Experimental Pain Thresholds are Influenced by the Sex of the Experimenter

There is general agreement that there are sex differences in the perception of experimental pain. The circumstances under which these differences are more apparent have also been investigated. For example, Lautenbacher & Rollman (1998) have shown that women show lower pain thresholds and tolerances to electrical and mechanical stimulation, but not to thermal stimulation, when compared to men. Sex differences can also be found in the incidence of female subjects reporting greater pain and more types of pain (Unruh, 2002).

There is ample evidence that sex differences in experimental pain perception may have a biological origin, perhaps because of the utility of pain perception as part of the birthing process (Berkley, 1997). However, social pressures such as stereotypical social gender roles could act in synergy with any organic predisposition for sex pain perception differences. For example, Otto and Dougher (1985) showed that participants reported higher pain thresholds when the experimenter was dressed in a business suit or a laboratory jacket than when they were dressed informally in pants and an open-necked shirt. Based on previous work which has demonstrated cross-gender social roll effects, it was predicted that being tested by a female experimenter would cause male participants to report a higher pain threshold than would being tested by a male experimenter.

Method

Participants

Male volunteers from the school wrestling team (N = 34), whose age range was 18 to 23 years (M=20.2, S = .81). All were in good health and not using any form of medication. Participants were randomly assigned to either a male or a female experimenter.

Apparatus

Threshold levels were measured using a pressure algometer which had a range of 0 to 9 kg. The part of the algometer applied to the participant consisted of a round cork cap 1 cm in diameter. Pressure was applied to the upper sternum

to minimize the influence of constitutional factors such as muscle mass or subcutaneous tissue. Participants were seated upright with the back braced against the firm back of the chair.

Procedure

One women and one man each aged 21 years were the experimenters. The male experimenter wore a T-shirt and jeans, while the female experimenter dressed in a laboratory jacket. Both followed exactly the same procedural script, which ensured that the same verbal instructions were given to all participants.

Participants were seated in a small room, isolated from visual or auditory distractions. Participants were told to close their eyes to cut down on possible distractions and to prevent them from trying to read the algometer's calibration. The standardized algometer procedure established by Volton (1953) and used by all researchers in this are was used. Pressure was applied to the upper sternum at a steady rate of 1 kg. per second, until the participant said "stop" when the first pain sensation was felt, and this was taken as the pain threshold measure. The algometer was applied directly to the skin of the participants by the male experimenter, but was applied to the garment worn by the participant by the female experimenter, for obvious ethical reasons.

Results

The average pain thresholds were $M = 3.53$ ($S = 1.16$) for female experimenter condition and $M = 2.77$ ($S = .92$) for the male experimenter condition. As hypothesized, threshold for the female experimenter condition as statistically significantly different from that of the male experimenter condition, $F(1, 32) = 12.322$, $p < .001$.

Discussion

Studies such as the one presented here indicate that pain perception differences between men and women can be amplified by factors such social stereotypes. Given the large numbers of females present in clinic or hospital settings, attenuation of male sensitivity to noxious stimulation by such psychosocial influences could mean that male patients systematically underreport pain as has been observed by Lamey, Clifford, Gijsbers, and Bicholson (1996) and should be taken into account in diagnostic and therapeutic purposes.

Answer the following based on the attached story problem.

1. What is the DV ? (3 points) _____
2. What is the IV? (3 points) _____
3. What are the conditions of the IV? (3 points) _____
4. What type of research design was used? (6 points) _____
5. What type of research hypothesis is this? (5 points) _____
6. Comment on the internal validity of this study. (10 points)
- Identify those aspects of the design and procedure that you think enhanced the internal validity

- Identify those aspects of the design and procedure that you think impaired the internal validity of this study.

7. Comment on the external validity of this study. (10 points)
- Identify those aspects of the design and procedure that you think enhanced the external validity

- Identify those aspects of the design and procedure that you think impaired the external validity of this study.

8. You have been asked to propose the design of an additional study to investigate the research hypothesis. Describe the design and procedures of that proposed study. (Be sure to cover, but not limit yourself to, the limitations in the study indicated by the author in the discussion.) (10 points)
- What would you change to improve external validity?

- What would you change to improve internal validity?