Validation Study of the World Health Organization and Pan American Health Organization Hospital-Based Disaster Preparedness Questionnaires in Nepal

ARTICLE *in* DISASTER MEDICINE AND PUBLIC HEALTH PREPAREDNESS · MARCH 2016

Impact Factor: 0.7 · DOI: 10.1017/dmp.2016.17

4 AUTHORS, INCLUDING:

Pedro Arcos González

University of Oviedo

73 PUBLICATIONS **103** CITATIONS

SEE PROFILE

Rafael Castro Delgado

University of Oviedo

59 PUBLICATIONS **38** CITATIONS

SEE PROFILE

Validation Study of the World Health Organization and Pan American Health Organization Hospital-Based Disaster Preparedness Questionnaires in Nepal

Ashma Baruwal, MPH; Pedro Arcos González, MD, PhD; Rafael Castro Delgado, MD, PhD; Ganesh Kumar Jimee, MSc

The World Disaster Reduction Campaign on Safe Hospitals has raised awareness of the need for hospitals and health facilities to remain safe and functional in disasters.[1] Here we report the findings of our study that explored differences in results provided by 2 validated questionnaires in Nepal. Twin earthquakes recently hit the country, and the lack of preparedness among the majority of hospitals was evident in the response phase.

This cross-sectional study was carried between April 2014 and May 2014 in 9 hospitals that were included on the basis of highest patient flow. One selected hospital chose not to participate, citing lack of approval from their ethics committee. Interviews were conducted with hospital directors or chiefs of disaster response teams (wherever applicable), except for one hospital where the questionnaire was self-administered.

Functional aspects of hospital preparedness were studied by using the World Health Organization (WHO)-Europe and Pan American Health Organization (PAHO) validated questionnaires. While comparing functional aspects of the WHO and PAHO questionnaires, 8 components were identified as similar in nature. Post-disaster recovery was found only in the WHO questionnaire and as a result was not included in the analysis. Questionnaires were designed and well accepted to determine the functional ability of hospitals during a disaster and to identify areas that need improvement.[2,3]

Taking WHO as the reference, questions from PAHO corresponding to the WHO questionnaire were grouped. Questions not similar on either questionnaire were not considered for analysis. Responses on the WHO questionnaire were categorized into 3 levels: due for review, under progress, and completed. Scores were assigned for the 3 categories of responses as follows: "due for review" as 1, "under progress" as 2, and "completed" as 3. Responses on the PAHO questionnaire were categorized into 3 levels: low, average, and high. Likewise, scores were assigned for the 3 categories of responses on an ordinal level with "low" as 1, "average" as 2, and "high" as 3.

The results revealed no differences between the outcome of components of either questionnaires except for the command and control section ($P = 0.002$). This could be because the command and control component of the PAHO questionnaire had questions pertaining to a separate space, equipment, back-up systems for the Emergency Operations Center, whereas the WHO questionnaire had questions specific to the Hospital Incident Command organizational structure. However, this was not an absolute analysis because we were comparing only 2 similar questions and not the same ones.

Both checklists had questions on safe hospital evacuation. The WHO checklist had a continuous monitoring system to identify potential vulnerable areas such as entry/exits and food/water access points prior to any disaster. However, it was noticed during the interview that the respondents confused the related question with crowd control after the disaster, which required repeated explanation.

Descriptive statistics were used for analysis of the WHO questionnaire, whereas the PAHO questionnaire had its own safety scoring index with a safety calculator.[4] The WHO questionnaire was user-friendly because it was easy to analyze. The PAHO questionnaire had its own safety scoring index with a scoring calculator that was not readily available.

We hope our comparison can help hospitals to select a proper evaluation tool, especially considering that the resources of hospitals in Nepal are limited.

About the Authors

Unit for Research in Emergency and Disaster, Department of Medicine, University of Oviedo, Oviedo, Spain (Ms Baruwal, Profs Arcos and Castro), and the National Society for Earthquake Technology-Nepal, Kathmandu, Nepal (Mr Jimee).

Correspondence and reprint requests to Ashma Baruwal, MPH, Unit for Research in Emergency and Disaster, Department of Medicine, University of Oviedo, Oviedo, Spain (e-mail: baruwalashma@gmail.com).

 DOI: 10.1017/dmp.2016.17

REFERENCES

1. World Health Organization. Safe hospitals and health facilities. WHO website. http://www.who.int/hac/techguidance/comprehensive_safe_hospital_framework.pdf?ua=1. Published 2015. Accessed June 1, 2015.
2. Disaster Preparedness and Response. Hospital emergency response checklist. World Health Organization-Regional Office for Europe website. http://www.euro.who.int/__data/assets/pdf_file/0020/148214/e95978.pdf. Published 2011. Accessed June 18, 2015.
3. Emergency Preparedness and Disaster Relief. Hospital safety index. Organizacion Panamericana de la salud website. http://www.paho.org/disasters/index.php?option=com_content&view=category&layout=blog&id=907&Itemid=884. Accessed June 18, 2015.
4. Disaster Preparedness and Response. WHO's hospital safety index and emergency checklist rolled out in Europe. World Health Organization- Regional Office for Europe website. http://www.euro.who.int/en/health-topics/emergencies/disaster-preparedness-and-response/news/news/2012/10/whos-hospital-safety-index-and-emergency-checklist-rolled-out-in-europe. Published October 12, 2012. Accessed June 20, 2015.