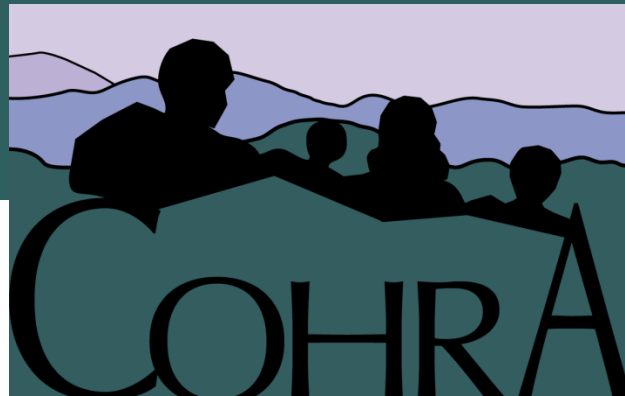


Fears about Pain and Dentistry as Predictors of Oral Health

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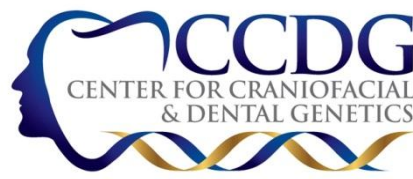
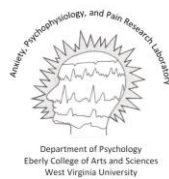
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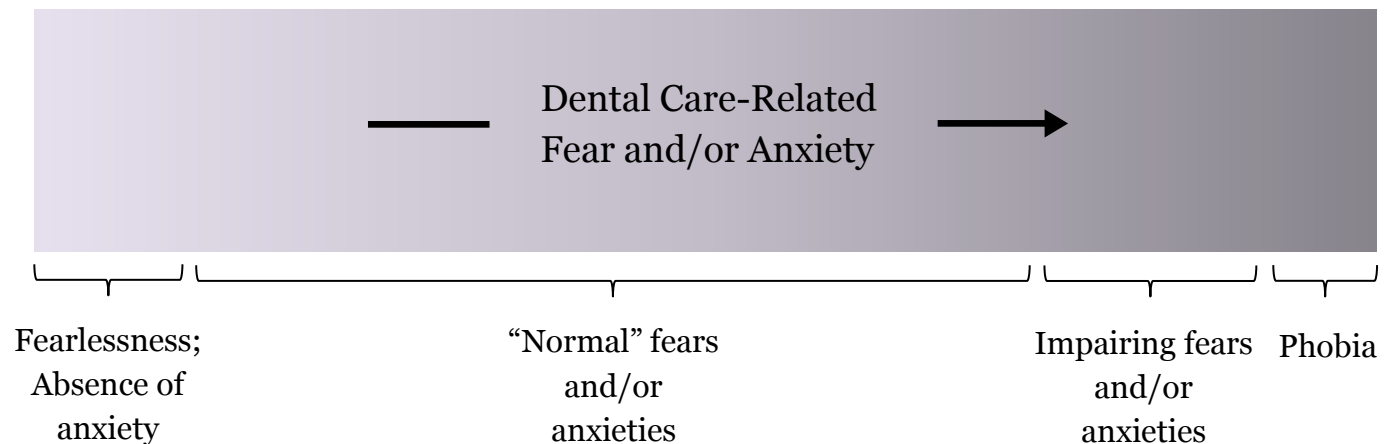
Overview and Significance

- Between 10% and 20% of adults report a high level of fear associated with dental visits (Smith & Heaton, 2003)
- Greater levels of dental care-related fear → avoidance of treatment (Doerr et al., 1998; Moore et al., 1996)
- Avoidance of dental care associated with poorer oral and systemic health (Schuller et al., 2003; Williams et al., 2008)



Introduction: Dental Care-Related Fear

- Dental care-related fear is an in-the-moment response to the (threatening) dental situation



From McNeil & Randall (in press)

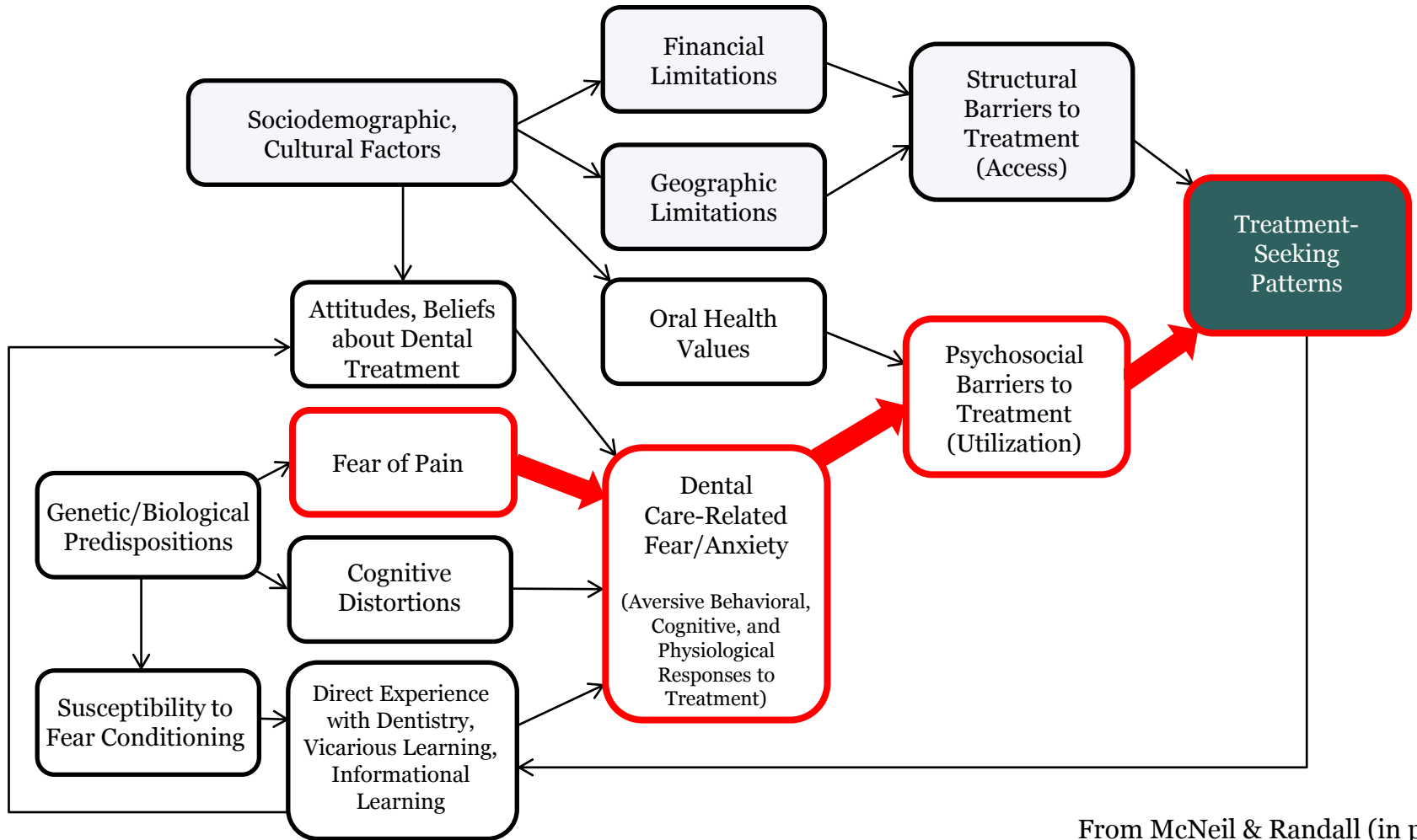


Introduction: Fear of Pain

- Fear of pain is a critical component of dental care-related fear (McNeil & Berryman, 1989)
- Interplay of fear of pain and pain sensitivity is important for understanding dental-care related fear (Kent, 1985; McNeil et al., 2011)



A Model of Dental Care-Related Fear



From McNeil & Randall (in press)



Dental Fear and Oral Health Status

- Greater degree of dental care-related fear associated with:
 - Irregular brushing and flossing (Riley et al., 2006)
 - Non-compliance with treatment regimens (Ojima et al., 2005)
 - Increased incidence of dental disease (Levin & Shenkman, 2004)
 - More decayed and missing teeth (Armfield et al., 2009; Schuller et al., 2003)
 - Fewer restored/filled teeth (Armfield et al., 2009; Schuller et al., 2003)



Statement of Problem

Research has not yet addressed whether fear of pain is directly associated with poor oral health outcomes, particularly in the context of dental care-related fear



Hypotheses

1. Dental care-related fear predicts DMFT
2. Fear of pain predicts DMFT
3. Fear of pain is associated with more decayed and/or missing teeth and fewer filled teeth



Participants

- Cohort taking part in the Center for Oral Health Research in Appalachia (COHRA) study on determinants of oral diseases in families
 - $N = 1124$ (680 female)
 - Ages 18 – 81 years ($M = 35.4$, $SD = 9.4$)
 - Appalachian population (McNeil, Crout, & Marazita, 2012)



Method

- Participants completed study questionnaires as part of a larger, comprehensive protocol (Polk et al., 2008)
- Measures
 - **Dental Fear Survey** – 20-item, self-report measure of anxious reactions to dental situations (Kleinknecht et al., 1973)
 - **Short Form-Fear of Pain Questionnaire** – 9-item, self-report measure of pain-related fear (McNeil & Rainwater, 1998)



Method

- Caries assessment
 - Sound
 - Decayed
 - Filled
 - Missing
- DMFT score

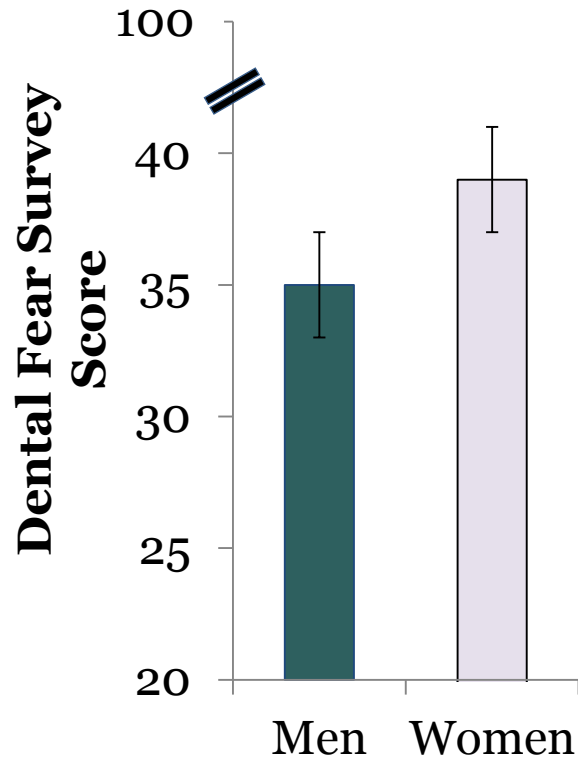


Results – Basic Associations

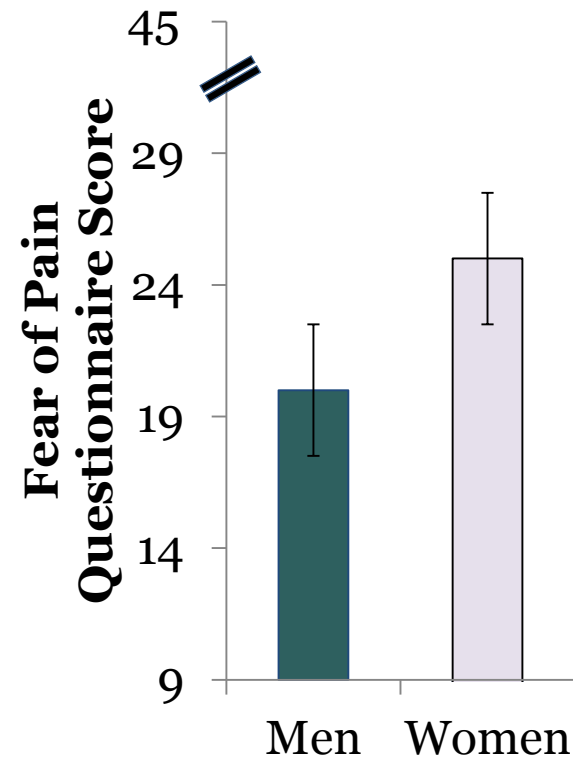
- Dental care-related fear and fear of pain are related, $r = .48$, $p < .001$
- Dental care-related fear is associated with increasing age, $r = .06$, $p = .04$
- Dental care-related fear is associated with lower income, $r = .09$, $p = .004$



Results – Gender Differences



$t(1122) = 2.57, p = .01$



$t(1122) = 8.5, p < .001$



Results – Predicting Oral Health Status



Results - DMFT

Regression model: What predicts DMFT?

| Predictor Variable | Unstandardized regression coefficient (B) | Standard Error | Standardized Regression Coefficient (β) | Significance Value (p) |
|----------------------------------|---|----------------|---|------------------------|
| Age | .239 | .021 | .357 | < .001 |
| Income | -.292 | .107 | -.090 | .007 |
| Years of Education | -.022 | .081 | -.009 | .784 |
| Dental Fear Survey Score | .052 | .011 | .154 | < .001 |
| Fear of Pain Questionnaire Score | -.068 | .025 | -.090 | .006 |



Results – Decayed Teeth

Regression model: What predicts number of decayed teeth?

| Predictor Variable | Unstandardized regression coefficient (B) | Standard Error | Standardized Regression Coefficient (β) | Significance Value (p) |
|----------------------------------|---|----------------|---|------------------------|
| Age | -.011 | .012 | -.027 | < .001 |
| Income | -.261 | .064 | -.135 | < .001 |
| Years of Education | -.283 | .049 | -.186 | < .001 |
| Dental Fear Survey Score | .048 | .007 | .237 | < .001 |
| Fear of Pain Questionnaire Score | -.075 | .015 | -.165 | < .001 |



Results – Missing Teeth

Regression model: What predicts number of missing teeth?

| Predictor Variable | Unstandardized regression coefficient (B) | Standard Error | Standardized Regression Coefficient (β) | Significance Value (p) |
|----------------------------------|---|----------------|---|------------------------|
| Age | .107 | .011 | .296 | < .001 |
| Income | -.207 | .058 | -.119 | < .001 |
| Years of Education | -.201 | .044 | -.146 | < .001 |
| Dental Fear Survey Score | .025 | .006 | .139 | < .001 |
| Fear of Pain Questionnaire Score | -.031 | .014 | -.076 | .022 |



Results – Filled Teeth

Regression model: What predicts number of filled teeth?

| Predictor Variable | Unstandardized regression coefficient (B) | Standard Error | Standardized Regression Coefficient (β) | Significance Value (p) |
|----------------------------------|---|----------------|---|------------------------|
| Age | .143 | .016 | .264 | < .001 |
| Income | .176 | .084 | .067 | .037 |
| Years of Education | .461 | .064 | .224 | < .001 |
| Dental Fear Survey Score | -.021 | .009 | -.077 | .015 |
| Fear of Pain Questionnaire Score | .037 | .020 | .061 | .050 |



Conclusions

- Hypothesis 1: Dental care-related fear predicts DMFT

SUPPORTED

- Hypothesis 2: Fear of pain predicts DMFT

SUPPORTED

- Hypothesis 3: Fear of pain is associated with more decayed and/or missing teeth and fewer filled teeth

Evidence for the opposite



Limitations

- Reliance on self-report measures
- Included only two variables related to dental care-related fear in regression model
- DMFT is only one measure of oral health status
- Rural sample comprised only of people living in Appalachia



Discussion

- Dental care-related fear and fear of pain are intimately related
- A complete conceptualization of dental care-related fear is necessary
- Interventions could:
 - Reduce “vicious cycle” of dental fear/avoidance
 - Improve health outcomes
 - Improve patient quality of life
 - Reduce financial burden of costly procedures



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Thank you for your attention.

