Letter to Editor

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Smart Phones in Research: A tool for data capture by undergraduate medical students during Re-Orientation of Medical Education (ROME) training

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Dear Editor,

Re-Orientation of Medical Education (ROME), a one month posting of undergraduate students in department of Community Medicine, is used not only to build up the knowledge, attitude, communication and clinical skills, but also to make the physician in contact with the community efficiently. In 1977, the ROME scheme aimed at developing medical doctors for the rural community in the vision of medical education, which later envisaged training a basic doctor to serve better at the first contact with rural and urban community (1, 2). During the posting, the students conducted house to house survey in rural and urban communities and prepared a detailed report of the research activities and planned intervention based on the needs of the community.

World consumption of paper has grown 400% in the last four decades. About 35% of the total trees cut around the world are used in paper industries (3). To reduce the paper consumption, The Ugandan Ministry of Health advocated the use of smart phones in integrated community case management approach for health care providers for child health (4). Every year in ROME more than thousands of pages of papers are used for data collection. As a small initiative to save paper in this year (2018) ROME training, completely paper-less questionnaires were made and used. Smart phones were used as a tool for data collection and data entry. Even in the large scale surveys, data capture can be easily done (5). Epicollect5 software (developed by Imperial College London funded by the Wellcome trust) was used to collect data through a mobile app.

The mobile based data collection has benefits over paper-based approaches. The Epicollect5 software enables the creators or managers to identify the errors and allows mid-course correction in minimal time. The instances of data entry error/missing data can be avoided by applying checks at the data entry point. The data are transferred to a central server near – instantaneously; therefore, the data are stored and backed up securely, and the risk of data loss is minimal. Epicollect5 is available for both Android (4.4+) and iOS (8+)-based mobile phones in play store and app store, respectively. There are various resources for mobile phone-based data collection solutions (6).

As the students are familiar with the smart

phones, training requirements were almost minimal. The students grasped it in almost real-time. It would be right to say the technology has imbibed the younger generation more, than being learnt by them.

Use of mobile phones was so convenient, feasible and user-friendly to capture data (data collection as well as data entry). By the end of day 5 of data collection by a group of 40 undergraduate students, the total numbers of households covered were 963 and 3527 individuals. During the survey period, a batch of 150 undergraduate students collected the data of around 15575 individuals by using this mobile app. This actually reduced the time and costs involved in acquiring or maintaining dedicated tools for data capture. The app also gives an opportunity to collect audios, videos and GPS co-ordinates. As compared to previous years' ROME posting which were done in a similar setting with paper-based questionnaire; the total number of participants interviewed by a group of 30-35 students were around 2200 to 2600 over a period of 10 days of data collection which was followed by another 5 days of data entry in MS Excel/ EpiData software.

Appropriate use of technology in research helped the students to minimize the hours spent in data collection and entry and provoked their interest in research since the app-based data collection was more interesting as compared to paper-based approach for them.

Conflict of Interest: None declared.

References

1. Kavya R. In search of Indian medical education [internet]. Bengaluru: Institute of Public Health, Bengaluru; 2011 [cited 2018 Jan 7]. Available from: http://iphindia.org/insearch-of-indian-medical-education/.
2. Solanki R, Deshmukh PR, Gupta SS, Maliye CM, Mehendale AM, Garg BS. Reorientation of medical education: Implications and challenges, A sewagram experience from India. International Journal of Current Research. 2017; 9(4):49326-9.
3. Martin S. Paper Chase [internet]. UK: Ecology Global Network; 2011 [cited 2018 Jan 7]. Available from: http://www.ecology.com/2011/09/10/paper-chase/.
4. Tumusiime DK, Agaba G, Kyomuhangi T, Finch J, Kabakyenga J, MacLeod S. Introduction of mobile phones for use by volunteer community health workers in support of integrated community case management in Bushenyi District, Uganda: development and implementation process. BMC Health Serv Res. 2014;14(1):S2.
5. Tomlinson M, Solomon W, Singh Y, Doherty T, Chopra M, Ijumba P, et al. The use of mobile phones as a data collection tool: A report from a household survey in South Africa. BMC Medical Informatics and Decision Making. 2009;9:51.
6. Pakhare AP, Bali S, Kalra G. Use of mobile phones as research instrument for data collection. Indian J Community Health. 2013;25(2):95–8.