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The relationship between physical health complaints & suicidality among chronic pain patients

**Society of Behavioral Medicine, Seattle, WA
7-10 April 2010**

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STUDY #1

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The Relationship Between Health Impairment & Suicide Attempt Status



Overview/Objective

- **Categorical differences exist between:**
 - **Single attempters**
 - **zero attempters (i.e., individuals with no history of suicide attempts)**
 - ***multiple suicide attempters* (i.e., individuals with 2 or more suicide attempts)**
 - **Higher rates of psychopathology**
 - **Greater risk for future suicide attempts**
 - **More likely to eventually die by suicide**



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Overview/Objective

- **Importance of differentiating between 2 dimensions of suicide risk:**
 - **Acute**
 - **Baseline (i.e., chronic) risk**



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Overview/Objective

- Beck (1996)
- The tenants of *fluid vulnerability theory (FVT)*
 - Baseline risk
 - Individual's "set point" for suicide risk
 - Multiple attempters are at chronically elevated baseline risk for suicidal crises
 - Acute risk
 - The level of risk present during a crisis, when a patient is at his or her relative worst
 - Time-limited and exacerbated by psychological distress, hopelessness, and depressive symptoms



Overview/Objective

- **Suicidal individuals have reported**
 - **Poorer health than non-suicidal patients**
 - **Medical services accessed much more frequently**
 - (Goldney et al., 2001; Juurlink et al., 2004)
 - **Higher levels of psychiatric symptoms**
 - **Higher level of somatic symptoms (e.g. pain and sleep problems)**
 - (Juurlink et al, 2004; Stenager & Jensen, 1994)



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Overview/Objective

- **Chronic pain is a well-established risk factor for suicidal ideation (SI) and behaviors**
 - **Association with ill health**
 - **Greater functional impairments**
 - **Greater psychiatric symptoms**
 - **(Goodwin et al., 2003)**



Overview/Objective

- **1/3 to nearly 1/2 of all chronic pain patients consider suicide as an escape from symptoms (Hitchcock et al., 1994; Smith et al., 2004; Thomas, 2000)**
 - **Adult migraine (Breslau, 1992)**
 - **Abdominal pain (Mangi et al, 1998)**
 - **Non-malignant chronic pain (Smith et al., 2004)**
 - **Orthopedic pain (Hinkley & Jaremko, 1994)**



Overview/Objective

- **10-year prospective study involving pts with back pain (Fisher et al, 2001)**
 - **Previous suicide attempts associated with a 2x increase in risk for suicidal thinking among depressed chronic pain patients**
 - **Study did not differentiate between single and multiple attempters**
 - **Limited conclusions regarding support for (or against) FVT**



Hypotheses

- **Significant differences would be evident between zero attempters, single attempter, and multiple attempters:**
 - **Health status**
 - **Pain experience and impairment**
 - **Depression**
 - **Anxiety**
 - **Death ideation & Suicide ideation**
- **Multiple attempters expected to have the greatest relative level of dysfunction and pathology**
- **Zero attempters expected to be relative “healthiest” group**
- **Single attempters expected to fall in between**



Methods: Participants & Procedures

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- **N=188 patients referred to Clinical Health Psychology (CHP) clinic**
 - **Large MTF in southern US**
- **No history of any suicide attempt classified as *zero attempters* (94.7%)**
- **One confirmed suicide attempt classified as *single attempters* (2.1%)**
- **Two or more confirmed suicide attempts classified as *multiple attempters* (3.2%)**



Methods: Measures

- ***Health Status:*** The SF-36 Health Survey (Ware, 1999)
- ***Physical pain:*** The Multidimensional Pain Inventory (Kerns et al., 1985)
- ***Depression:*** Beck Depression Inventory-II (Beck et al., 1996)
- ***Anxiety:*** Beck Anxiety Inventory (Beck & Steer, 1993)
- ***Death ideation:*** Suicide Ideation Scale (Rudd, 1989)
- ***Suicide attempt history:***
 - “a potentially self-injurious behavior with a nonfatal outcome, for which there is evidence (either explicit or implicit) that the person intended at some (nonzero) level to kill himself/herself” (O’Carroll et al, 1996)



- **Three-stage analytical approach**
 1. **Initial multivariate analyses of variance (MANOVAs) with attempt status as source of variation performed separately for each category of DV**
 2. **Only significant MANOVAs were followed with one-way analyses of variance (ANOVAs) on each of the individual DVs in a given category**
 3. **Significant one-way ANOVAs were followed by multiple pair-wise comparisons**



- *Does attempt status differentiate health status?*
- **SF-36**
 - **Zero attempters demonstrated highest mean scores**
 - **Multiple attempters demonstrated greatest level of dysfunction**
 - **Single attempters fell between these groups**
 - **Multiple attempters demonstrated significantly greater levels of dysfunction**
 - **MANOVAs ($F(20, 340) = 1.604, p = .049, \lambda = .835, \eta^2 = .086$)**
 - **Non-significant trends were also observed between multiple attempters and zero attempters on the several scales**



- *Does attempt status differentiate pain experience?*
- **MPI**
 - Multiple attempters generally demonstrated greatest level of health dysfunction
 - Zero attempters generally demonstrated the greatest amount of relative health
- **MANOVAs were non-significant;**
 - $(F(22, 196) = .616, p = .910, \lambda = .875, \eta^2 = .065)$
 - Reviewed Means scores for future research ideas
 - Mean scores suggested multiple attempters had:
 - More severe pain
 - Greater levels of affective distress
 - More perceived support from their significant other
 - More likely to respond to pain by asking others for assistance
 - Were utilizing more distraction strategies



- *Does attempt status differentiate symptom-level variables?*
- **Symptom-Level Variables**
 - **MANOVA ($F(6, 204) = .011, p = .011, \lambda = .851, \eta^2 = .078$)**
 - **Multiple attempters reported greatest desire for death and highest levels of depression & anxiety**
 - **Multiple attempters significantly differed from the zero attempter group on death ideation**
 - **Zero attempters reported the lowest levels on these symptom variables**
 - **Single attempters fell in-between**



- **Multiple attempter group demonstrated:**
 - **Greater perceived impairment in quality of life associated with physical functioning**
 - **Lower emotional and social functioning**
- **Similar pattern found in reported symptoms of depression, anxiety, and desire for death:**
 - **Multiple attempters were the relative “sickest”**
 - **Zero attempters were the relative “healthiest”**



- **Multiple attempters with chronic pain, even at their relative best, desire death much more frequently & intensely than zero and single attempters with chronic pain**
- **Findings support the primary tenant of FVT that multiple attempters have increased vulnerability & sensitivity to suicidal crises**
- **Chronic pain may serve as a less pernicious predictor for suicide risk than emotional and psychological factors**
- **From a clinical perspective....**



Limitations

- **Sample consisted of a clinical population seeking treatment for pain-related conditions**
 - **Limits generalizability**
- **Did not include treatment-seeking patients with other medical issues (comparison group)**
- **Restricted range of SI reported**
- **Use of a single-item measure of SI**



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Future Research

- **Larger samples of different attempt status (i.e., a larger N in each sub-category)**
- **Larger groups of chronic pain patients with different pain experiences (i.e., headaches, cancer-related pain, lower back pain)**



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STUDY #2

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Pain-Related Factors that Predict Suicidal Ideation Among Chronic Pain Patients



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Overview/Objective

- **Growing body of research implicates a strong link between chronic pain conditions and suicidality**
 - **Suicidal ideation (SI)**
 - **Suicide attempts (SA)**
 - **Death by suicide**

- **Consistent evidence that among patients w/ chronic pain depression augments suicidality potentially through:**
 - **Pain severity**
 - **Duration**



Overview/Objective

- **Converging evidence links:**
 1. Pain with depression
 2. Pain with suicidality
 3. Depression with suicidality
- **Little research investigating *combined* influence of pain and depression in predicting suicidality**



Overview/Objective

- ***Moderating* effect on pain severity and suicidality?**
 - **Could enable better identification of conditions where pain severity is likely to raise suicide risk (e.g., among severely depressed individuals only)**
- ***Mediating* effect?**
 - **The relationship between pain severity and suicidality might be explained by the presence of depression**



Overview/Objective

- **Several studies suggest an interaction between pain and depression might exist**

- **Tang and Crane (1996)**
 - **Part of association between pain & suicidality attributed to co-occurring psychiatric issues**
 - **Considerable gap in the understanding functional limitations and disability**



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Purpose

- **Investigation of the relationship of co-occurring depression and pain experience with SI**
 - **In a chronic pain sample receiving treatment for pain-related problems**



Hypotheses

- 1. Main effects of pain severity, functional limitations secondary to pain, and depression would predict SI**
- 2. Interaction of depression and pain severity would explain unique variance in SI above and beyond the main effects of each variable**



- *Participants and Procedure*
- **N=113 patients referred referred for pain-related health complaints to a Clinical Health Psychology (CHP) clinic**
 - **Large MTF in southern US**

- ***METHODOLOGY***
 - ***SAME AS PREVIOUS STUDY***



- **Measures**
- **Physical pain: The Multidimensional Pain Inventory**
(Kerns et al., 1985)
 - **Pain Severity Scale (severity)**
 - **Interference Scale (impairment)**
- **Depression: Beck Depression Inventory-II** (Beck et al., 1996)
- **Suicidal Ideation (SI): Beck Depression Inventory-II**
(Beck et al., 1996)
 - **Item #9**



- Age, gender, race, and marital status not related to any predictors or outcome variables
- Pain severity and functional impairment due to pain were significantly related to each other, but not significantly related to depression
 - ($r = .207, p < .05$)
- Correlation between depression and SI was statistically significant
 - ($r = .577, p < .01$)



- *Do the main effects of pain severity, pain interference, and depression predict suicidal ideation among chronic pain patients?*
 - **Binomial logistic regression equation was constructed with SI (i.e., BDI Item 9) as DV**
 - **Depressive symptoms was only significant predictor of SI**
 - (Wald coefficient = 13.126, $df = 1$, $p = .000$)
 - **Pain severity and pain interference did not serve as significant predictors of SI**



- *Does the interaction of pain severity and depression predict suicidal ideation above and beyond the effects of depression among chronic pain patients?*

- **Logistic regression**
- **Depression-by-pain severity interaction did not significantly predict SI**
 - **(Wald coefficient = .144, $df = 1$, $p = .704$)**
- **Addition of this variable to the model rendered the main effect of depression non-significant**
 - **(Wald coefficient = .665, $df = 1$, $p = .415$)**



- **Our study explored relationships between pain severity, functional impairment secondary to pain, and depression on SI using continuous variables**
- **Within a clinical sample receiving treatment for pain-related conditions, pain severity and functional impairment did not independently predict SI**
 - **but depression severity did**



Discussion cont...

- **Chief implication for clinical practice**
 - **Providers may improve accuracy of risk assessments with patients by emphasizing the severity and nature of depressive symptoms over pain severity or functional impairment**
 - **For suicidal patients, treatment plans that target depressive symptoms may result in quicker resolution of suicidal crises than treatment plans that primarily target pain management**
- **Overall, we found SI within treatment-seeking chronic pain patients is largely explained by depression**



Limitations

- **Sample consisted of a clinical population seeking treatment for pain-related conditions**
 - **Limits generalizability**
- **Did not include treatment-seeking patients with other medical issues (comparison group)**
- **Restricted range of SI reported**
- **Use of a single-item measure of SI**



Future Research

- **More robust measures of suicidality**
- **Replication with a larger sample**
- **Investigation of other psychosocial variables with the relationship between pain and suicidality**



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STUDY #3

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Perceived Burdensomeness and Suicide Ideation in Chronic Pain Patients



Overview/Objective

- **Strong link between chronic pain conditions and suicidality** (Fishbain et. al., 1997; Ratcliffe, et. al., 2008; Timonen, et. al., 2003)
 - **Suicide ideation (SI)**
 - **Suicide attempts (SA)**
 - **Death by suicide**

- **High comorbidity between chronic pain and co-morbid depression** (Dworkin & Gitlin, 1991; Fisher et al, 1997; Ohayon & Schatzberg, 2003; Meeks et al., 2008)



Overview/Objective

- **Depression is a well-established independent risk factor for suicidality** (Harris & Barraclough, 1997; Kessler et al., 1999; Yen et al, 2004)
- **Association between suicidality & chronic pain largely unclear**
- **Limited research on the link between chronic pain and suicide**



Overview/Objective

- **“Perceived burdensomeness” has emerged as an important indicator of suicidality**

(Joiner et al., 2002)

The belief that one is a burden to others, does not contribute to the group, and is a liability to the group’s well-being or safety



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Overview/Objective

- **Incrementally predicts SA and SI above and beyond other common suicide risk factors**

(Bryan et al, in press; Joiner et al., 2002; Trout, 1980; Van Orden et al., 2006; Van Orden et al, 2008)

- **Gender**
- **Depression**
- **Hopelessness**
- **Personality disorder diagnosis**
- **Emotional reactivity**



Overview/Objective

- **Construct in medical populations: “self-perceived burden”** (Cousineau et al., 2003)

“Empathetic concern engendered from the impact on others of one’s illness and care needs, resulting in guilt, distress, feelings of responsibility, and diminished sense of self”
(McPherson et al., 2007)



Overview/Objective

- **Chronic medical patients may be uniquely attuned to caregivers' responsibilities**
- **Self-perceived burden may have direct impact on medical decision-making**
 - **Choosing to forego or abate dialysis** (Ashby et al.,2005)
 - **Desire for death** (Chochino et al., 2005; McPhereson et al, 2007)
 - **Interest in physician-assisted suicide** (Wilson et al.,2000)



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Overview/Objective

- **No current research examining perceived burdenomeness in an outpatient chronic pain population**
 - **Particularly as it relates to SI**



- **Investigate association between perceived burdensomeness and SI in patients with chronic pain**
 - **Identify potential role of perceived burdensomeness as significant predictor of SI**



Hypotheses

- **Perceived burdensomeness will directly relate to the presence of SI within patients with chronic pain**
- **Relationship will exist even when controlling for other well-established risk factors**



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Methods: Participants

- **109 patients referred for pain-related health complaints to a Clinical Health Psychology (CHP) clinic**
 - **Large MTF in southern US**
- **Predominantly married (72.1%) Caucasian (66.1%) females (65.1%)**
- **Average age of 42.21 yrs ($SD = 15.63$)**



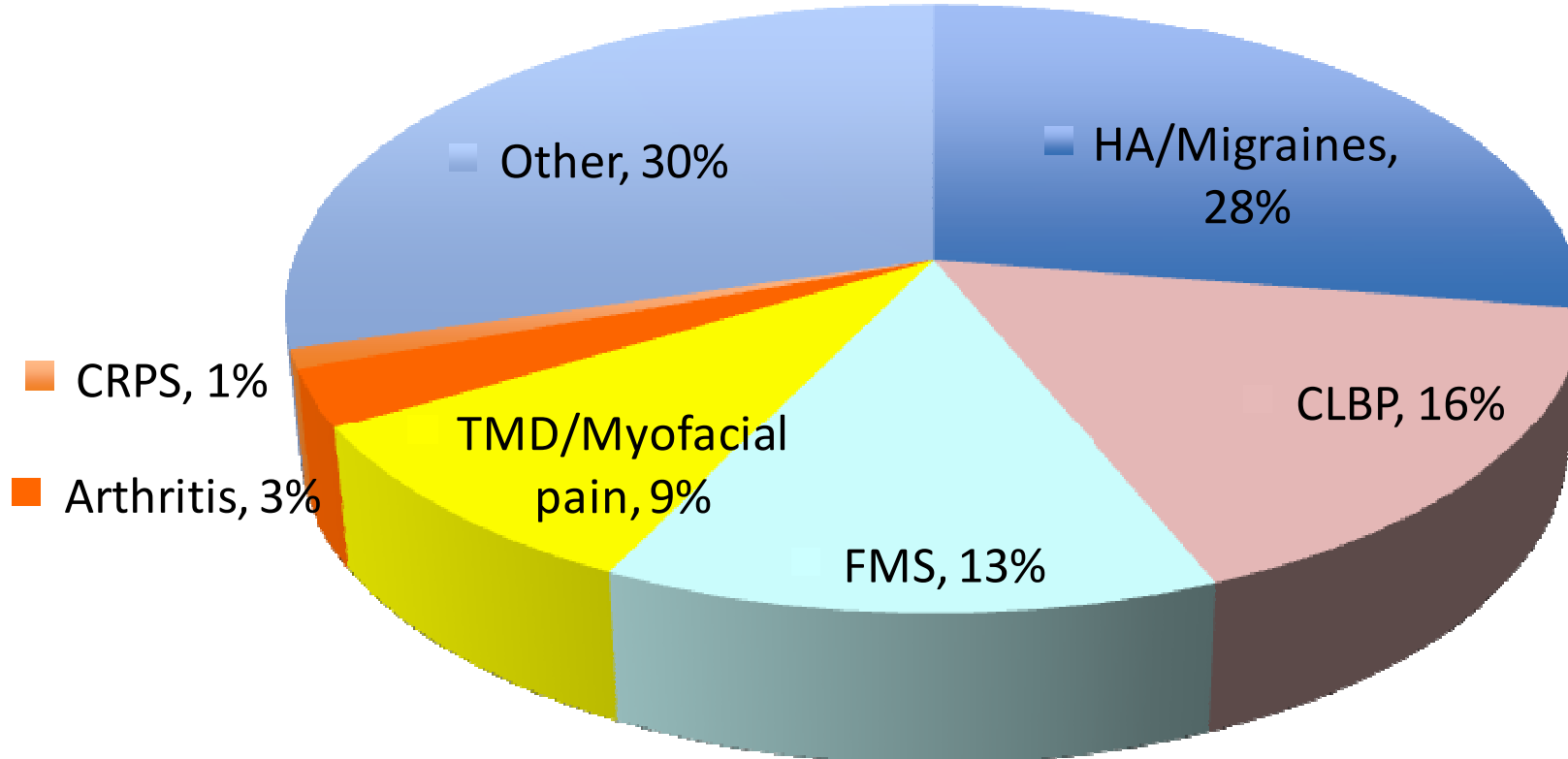
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Methods: Procedures

- **Referrals from medical providers**
 - **For consultative evaluation and treatment recommendations**
 - **For behavioral and psychosocial interventions**
- **Cross-sectional, retrospective chart review**



Location of Chronic Pain





- **Depression: BDI-II** (Beck et al., 1996)
 - Adjusted BDI-II score
 - Subtracted values of items 9 (SI) and 2 (pessimism) from total score
 - Reduced artificially inflated depression
 - Acceptable construct validity/internal consistency with chronic pain populations (Harris & D'Eon, 2008)



- **Hopelessness: BDI-II Item 2**
 - **Utility of Item 2 (pessimism) previously established** (Beck et al., 1996)
 - **For predicting and monitoring suicidality**
 - **Hopelessness is well-established & robust predictor of suicidality**



- ***Suicide ideation: BDI-II item 9***
 - **Moderately correlated (r 's = .56 to .58) with the Beck Scale for Suicide Ideation**
(Beck & Steer, 1991)
 - **Predictive validity established for suicide in clinical outpatient population** (see Brown et al., 2000)



- ***Perceived burdensomeness***: intake question
 - **Utility of single-item measurement previously established** (Van Orden et al, 2006)
 - **“It would be better for everyone involved if I were to die”**
 - **5-point Likert scale measuring frequency**
 - **1 = “Never or none of the time”**
 - **5 = “Always or a great many times”**



- **Logistic regression model with suicide ideation as the DV**
 - **(coded as endorsed = 1 or denied = 0)**



Results: Step 1

- **Model containing age, gender, race, marital status, depression, and hopelessness**
 - **Significantly improved ability to predict SI above & beyond null model**
 - $(\chi^2 (6) = 26.240, p = .000, \text{Nagelkerke } R^2 = .524)$
 - **Prominent predictors, not statistically significant at $p < .05$**
 - **Depression ($\beta = .108, p = .059$)**
 - **Hopelessness ($\beta = 1.406, p = .055$)**



Results: Step 2

- **Added perceived burdensomeness to model**
 - **Significantly improved classification of SI**
 - $(\chi^2 (7) = 38.744, p = .000, \text{Nagelkerke } R^2 = .733)$
 - **Incrementally improved model fit compared to first model**
 - $(\chi^2 (1) = 12.504, p = .000)$



- **Perceived burdensomeness was sole predictor of SI ($\beta = 2.558, p = .014$)**
 - **Even while controlling for depression & hopelessness**
- **Resulting model accurately classified 95.4% of patients**
 - **Better ability to correctly classify patients without SI (99/101; 98.0%) than patients with SI (5/8; 62.5%)**



- Study adds to understanding of relationship between chronic pain and SI
- Perceived burdensomeness as a risk factor may help explain high rates of SI beyond:
 - Age
 - Gender
 - Race
 - Marital status
 - Depression
 - Hopelessness



- **Preliminary findings consistent with Interpersonal-Psychological Theory of Suicidal Behavior** (Joiner et al., 2002)
 - **Involves perceived burdensomeness, increased capacity for self-harm and thwarted belongingness**



- **Clinical treatment may reduce risk**
- **Targeted cognitive interventions to:**
 - **Change meaning of cognitions**
 - **Acceptance-based** (Hayes et al.,1999)
 - **Change cognitions**
 - **Traditional CT** (Beck, 1995)



Discussion: Limitations

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- **Findings considered preliminary**
 - **Chronic pain patients seeking care**
 - **Unique nature of sample**
 - **All retired, active duty (AD) or dependents/family members of retired or AD military members**
- **Single item measurement of constructs (although previously validated)**
- **Restricted range of SI reported**



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Discussion: Future Research

- **Different populations**
- **Additional risk factors** (i.e. pain intensity, avoidance; see Tang & Crane, 2006)
- **Joiner's complete model fit**
 - ***Do patients with chronic pain experience thwarted belongingness or increased capacity for self-harm?***



Conclusion

- Routinely assess/recognize perceived burdensomeness as important construct
- Are we doing this already?
- Feasibility of just one question

- *Goal: Increased quality of assessment & care of patients with chronic pain*



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WRAP-UP

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References

- **Available upon Request....**



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Questions & Discussion

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