Prayer and pain: The mediating role of cognitive reappraisal

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More information:


Acknowledgments:

We would like to thank The Flemish Pain League for their collaboration in this study.
Chronic pain

A devastating and widespread problem in Europe:

- 19% of the adult population suffers from CP
- Average duration 7 years
- 20% job loss due to pain condition
- 20% diagnosed with depression
- 50% reports feeling helpless, unable to function normally
- 17% suicidal ideas due to pain condition
Chronic pain

• Traditional pain management strategies:
  → not always pain relief or increase life quality

• Focus on effectiveness of complementary pain relief strategies

• → increasing interest in spiritual and religious resources
Chronic pain

• Chronic pain seems to alter the role of religion/spirituality in patients’ lives:

  – 40% of patients report to be more religious after the onset of CP
    (Glover-Graff et al., 2007)

  – religious factors are often used in coping with pain
    (Turner & Clancy, 1986)

  – prayer is a frequent response to pain
    (Glover-Graff et al., 2007)
Chronic pain and prayer

• suboptimal effect of traditional pain relief strategies

+ 

• interest of patients in religious factors

→ research on usefulness of religious factors is warranted
Theoretical model

• **Meaning making model** (Park, 2010 for an overview)

  – adaptation of traditional stress and coping models (e.g. Lazarus & Folkman)

  – focus on unsolvable, chronic stressors → no problem-solving

  – theme of ‘meaning’ is very relevant in these stressors

  – CP fits the definition of an unsolvable, chronic stressor
Theoretical model

- Meaning making with chronic pain

Chronic pain

Appraised meaning

Meaning system

Meaning making process

adaptation
Theoretical model

• Meaning making with chronic pain

Chronic pain

Meaning system

Appraised meaning

Meaning making process

REAPPRAISAL

adaptation

PAIN TOLERANCE
PAIN INTENSITY

PRAYER
Purpose of the study

• Is prayer a valuable psycho-social coping mechanism for those experiencing chronic pain?

→ prayer as cognitive act: reframing the pain experience based on the religious framework

→ underlying mechanism: cognitive processing stimulates healthy adaptation

→ focus on pain tolerance and on pain severity
Purpose of the study

Is prayer a cognitive reappraisal act for pain patients?

- Prayer → Pain tolerance/ intensity

  Cognitive re-appraisal
Method of the study

- 202 CP patients filled out questionnaires
  - Socio-demographic variables
  - Pain:
    - pain duration
    - pain severity (Bush et al., 1999)
    - pain tolerance (Disability Scale of Chronic Pain Grade Questionnaire, Von Korff et al., 1992)
  - Prayer:
    - Frequency of prayer activity
  - Cognitive reframing
    - Cognitive re-appraisal (Positive Re-interpretation and Growth Scale, Carver, et al. 1989)
Results: correlations between the study variables

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** indicates significance at p < .01, * indicates significance at p < .05.
Results: correlations between the study variables

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Results:

Mediational analyses (Baron & Kenny)

Prayer $\rightarrow$ Pain severity

$a (\beta = .33, p < .001) \rightarrow$ Cognitive Positive Re-appraisal $\rightarrow$ Pain tolerance

$c_1 (\beta = -.01, ns) \rightarrow$ Pain severity

$c_2 (\beta = .15, p < .05) \rightarrow$ Pain tolerance

$b_1 (\beta = .44, p < .001) \rightarrow$ Pain severity
Results: Mediation analyses

Prayer → \( c_1(\beta = .01, ns) \) → Pain severity

Prayer → a (\( \beta = .33, p < .001 \)) → Cognitive Positive Re-appraisal

Cognitive Positive Re-appraisal → b_1

Prayer → \( c_2(\beta = .15, p < .05) \) → Pain tolerance

Prayer → a (\( \beta = .33, p < .001 \)) → Cognitive Positive Re-appraisal

Cognitive Positive Re-appraisal → b_2 (\( \beta = .44, p < .001 \)) → Pain tolerance
Results:

Mediation analysis (Preacher & Hayes, 2004)

- **Prayer**
  - to **Cognitive Positive Re-appraisal** via **a** ($\beta = .33, p < .001$)
  - to **Pain tolerance** via **b_2** ($\beta = .44, p < .001$)

- **Cognitive Positive Re-appraisal**
  - to **Pain severity** via **c_1** ($\beta = -.01, ns$)
  - to **Pain tolerance** via **b_1** ($\beta = .15, p < .05$)

No significant effect of **Prayer** on **Pain severity** ($\beta = .01, ns$).
Results:
Mediational analyses

• **Bootstrapping methodology** *(Preacher & Hayes, 2004)*

  - Indirect effect of cognitive re-appraisal is significant *(point estimate = .11, 95% BC CI: .06 to .16 with 3000 resamples)*

  - The relation between prayer and pain tolerance may be mediated by re-appraisal
Results:
Moderation analyses

• Ancillary analyses:

“what is the role of religiosity?” (belief salience/centrality of belief)

→ earlier studies showed that religious aspects are important in pain management especially for religious patients (Dezutter, et al., 2010)

• Moderation effect of religiosity
Results: Moderational analyses

- Low prayer
- High prayer

Pain intensity

- Religious non affiliated
- Religious affiliated
Results:
Moderational analyses

![Graph showing pain tolerance by prayer level for religious non-affiliated and religious affiliated individuals.]

- Pain tolerance on the y-axis, ranging from 3 to 8.
- Two lines on the graph:
  - Solid line for religious non-affiliated individuals.
  - Dotted line for religious affiliated individuals.

Legend:
- Religious non-affiliated
- Religious affiliated
Conclusion

1. prayer is positively related to pain
   
   – relationship between prayer and pain severity/ pain tolerance is depending on the religiosity of the patient

   – for believers high levels of prayer were related with lower levels of pain severity and higher levels of pain tolerance (vs non believers)

   – prayer can be a useful factor in pain management but only for pain patients who are religious
Conclusion

2. positive re-appraisal mediated the relationship between prayer and pain tolerance

- prayer seems to function as a positive re-appraisal technique for the CP patient

- the underlying psychological/cognitive process alters the impact of pain on daily life activities
Limitations

• Patients are members of patients’ association

• Frequency of prayer is too ‘simple’ as operationalization
  
  – Types of prayer (Poloma & Pendleton, 1991)
  – Content of prayer
  – Attitudes toward prayer (Krause, 2004)
  – ...

• Cross-sectional character of the study
• Thank you for your attention!

• Suggestions, comments, etc. are welcome.