Impact of Patient and Observer characteristics on Perceptions of Women with Fibromyalgia (FM) and Rheumatoid Arthritis (RA)

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Background & Purpose

- The subjective nature of pain assessment renders judgments of pain highly susceptible to biasing influences (Tait & Chibnall, 1997).

- Several characteristics unrelated to health status contribute to perceptions about patients in pain.
  - Patients who are more attractive, lack visible cues to pain, lack objective medical evidence for their pain, or are viewed as being responsible for their pain, are generally perceived as having lower levels of pain and less functional disability (Hadjistavropoulos et al., 1996; Lundquist et al. 2002; Dijiker & Koomen, 2003).
  - Patients who are more attractive, have visible disability cues, or have objective medical evidence are generally perceived as having more positive personality traits (Lavoie et al., 2009).
  - Examining the relative importance of these three stereotypes on perceptions of patients with RA or FM we (Lavoie et al., 2009) have found that physical attractiveness became more salient when the target's diagnosis was ambiguous and there was no visible sign of disability. The negative impact of diagnostic ambiguity became less salient in the presence of a visible sign of disability.

- Several observer characteristics have also been found to contribute to perceptions about the person in pain.
- Lundquist et al (2002) found that, compared to observers with a Supportive AS (SAS), those with an Unsupportive AS (UAS) make more negative judgements of patients and are more susceptible to the influence of non-illness related factors.
- Undergrad students who have a family member with pain tend to be more accurate in estimating an unfamiliar person's pain level compared to those with no family history of pain or health care professionals (Prkachin et al., 2001).

Purpose
1. To examine the relative contributions of' physical attractiveness, diagnostic ambiguity, and visibility of disability to judgements made by persons in the general community.
2. To examine the extent to which observers' AS and degree of experience with pain moderates the impact of these stereotypes.

Method

Stimulus Materials:
- Photos of 8 women (targets), rated on levels of physical attractiveness were randomly assigned to each of the cane and diagnostic conditions.
- 20 7-point (0-6) Likert Scale items related to the women's Pain/Disability (P/D), Personality Traits, and Responsibility for their illness, as well the observer's Anger and Sympathy/Desire to Help.
- Reasons for Misfortune Questionnaire (RMQ; Higgins, 1992) to determine AS.
- Demographic/concluding questionnaire.

Participants (Observers):
- 98 community participants in three groups: i) No Pain Experience, ii) Personal Pain Experience, and iii) Acquaintance Pain Experience
- Based on the RMQ, 33 observers with an UAS and 33 with a SAS comprised the final sample.

Analyses:
- Between subjects MANOVA and ANOVAs were used to test the hypotheses.

Hypotheses & Results

Hypothesis 1: Physical Attractiveness
- The more attractive women were expected to be rated as having lower P/D levels, more positive Personality traits, and lower levels of Responsibility for their condition.
- When the women were more attractive, observers were also expected to report feeling less Anger and more Sympathy/Desire to Help.
  - **Results:**
  - ✓ More physically attractive targets were rated as having lower P/D levels and more positive Personality traits.
  - ✗ Attractiveness did not impact ratings of P/D, Responsibility, Anger, or Sympathy/Desire to Help.

Hypothesis 2: Visible Cues to Disability
- Women with no visible disability cue were expected to be rated as having lower P/D, less positive Personality traits, and higher levels of Responsibility.
- When there was no visible disability cue, observers were also expected to report more Anger and less Sympathy/Desire to Help.
  - **Results:**
  - ✓ Women with no visible disability cue were rated as having lower P/D levels.
  - ✗ Women with no visible disability cue were perceived as having more positive Personality traits and lower levels of Responsibility.
  - ✗ When there was no visible disability cue, observers reported feeling less Anger.
  - ✗ Visibility did not impact observers' Sympathy/Desire to Help.

Hypothesis 3: Diagnostic Ambiguity (RA vs FM)
- Women with FM were expected to be rated as having lower P/D levels, less positive Personality traits, and higher levels of Responsibility.
- When the women had FM, observers were also expected to report more Anger and less Sympathy/Desire to Help.
  - **Results:**
  - ✗ Ambiguity did not impact ratings of P/D, Responsibility, or Sympathy/Desire to Help.
  - ✗ Women with a diagnosis of FM were rated has having more positive Personality traits.
  - ✗ When the women had FM, observers reported feeling less Anger.

Hypothesis 4: Attributional Style
- An UAS was expected to amplify the negative impact of the stereotypes on each of the DVs.
  - **Results:**
  - ✗ The only significant interaction involving AS was a three-way interaction between AS, Attractiveness, and Ambiguity for observers' ratings of Responsibility.
    - Post-hoc pair-wise comparisons revealed the 3-way interaction was significant only when observers had an UAS and the targets had a diagnosis of FM. A follow-up 1-way ANOVA indicated that observers with an UAS rated the less attractive targets with FM as having less Responsibility compared to the more attractive targets with FM, $F(1, 32) = 4.63$, p = .039, h_p^2 = .126

Hypothesis 5: Level of Pain Experience
- Increased Experience was expected to reduce the negative impact of the stereotypes on each of the DVs.
  - **Results:**
  - ✗ Experience did not moderate the impact of any of the stereotypes on the DVs

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Exploratory Analyses: Examination of the 3-Way Interactions among Attractiveness, Visibility, and Diagnosis
- The only significant 3-way interaction was for ratings of the Personality Traits (see Figure 1).
  - Post-hoc analysis with Bonferonni correction revealed that among the less attractive targets observers' ratings of Personality differed significantly for the targets with FM versus RA only when there was no cue to disability, p = .000, h_p^2 = .254. Targets with FM received more positive ratings.
  - In contrast, among the more attractive targets, observers' ratings of Personality differed significantly for the targets with FM versus RA only when the cue to disability was present, p = .000, h_p^2 = .267. Again, targets with FM received more positive ratings.

Table 1: Significant ANOVA and MANOVA Findings

|	F	df	Sig	Partial η²
Personality Ratings				
Attractiveness	17.79	1, 62	.000	.223
Visibility	7.66	1, 62	.007	.110
Diagnosis	16.35	1, 62	.000	.209
A x V	16.09	1, 62	.000	.206
A x V x D	24.54	1, 62	.000	.284
A x D x AS	7.28	1, 60	.009	.105
Anger Ratings				
Visibility	10.77	1, 62	.002	.148
Diagnosis	5.62	1, 62	.021	.083
Pain/Disability Ratings				
Attractiveness	86.57	1, 60	.000	.583
Visibility	133.08	1, 60	.000	.682
A x V	21.07	1, 60	.000	.254
A x D	7.49	1, 60	.008	.108
V x D	51.02	1, 60	.000	.451
Responsibility Ratings				
Visibility	13.21	1, 60	.001	.176
A x V	5.90	1, 60	.018	.087
A x D	4.10	1, 60	.047	.062
A x D x AS	7.28	1, 60	.009	.105
Sympathy/Desire to Help Ratings				
Observer	10.05	2, 60	.000	.245
V x D	8.12	1, 60	.006	.116
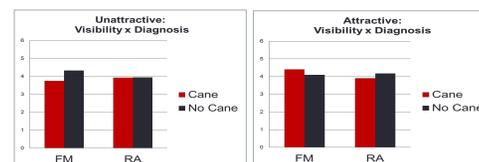
Figure 1: Attractiveness x Visibility x Diagnosis for Personality Ratings

Discussion

Beauty = Goodness and Health (Attractiveness Stereotype)
- Physical Attractiveness was associated with perceptions of lower Pain/Disability levels and more positive Personality Traits.
- This replicates previous findings using undergraduates and health care professionals suggesting this stereotype is a universal phenomenon impacting how patients are perceived regardless of the observers experience with pain or training.

An Invisible Disability = Goodness and Health (Disability Stereotype)
- Lack of a Visible Cue to disability contributed to less anger in the observer and to perceptions that the patient had more positive personality traits and lower levels of Pain/Disability. Thus, while the use of a cane may add some legitimacy to the pain/disability experience, it also results in observers responding less favorably to patients – perhaps due to beliefs the patient is exaggerating or not working hard to overcome their pain.
- Our findings and those of past research have consistently found the legitimacy effect in that patients with a visible cue to disability are perceived as having more pain and disability.
- Our finding that an invisible disability was equated with goodness, while consistent with the results of past research examining disability in general, is inconsistent with past research examining disability related to chronic pain. More research is needed to further clarify the circumstances under which a visible disability cue leads to more positive or negative evaluations.

Diagnostic Ambiguity = ?? (Ambiguity Stereotype)
- Our finding that diagnostic ambiguity was associated with perceptions of more positive Personality Traits and less Anger toward the patient are inconsistent with previous research.
- Further research is need to clarify this finding – it may be due to nature of our participant sample or to use of vignettes rather than real patients. Also, it may be that Ambiguity plays a role in moderating the impact of other stereotypes as there were a number of 2- and 3-way interactions among Ambiguity and the other IVs.

Interaction among Attractiveness, Visibility, and Ambiguity on Perceptions of Personality
- The pattern of findings for the 3-way interaction indicates that the impact of the Disability Stereotypes differs depending on the targets level of physical attractiveness. In each case patients with FM were perceived more positively then patients with RA, however, for attractive patients this occurred only in the presence of a cane where as for less attractive patients this occurred only in the absence of a cane.
- Interestingly, the outcome of the two opposing stereotypes appears to work in the patients favour such that the Beautiful is Good Stereotype prevails for the more attractive patients, while the Invisible Disability is Good Stereotype prevails for the less attractive patients.

Observer-Related Variables (Pain Experience and Attributional Style)
- The two observer-related variables we evaluated had very little to no effect on observers' perceptions of the patients. This speaks further to universal activation of the Beauty is Good/Healthy and Invisible Disability is Good/Healthy Stereotypes. The accumulated evidence now shows that these two stereotypes are activated in all types of observers (from undergrads to community members to health professions) regardless of individual differences in level of experience or type of attributional style.
- The only IV influenced by pain experience was Sympathy/Desire to Help. Moreover, experience was the only variable that directly (or indirectly) impacted ratings of Sympathy/Desire to Help. While further evaluation of this effect is needed, it may be that experience with pain supersedes the stereotypes when making support decisions.

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