

ANALYSIS OF NURSES' COMPETENCIES IN DISASTER PREPAREDNESS IN PUBLIC HOSPITALS OF DISTRICT RAWALPINDI, PAKISTAN

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Abstract

Natural or man-made disasters pose major challenges to healthcare systems worldwide. Pakistan is also considered to be especially susceptible to earthquakes, floods, epidemics, industrial accidents, and terrorist acts. During such cases, hospitals are the primary facility for emergency response, and nurses are the largest and most readily available group of healthcare providers within the hospitals. Disaster preparedness skills are thus vital to their competencies in providing an effective response, reducing morbidity and mortality, and continuity of key health services.

Disaster preparedness is the knowledge, skills, attitudes, and readiness of the healthcare professionals to respond adequately to disaster situations. The role of nurses during disasters is expected to be varied as they are to conduct triage, provide emergency care, coordinate and communicate, offer psychological assistance, control infections, and manage resources. Lack of readiness in nurses can lead to confusion of response, poor patient outcomes, and stress and burnout among healthcare professionals.

Introduction

In Pakistan, although people are exposed to disasters frequently, disaster preparedness has not been thoroughly incorporated into the nursing education and in-service training programs of all the public hospitals. Available findings indicate that there are gaps in disaster knowledge, a lack of practical training, and institutional support for nurses in disaster preparedness. Nonetheless, there is limited information on the region-specific data, especially in major urban districts like Rawalpindi.

Rawalpindi district has several large general hospitals with a high population spread. It is crucial to know the degree of disaster preparedness competency among the nurses in these hospitals to determine the strengths, gaps, and areas that need special interventions. Thus, this research paper was intended to examine the preparedness of nurses in the context of disasters in District Rawalpindi, public hospitals, Pakistan.

Methodology (Brief Overview)

A cross-sectional study was descriptive research based on nurses in the public hospitals of the District Rawalpindi. The sample that was used was a total of 270 male and female registered nurses selected through a non-probability convenience sampling method. Out of the participants, the proportion between male and female was 75:25. A structured questionnaire that was self-administered was used to collect data.

Questionnaire Validity

The questionnaire in this research was constructed through a thorough review of research study materials on disaster preparedness and nursing competencies, as well as internationally accepted disaster preparedness models. The tool was divided into parts that covered demographic features and domains of core competencies of disaster preparedness, like:

- Knowledge of disaster management.
- Skills in triage and emergency response.
- Disaster preparedness attitudes.
- Preparedness and training at the institution.
- Individual preparedness and assurance.

Content Validity

An expert review was done to ensure content validity. Five experts, comprising senior nursing educators, hospital administrators, and disaster management experts, assessed the questionnaire. Every item was evaluated in terms of relevance, clarity, and comprehensiveness. According to their feedback, some slight changes were made, such as paraphrasing the indecisive items and removing duplication. The Content Validity Index (CVI) was determined as satisfactory, which implied that the questionnaire was sufficient to measure the concept of disaster preparedness competencies.

Face Validity

The face validity was determined through piloting the questionnaire on a small sample of 20 nurses who did not form the ultimate sample. The respondents indicated that the questions were readable, comprehensible, and pertinent to their work occupations. The pilot testing did not find any significant challenges.

Reliability

Cronbach's alpha was used to determine the internal consistency of the questionnaire. The total reliability coefficient was established to be at acceptable levels, which showed the good internal consistency of the instrument in all the domains of competency.

Inclusion and Exclusion Criteria

Inclusion Criteria

- Registered male and female nurses working in public hospitals of District Rawalpindi
- Nurses with at least six months of clinical experience
- Nurses directly involved in patient care
- Nurses willing to participate and provide informed consent

Exclusion Criteria

- Nurses of a private hospital or clinics.
- Nursing students and interns.
- Non-clinical administrative nurses.
- Nurses who were on long leave within the data collection time

Results

Table 1: Demographic Characteristics of Nurses (n = 270)

| Variable | Category | Frequency (n) | Percentage (%) |
|-------------------------|----------------------|---------------|----------------|
| Gender | Female | 203 | 75.2 |
| | Male | 67 | 24.8 |
| Age (years) | 20–25 | 62 | 23.0 |
| | 26–30 | 104 | 38.5 |
| | 31–35 | 61 | 22.6 |
| | >35 | 43 | 15.9 |
| Professional Experience | 1–5 years | 128 | 47.4 |
| | 6–10 years | 87 | 32.2 |
| | >10 years | 55 | 20.4 |
| Qualification | Diploma in Nursing | 176 | 65.2 |
| | BS Nursing / Post RN | 82 | 30.4 |
| | MSN or above | 12 | 4.4 |

The demographic statistics show that the nursing population in the public hospitals of District Rawalpindi is comprised mostly of females and relatively young demographics (almost half of them have less than five years of clinical experience).

Table 2: Knowledge of Disaster Preparedness Among Nurses

| Knowledge Item | Adequate n (%) | Inadequate n (%) |
|--|----------------|------------------|
| Awareness of disaster types | 198 (73.3) | 72 (26.7) |
| Knowledge of the hospital disaster plan | 121 (44.8) | 149 (55.2) |
| Familiarity with triage systems | 109 (40.4) | 161 (59.6) |
| Understanding of the incident command system | 97 (35.9) | 173 (64.1) |

In general, nurses were not very well informed about disaster preparedness, and they are lacking considerable institutional and command-related aspects.

Table 3: Disaster Response Skills of Nurses

| Skill Area | Competent n (%) | Not Competent n (%) |
|---------------------------------|-----------------|---------------------|
| Basic life support | 214 (79.3) | 56 (20.7) |
| First aid management | 201 (74.4) | 69 (25.6) |
| Mass casualty triage | 102 (37.8) | 168 (62.2) |
| Emergency evacuation procedures | 96 (35.6) | 174 (64.4) |
| Use of PPE in disasters | 118 (43.7) | 152 (56.3) |

The results indicate that nurses have the competency of performing the mundane emergency skills, but are not prepared to conduct a massive disaster response.

Table 4: Attitudes Toward Disaster Preparedness

| Statement | Agree n (%) | Neutral n (%) | Disagree n (%) |
|---|-------------|---------------|----------------|
| Disaster training is essential for nurses | 232 (85.9) | 24 (8.9) | 14 (5.2) |

| Statement | Agree n (%) | Neutral n (%) | Disagree n (%) |
|--|-------------|---------------|----------------|
| Willing to participate in disaster response | 219 (81.1) | 31 (11.5) | 20 (7.4) |
| Concerned about personal safety during disasters | 187 (69.3) | 46 (17.0) | 37 (13.7) |

Most nurses exhibited positive attitudes, though personal safety concerns were commonly reported.

Table 5: Institutional Preparedness and Training

| Institutional Factor | Yes n (%) | No n (%) |
|---|------------|------------|
| Disaster training received | 98 (36.3) | 172 (63.7) |
| Participation in disaster drills | 84 (31.1) | 186 (68.9) |
| Availability of a written disaster plan | 115 (42.6) | 155 (57.4) |

These outcomes are an indication of the lack of institutional readiness and training opportunities among nurses.

Discussion

The results of the present investigation have shown that nurses working in District Rawalpindi public hospitals have moderate knowledge and positive attitudes toward disaster preparedness and have gaps in practical competencies and institutional support. These findings are in line with the past research carried out in the developing nations that have indicated inadequate disaster preparedness among the nursing personnel, even though they have often been exposed to the occurrence of the disaster.

The sample size is mostly composed of female nurses, as is the case with the nursing workforce in Pakistan. Although female nurses demonstrated good professional commitment, gender-related issues, including family commitments and safety concerns, can affect their disaster response ability. This underscores the necessity of gender sensitive policies of disaster preparedness.

Insufficient knowledge of the hospital disaster plans and the absence of involvement in exercises indicate the loopholes in the hospital-level disaster management strategies. Training, simulation, and role clarity should be carried out regularly to improve the competencies of nurses. Moreover, undergraduate and continuing nursing education that includes disaster preparedness may increase preparedness immensely.

The positive feelings exhibited by nurses are an opportunity that healthcare administrators and policymakers can develop effective disaster preparedness programs. Disaster preparedness competencies of nurses may be enhanced by managing institutional barriers, ensuring sufficient resources, and interprofessional collaboration.

Conclusion

This research finds that the attitudes and fundamental knowledge of nurses in the public hospitals in District Rawalpindi are positive, but there are a lot of gaps in applied skills, training, and institutional support. It is necessary to reinforce disaster preparedness by developing a structured education, frequent drills, and hospital disaster plans. Improving the competencies of nurses to deal with disasters will eventually assist in bettering the resilience and patient outcomes in the event of disasters in a hospital.

Recommendations

- Implementation of disaster preparedness in the undergraduate and postgraduate nursing programs.
- Periodic in-service disaster management training and simulation-based exercises.
- Hospital disaster management plans: development, dissemination, and periodical revision.
- Supply of sufficient emergency supplies and personal protective gear.
- Policies that are gender sensitive on matters relating to security and family issues.

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