

A Comparative Study Of A New Mobile TOXBASE App With The Current Internet Poisons Database

Connor Bowbeer, Lindsay Gordon, Gill Jackson, D Nick Bateman, Michael Eddleston, James Dear. NPIS Edinburgh, Edinburgh, UK

Introduction

Poisoning is a common reason for emergency department (ED) attendance. Toxicological emergencies can be difficult to manage and rapid access to poison specific information is essential. TOXBASE is the UK and Ireland internet-based poisons database run by the National Poisons Information Service. Currently, this database is only available online, however, many clinicians own application or “app” capable smartphones and tablet PCs. A new TOXBASE app has been developed that supplies regularly updated toxicological information and stores it directly to the mobile device’s memory, allowing access to the information immediately at the patient’s bedside, independent of internet connection. This study compared the app with the TOXBASE website, and gathered feedback on the app’s ease of use from medical staff and students.

Method

Medical students, ED nurses, and ED doctors completed two fictional toxicological scenarios involving four information gathering tasks. All participants were randomised to complete one scenario using the TOXBASE website and the other scenario using the app on either an Apple iPad2 or Apple iPhone4S. The time taken to complete each scenario was recorded, as were the number of correctly completed tasks. Upon finishing both scenarios, participants completed a questionnaire on their use of TOXBASE and mobile technology, and were asked to evaluate the performance of the TOXBASE app. Space was provided for participants to make suggestions on how to improve the app.

Results

In total 63 participants (24 doctors, 20 nurses, 19 medical students) completed the tasks and questionnaire. There was no significant difference in time taken to complete the tasks using either the app or website (scenario 1: website median time = 213s [interquartile Range (IQR)= 312-178]; app median time = 195s [IQR= 250-164]. Scenario 2: website median time = 273s [IQR= 358-194]; app median time = 274s [IQR= 340-215]), nor was there a significant difference between the number of correctly completed tasks (scenario 1: website median score = 4 [IQR= 4-3]; app median score = 4 [IQR= 4-3]. Scenario 2: website median score = 3 [IQR= 4-3]; app median score = 3 [IQR= 4-3]). In the questionnaire, participants scored the performance of the app highly (median score across all 6 usability heuristics = 4 [IQR= 5-3] out of 5). 62% of participants favoured using the app over the current website, whilst 24% needed more time to decide, and the remaining 14% preferred to use the website. Suggested areas for improvement included a reduction in on-screen text and changing the layout to make finding specific information easier.

Conclusion

This evaluation study demonstrated that the TOXBASE app performed well against the TOXBASE website, and it met with general approval from current and future medical staff.

Future studies could investigate the benefits of using the TOXBASE app in real clinical practice.