two hospitals. Each doctor completed 80 pre-test and 80 post-test MCQs. The median age of doctors was 30 (IQR 29–35) years old: three were male (37.5%) and five were female (62.5%). Of the emergency residents, four (50%) were current masters of emergency medicine and three (50%) were diploma of emergency medicine students undertaking their degrees through the Fiji National University. Prior to the course, all doctors (100%) identified

Table 1. Group ($n = 8$) pre-and post-module median MCQ scores.

Modules	Pre-module median scores (IQR)	Post-module median scores (IQR)
Toxidromes	50 (36,67)	100 (91,100)
Approach to coma	61 (47,74)	100 (89,100)
Organophosphates	83 (41,100)	100 (100,100)
Acetaminophen	41 (25,71)	80 (60,100)
Antidepressants	50 (42,71)	100 (64,100)
Antidiabetic medications	66 (37,66)	86 (70,97)
Carbon Monoxide and Methemoglobinaemia	37 (25,60)	75 (62,96)
Digoxin	55 (42,80)	75 (60,80)
Lithium	46 (33,66)	67 (67,100)
Salicylate	50 (25,69)	75 (50,75)
Sedative-hypnotic	50 (25,69)	75 (75,93)
Sympathomimetic	41 (20,63)	83 (77,100)
Toxic alcohols	63 (47,64)	73 (63,94)
Caustic Ingestion	37 (28,60)	56 (40,72)
Paraquat poisoning	100 (100,100)	100 (100,100)

the lack of toxicology education or services available besides conferences offered through GETUP.

Overall, median pre-module MCQ scores improved from 52% (IQR 34,74%) compared to post module MCQ scores 83% (IQR 67,100%) ($p < .0001$). Across all modules, doctors improved in pre- and post-test module scores (Table 1).

Improving knowledge is one pre-requisite to improving clinical practice. A limitation of this study is that we have not examined whether this training has been retained and translated into practice.

In summary, an online toxicology curriculum improved knowledge and had high acceptability in emergency doctors in Fiji. Specific, individualized feedback is immediately available to learners and instructors, who can tailor learning according to their goals and needs. Similar models for toxicology education could benefit other similar contexts, and future inquiries should evaluate the benefits of such courses for emergency medicine practice.

Disclosure statement


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