



Gender bias in the observation of experimental pain

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Abstract

The aim of this study was to examine how men and women observe experimentally induced pain in male and female participants and to specifically determine the accuracy of observed pain ratings, the possible interactions between the sex of the viewer and the sex of the individual being observed, and the influence of gender role expectations on observed pain ratings. The sample comprised 29 participants (15 females). They each completed a battery of psychological questionnaires and viewed a presentation of 10 randomly ordered video clips. Each presentation consisted of 10 video clips, lasting 30 s, of a participant (five males and five females) in the cold pressor task. The participants viewing the videos were asked to provide several ratings, including observed pain intensity and gender role related characteristics of the individual in the video. In terms of sex of the video participant, results indicated that viewers rated male videos as having less pain than female videos although the effect was small. Regarding sex of the viewer, results indicated that for both male and female videos, female viewers rated observed pain intensity significantly higher than did male viewers. In terms of accuracy, results indicated that on average, female video participants' pain was underestimated by 14 points, while male videos participants' pain was underestimated by 22 points (on a 0–100-point scale). Pain intensity ratings and pain tolerance from the participants in the videos did not differ significantly with respect to sex, though women had shorter tolerance times and higher pain ratings than men. Hierarchical regression analyses indicated that expectations of gender related 'endurance of pain' significantly predicted ratings of both male and female videos. When endurance expectations were controlled, sex of the viewer no longer significantly predicted observed pain ratings. The 'willingness to report pain' variable was not a significant predictor of observed pain ratings. Our results show that women are perceived to have more pain than men, that there was a tendency by both sexes to underestimate pain in others, but men showed even greater underestimation, and that gender role expectations of pain endurance given by the video observers accounted for substantial variance in their ratings of pain in the videos.

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1. Introduction

An individual's perception of a person in pain is likely based on a variety of factors. Encapsulated in an individual's learning history are beliefs regarding appropriate or acceptable pain behaviors, stereotypical social and gender roles, and their acuity in observing overt behaviors. While these are characteristics of the observer, there are also qualities inherent to the person they are observing, such as sex, age, and appearance, which need to be taken into account. As can be seen in the following discussion, there is

likely an interaction between the observer and the person that individual is observing, which ultimately results in the observer's beliefs and/or judgments of a person in pain.

An area of inquiry that has grown in recent years is that of sex and gender differences in pain. Research has shown that there is a discrepancy between the relatively small sex differences in clinical pain report and the moderate to large differences in experimental pain report. One explanatory hypothesis has been that the differences in experimental pain may be an artifact of the laboratory setting where gender roles are activated. Robinson and colleagues developed a questionnaire to assess such constructs, entitled the gender role expectations of pain (GREP). We have shown that men and women report significant differences in

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their pain expectations for self and others (Robinson et al., 2001). These expectations are associated with experimental pain responding and in some measures, explain more variance in pain scores than sex (Wise et al., 2002). This has led to the following empirical questions: do men and women perceive pain and pain related emotions in others differently based on the sex of the individual? If so, what behaviors or cues are men and women using to base these ratings on?

There is a considerable literature on nurses' estimation of patients' pain although results regarding their accuracy have been mixed. For example, Zalon (1993) examined the comparability of 119 nurses' assessments of pain to a sample of post-operative abdominal surgery patients. Results indicated that nurses' Visual Analogue Scales (VAS) pain ratings were significantly, albeit modestly, correlated with patients' pain ratings. However, while nurses' assessments were related to the degree of pain reported by the patients, nurses' over-estimated mild pain and under-estimated more severe pain. Patients' pain contributed the largest portion of the variance (9.25%) to nurses' assessments. While this is a small percentage, the author notes that no other factors, including length of time since surgery, patient's age, sex, or presence of cancer, were related to the accuracy of nurses' pain assessments. These results are consistent with other research, revealing at times, small but significant correlations between nurses' and patients' pain ratings and a tendency for nurses' to overestimate/underestimate patients' pain (Choiniere et al., 1990) as well as underestimating their need for analgesia and ability to cope with the pain (Salmon and Manyande, 1996). However, others have found no agreement between nurses' and patients' pain ratings, which have been attributed to the fact that the nurses did not use any verbal cues to assist them with their estimations of the patients' pain and relied primarily on observed behavior (Thomas et al., 1998). While not examining potential interactions between sex of the observer (i.e. nurse) and sex of the patient, this research provides evidence that health care providers do not always make accurate judgments regarding their patients' pain level. Further, these estimates of patients' pain likely influence their decisional process, including prescription practices regarding pain medications.

As can be observed below, health care providers' perceptions of their patients are important and such perceptions influencing prescription practices warrant study. One hypothesis is that of differential prescription practices based on an individual's sex. Research has shown that some health care providers believe that there are differences in pain perception between men and women (McCaffery and Ferrell, 1992) while other research, using vignette formats, indicate that with respect to physical pain and psychological distress, nurses' believe there are no sex differences (Holm et al., 1989). In terms of medication practices, research using vignettes that were identical, except for the sex of the patient, indicate different amounts

of analgesic medication were chosen based on the patients' sex, with nurses' choosing, in general, less pain medication for female patients experiencing pain than when compared to males (Cohen, 1980; McDonald and Bridge, 1991). Essentially nurses, a population who are primarily women, have been studied as observers of pain. Taken together, this research has found that their perception of a patient's pain is not always accurate and notably, a patient's pain does not account for a large portion of the variance. Differential behaviors and beliefs based on a patients' sex have been observed in some of the studies.

Prescription practices are one reflection of behavioral outcomes based at least partially on observed pain. Sex differences in analgesic medication prescriptions have been shown for patients post-operatively using retrospective methods (i.e. chart reviews), with men receiving a higher frequency of narcotic analgesics (Calderone, 1990) and larger initial doses of pain medication post surgery (McDonald, 1994). However, no significant sex differences emerged for the total dose of pain medication received post-operatively (McDonald, 1994). Although in a self-report format, Turk and Okifuji (1999), in a large sample of chronic pain and cancer-related pain patients, found that there were no significant differences between men and women in terms of current use of analgesics, as well as past treatments for pain, disability and pain severity. Thus, there is some support for health care providers engaging in differential treatment of pain based on an individual's sex, although given the methodological problems with these studies, one is reluctant to draw conclusions.

Research examining individuals' perceptions of subjects participating in an experimental pain task, has not been widely studied in terms of how those subjects are viewed and if they are viewed differently based on their sex. Specifically, what appears to be lacking in the literature is information regarding an individual's pre-existing beliefs that he or she uses to form opinions about people in pain and how he/she perceives those in pain emotionally versus in purely behavioral terms. Thus, studying the observer's subjective beliefs as well as the specific cues/behaviors as opposed to raters using a coding system to quantify overt behavior may yield additional information. This method provides rich information that focuses on the observer's perceptions, which can then be compared to the actual ratings of the person experiencing pain. Clinically, this is important, as health care providers make daily decisions in terms of prescribing medication and other pain alleviating treatments, which significantly affect the quality of life of people in pain. Thus, increased knowledge in this area would be useful in determining how people formulate beliefs about individuals in pain and how this affects their decision process and subsequent interactions with a patient in pain.

As can be seen in the following, we hypothesized that: (1) female observers (FO) would report female participants as experiencing greater pain, as less willing to endure pain

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