Variables Associated with the Intent of Health Care Professionals (HCPs) to Respond to a Public Health Event (PHE)

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Aim, Method & Sample

- **Aim:** To examine the associations among health care professionals’ (HCPs’) characteristics, public health event (PHE) experience, and PHE education, and their intent to respond to a future PHE.

- **Method:** Cross-sectional study with one wave of data collection using a pre-tested survey based on Ajzen’s theory of planned behavior (TPB).

- **Sample:** Convenience sample of 305 civilian HCPs (e.g., registered nurses, pharmacists, physicians, and a dentist) who worked at health care facilities throughout the United States.
## Survey Instrument

<table>
<thead>
<tr>
<th>Scales Developed to Measure TPB Constructs</th>
<th># Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beliefs about the outcomes of being a responder</td>
<td>5</td>
<td>.85</td>
</tr>
<tr>
<td>Attitude toward being a PHE responder</td>
<td>2</td>
<td>.78</td>
</tr>
<tr>
<td>Responders’ perception of significant others’ support of their being a responder</td>
<td>4</td>
<td>.79</td>
</tr>
<tr>
<td>Subjective norm (perceived social pressure) to respond or not respond to a PHE</td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific control beliefs</td>
<td>10</td>
<td>.87</td>
</tr>
<tr>
<td>Perceived control (includes self-efficacy and controllability)</td>
<td>5</td>
<td>.80</td>
</tr>
<tr>
<td>Intention to respond</td>
<td>4</td>
<td>.90</td>
</tr>
</tbody>
</table>

Total = 30
Sample Characteristics
(N = 305 Respondents; 288 Met Criteria)

### Profession
- RN: n = 242
- Physician & Dentist: n = 17
- Pharmacist: n = 29
- Other (e.g., PA, EMT): n = 17

### Age: Mean (SD) = 42.88 (11.28)
- Years of practice: 48% ≥ 16 yr.

### Gender:
- Male n = 48
- Female n = 255

### Education
- RNs with associate degree n = 89
- RNs with bachelor degree n = 109
- RNs with graduate degree n = 44
Intent to Respond & the Type of PHE: Rated on a 5-Point Likert Scale

Scale: 1 = extremely unlikely to 5 = extremely likely

<table>
<thead>
<tr>
<th>Type of PHE</th>
<th>Rating</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Disease</td>
<td>3.75</td>
<td>287</td>
</tr>
<tr>
<td>Terrorist</td>
<td>4.01</td>
<td>285</td>
</tr>
<tr>
<td>Natural Disaster</td>
<td>4.28</td>
<td>284</td>
</tr>
<tr>
<td>Weather</td>
<td>4.46</td>
<td>286</td>
</tr>
</tbody>
</table>
Health Care Professional Groups’ Mean TPB Intention Score

<table>
<thead>
<tr>
<th>Profession</th>
<th>Mean TPB Intention Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>16.88</td>
</tr>
<tr>
<td>Grad RNS</td>
<td>16.55</td>
</tr>
<tr>
<td>Basic RNS</td>
<td>16.42</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Scale Mean (SD) = 16.26 (3.19)

F (3, 277) = 4.02; p = .008: the post-hoc test showed significant (p < .05) differences between the pharmacist group and all other groups.
### PHE Response Experience & TPB Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>HCP with PHE Experience</th>
<th>HCP without PHE Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Beliefs</td>
<td>23.47</td>
<td>23.73</td>
</tr>
<tr>
<td>Attitudes</td>
<td>8.92</td>
<td>8.7</td>
</tr>
<tr>
<td>Referent Beliefs</td>
<td>16.23</td>
<td>15.56</td>
</tr>
<tr>
<td>Subj Norm*</td>
<td>4.21</td>
<td>3.95</td>
</tr>
<tr>
<td>Control Beliefs*</td>
<td>43.23</td>
<td>40.24</td>
</tr>
<tr>
<td>Perceived Behavioral Control*</td>
<td>21.6</td>
<td>20.82</td>
</tr>
<tr>
<td>Intention</td>
<td>16.86</td>
<td>16.13</td>
</tr>
</tbody>
</table>


\[t(284) = 2.25, p = 0.03\]

\[t(282) = 2.01, p = 0.045\]

\[t(279) = 3.77, p < 0.001\]
Together the six TPB scale scores accounted for 31% of the variation in intention; 27% explained by magnitude of response and 5% explained by pattern of response.
Responders’ (n = 60) PHE Education & TPB Constructs

**No PHE Education Prior to PHE** vs **PHE Education Prior to PHE**

- **Personal Beliefs**
  - No PHE: 22.43, 23.85
  - PHE: 14, 46

- **Attitude**
  - No PHE: 8.64, 9.0
  - PHE: 14, 43

- **Referent Beliefs**
  - No PHE: 15.14, 16.61
  - PHE: 14, 46

- **Subjective Norm**
  - No PHE: 3.79, 4.35
  - PHE: 14, 46

- **Control Beliefs**
  - No PHE: 40.57, 44.24
  - PHE: 14, 45

- **Perceived Behavior Control**
  - No PHE: 21.14, 21.89
  - PHE: 14, 46

- **Intention**
  - No PHE: 16.43, 17.34
  - PHE: 14, 44

*\( t(58)=2.61, p=.01 \)  \*\( t(57)=2.64, p=.01 \)
PHE Education (n = 199) & PHE Experience

- **HCP with PHE Response Experience (n = 60)**
- **HCP without PHE Experience (n = 139)**

<table>
<thead>
<tr>
<th>Type of Education</th>
<th>HCP with PHE Experience</th>
<th>HCP without PHE Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2F no Sim</td>
<td>3.81</td>
<td>3.7</td>
</tr>
<tr>
<td>F2F with Sim</td>
<td>3.57</td>
<td>3.25</td>
</tr>
<tr>
<td>On-line no Sim</td>
<td>4</td>
<td>3.96</td>
</tr>
<tr>
<td>On-line with Sim</td>
<td>3.6</td>
<td>3.35</td>
</tr>
<tr>
<td>Field Exercise*</td>
<td>4.5</td>
<td>3.86</td>
</tr>
</tbody>
</table>

*Hours of each type of PHE education over 3 years: Mean (SD)*

- **M = 8.21 (1.10)**
- **M = 5.82 (8.3)**
- **M = 4.88 (5.35)**
- **M = 4.61 (7.67)**
- **M = 8.03 (12.14)**

\[t(59) = 2.62, p = .01\]
Nature of the PHE
- Those HCP surveyed were more willing to respond to a conventional than a unconventional event.

Health Care Profession
- Pharmacists appeared to be less willing to respond than other professional groups in the surveyed sample.

TPB Item Responses
- Higher scores on the six TPB scales were associated with a higher intent to respond to a future PHE.

PHE Response Experience
- Experienced HCP responders scored higher on subjective norm, control beliefs and perceived behavior control scales than non-responders.

PHE Education & Response Experience
- Experienced HCP responders with PHE education scored higher on the referent belief and control belief scales than those without PHE education.
- HCP with PHE response experience indicated field exercises better prepared them for a PHE than other types of education; they found filed exercises more helpful than non-responders.
New information about the psychological (perceived ability/capability) and the psychosocial (perceived support) factors that could affect the intention of health care professionals to respond to a future PHE.

Implications for PHE preparedness course objectives, learning activities, and assessment strategies.

Critically relevant to patients, hospitals, and community planners who rely on health care professionals to respond when a PHE occurs.
Acknowledgement

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