

Impact of Responsibility Attributions and Patient Gender on Nurses' and Nursing Students' Emotional Responses and Willingness to Help Patients with Chronic Low Back Pain

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Introduction

- According to Weiner's (1980, 1985, 1995) Attribution Theory, individuals perceived as being responsible for their illness will evoke more anger and less sympathy from observers, which in turn will result in observers' decreased willingness to help.
- Researchers evaluating Attribution Theory in chronic pain (CP) populations have found mixed results:
 - ✓ Patients not following doctors' recommendations (passively coping) elicit higher responsibility, lower sympathy, and lower helping ratings (Lundquist et al., 2002).
 - ✓ Patients without medical evidence evoke less sympathy and helping from general practitioners and physiotherapists (De Ruddere et al., 2013).
- x In contrast, undergraduate students allocate more help to patients coping passively with pain (MacLeod et al., 2001).

Purpose

- Attribution Theory as a model for understanding nurses' reactions to patients with low back pain (LBP) was assessed.
 - As patients who are judged negatively by nurses receive lower quality care (Ganong et al., 1987), it is important to clarify how responsibility attributions impact nurses' responses.
 - Experience was included as a variable as more experienced observers should attribute less responsibility to patients (Weiner, 1985) though initial research suggests health care experience has the opposite effect (Brockopp et al., 2003; Kappesser et al., 2006).
 - Also, because patient gender can directly impact emotional responses (MacArthur et al., 2012), patient gender was included in our model.

Hypotheses & Research Questions

H-1: Patients deemed not responsible for their pain (i.e., patients with medical evidence who used active coping) were expected to elicit more positive/less negative emotion and more helping behaviour compared to patients deemed responsible (i.e., patients without medical evidence who used passive coping).

H-2: Compared to nursing students, nurses were expected to express less positive/more negative emotion and less helping behaviour.

H-3: Male patients were expected to garner more positive/less negative emotional responses and more helping behaviour than female patients.

RQ-1: The extent to which the independent variables (responsibility, experience, patient gender) interacted with one another to influence the observers' responses was also explored.

RQ-2: The relative contributions of positive versus negative emotions to observers' helping behaviour was also explored.

Methods

Target Patients

- Patients were recruited at a tertiary rehabilitation centre for injured workers.
- Patients' facial expressions were videotaped while they completed a physiotherapist directed assessment activity (i.e., a straight leg raise). Patients also completed a questionnaire battery including measures of coping, pain experiences, and mental health. Medical information and evidence corroborating their pain complaint was gathered from the patients' charts.
- Two male and two female patients from the larger sample, matched on other characteristics known to impact observers' perceptions (physical attractiveness, self-reported pain level, and degree of nonverbal pain expressiveness) served as the target patients.
- Videos of the patients' facial expressions were accompanied by descriptions of self-reported pain level, coping style, LBP diagnosis, and whether medical evidence was available.

Participants (Observers):

- 78 female nursing students (M Age (SD) = 24.0(4.0); M Years of Schooling (SD) = 3.5 (0.5)) and 74 female nurses (M Age (SD) = 38.8 (11.9); M Years of Experience (SD) = 13.7 (12.0))

Procedure:

- Observers were recruited using advertisements and email solicitations (sent via the Nursing Association of NB and the UNB Faculty of Nursing).
- During individual or group sessions, observers read a brief description of each patient and watched each corresponding video. For each patient, observers rated their own emotional response (sympathy, annoyance, anger) and helping behaviour (willingness to go out of their way to help, willingness to provide extra support).

Results

Hypothesis 1-3 and Research Question 1

- Three (positive emotion, negative emotion, helping behaviour), 2 (responsible vs. not responsible) x 2 (nurses vs. nursing students) x 2 (male vs. female patient) GLMs were completed.

Negative Emotion

- Significant multivariate main effects were observed for Responsibility, $F(2,149) = 13.58, p < .001, \eta^2 = .15$, and Experience, $F(2,149) = 3.07, p < .05, \eta^2 = .04$. There were no significant interaction effects.
- Observers experienced significantly higher levels of anger and annoyance when the patient was deemed responsible for their pain condition than when they were deemed not responsible (Table 1).
- Compared to nursing students, nurses expressed significantly more anger towards the patients.

Positive Emotion (Figures 1 & 2; Table 1)

- No significant main effects were observed, but there were significant interaction effects for Responsibility x Patient Gender, $F(1,150) = 69.51, p < .001, \eta^2 = .32$, and Responsibility x Experience, $F(1,150) = 4.24, p < .05, \eta^2 = .03$.

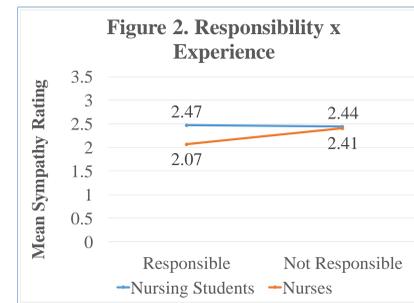
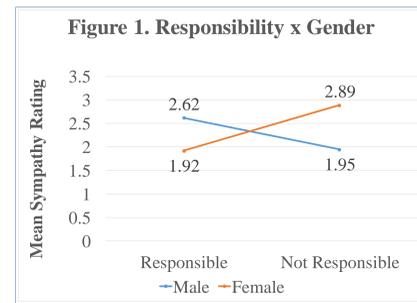
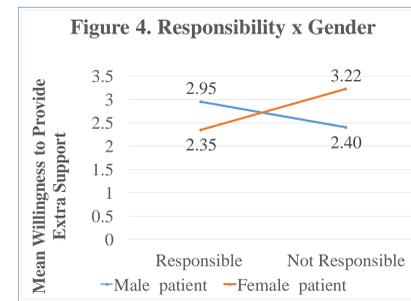
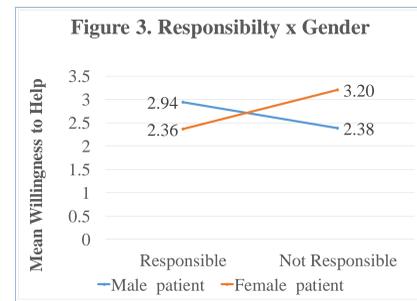


Figure 1: Responsibility exerted opposing effects on male and female patients.

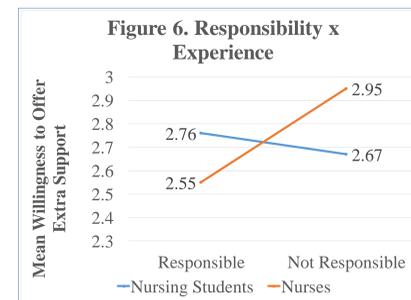
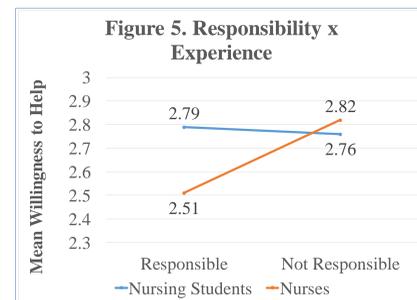
Figure 2: Responsibility only impacted the nurses' ratings of sympathy (nursing students were unaffected)

Helping Behaviour (Figures 3-6; Table 1)

- No significant multivariate main effects were observed, but there were significant interaction effects for Responsibility x Gender, $F(2,149) = 38.59, p < .05, \eta^2 = .34$, and Responsibility x Experience, $F(2,149) = 3.58, p < .05, \eta^2 = .05$.



Figures 3 & 4. Attributions about responsibility exerted opposing effects on observers' willingness to help/give extra support for male versus female patients.



Figures 5 & 6. Nurses were significantly more willing to help/offer support to patients deemed not responsible compared to those deemed responsible. Nursing students' willingness to help/offer support was unaffected by responsibility.

| | | F | h_p^2 |
|--------------------------------------|-----------------------------|---------|---------|
| Anger | Responsibility | 12.58** | 0.08 |
| | Experience | 4.32* | 0.03 |
| Annoyance | Responsibility | 27.06** | 0.15 |
| | Experience | 0.72 | 0.01 |
| Sympathy | Responsibility x Gender | 69.51** | 0.32 |
| | Responsibility x Experience | 4.24* | 0.03 |
| Willingness to Help | Responsibility x Gender | 76.49** | 0.34 |
| | Responsibility x Experience | 4.07* | 0.03 |
| Willingness to Provide Extra Support | Responsibility x Gender | 60.91** | 0.29 |
| | Responsibility x Experience | 9.06* | 0.05 |

Note. * $p \leq .05$, ** $p \leq .001$

Research Question 2

- Four regression analyses (one regression per combination of responsibility) were completed to examine the extent to which willingness to help was predicted by positive versus negative emotional responses.
- In each regression, emotional responses accounted for 53.4%-65.0% of the variance in willingness to help, $F_s(3,148) > 58.7, ps < .001, R_s^2 > .53$.
- Sympathy was a significant individual predictor of willingness to help regardless of patient gender or responsibility, $t_s(3,148) > 12.85, ps < .001, \beta_s > .72$.
- Annoyance, was a significant individual predictor only when the patient was a female who was responsible for her pain, $t(3,148) = -2.27, p = .03, \beta = -.21$.
- Anger was not a significant individual predictor in any of the regression analyses.

Discussion/Conclusion

- Consistent with Attribution Theory, we found patients deemed responsible for their pain elicited more negative emotional responses from all observers. In the presence of the moderating variables, however, responsibility attributions did not directly impact positive emotional responses or helping behaviour.

Gender as a Moderator

- Attributions about responsibility exerted their expected effect only for female patients. Nevertheless, the pattern of findings is consistent with Attribution Theory: higher levels of helping were directed towards those patients who elicited higher levels of sympathy.
- Stereotypes (i.e., women are viewed as more likely to have underlying psychiatric issues) may help explain why responsibility attributions showed opposing gender effects.

Experience as a Moderator

- Level of experience had a small main effect on negative emotions, such that nurses expressed more anger overall compared to nursing students.
- However, only nurses' responses were consistent with Attribution Theory: they were more likely to feel sympathetic and to be willing to help patients who were deemed not responsible for their pain condition. Nursing students' sympathy and willingness to help were unaffected by responsibility.
- Results of the regressions suggest sympathy is the key determinant of helping behaviour. Thus, as Weiner's model predicts, when sympathy is elicited by a patient, nurses and nursing students have a greater propensity to want to help. Nevertheless, when negative emotions are elicited, they do not appear to deter helping behaviour among these health professionals.
- Our findings suggest the professional training and commitment of nurses to help their patients will overshadow the possible negative influence of feeling anger or annoyance toward a patient but that feeling sympathy for a patient may enhance the commitment to help.

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