

Review

# Psychological pain: A review of evidence

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Received 2 August 2005; received in revised form 20 December 2005; accepted 8 March 2006

## Abstract

This paper defines a symptom construct termed psychological pain and reviews clinical and neuroimaging evidence relevant to it. The psychological pain associated with severe depression is often perceived as worse than any physical pain that the individual has experienced and could be a critical component of suicidality that could be systematically assessed in potentially suicidal patients. Converging evidence from brain imaging studies suggests overlapping patterns of brain activation induced by both psychological pain and by physical pain. Future research on the role of psychological pain and its interaction with nociceptive pathways may provide novel clues to the understanding and treatment of depression and other psychiatric illnesses.

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**Keywords:** Psychological pain; Physical pain; Brain imaging; Suicidality

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“The gray drizzle of horrors induced by depression takes on the quality of physical pain” (William Styron in *Darkness Visible: A Memoir of Madness* (Solomon, 1992))

## 1. Introduction

“I can’t stand the pain any longer” is one of the most common phrases found in suicide notes (Institute of Medicine, 2002) and usually refers to psychological pain rather than physical pain. The torment of psychological ‘pain’ can be so intense, that suicide seems to be the only means of escape (Kovacs et al., 1975b; Osmond et al., 1984; Shneidman, 1979). It is probable that patients have differing thresholds for psychological pain as individuals do for physical pain, so what is felt as intolerable by one patient could differ in another. Individuals with an increased propensity for psychological pain may be at a greater risk for suicidality, particularly if they are suffering from major depressive disorders, physical disease or severe social stressors (e.g., loss of child). Physical pain, psychological pain and major depression are complex multidimensional syndromes with the capacity to influence one another. Thus, chronic physical pain and psychological pain can lead to depression while conversely, depression may intensify chronic physical pain (Bair et al., 2003; Fishbain, 1999, 2002; Fishbain et al., 1997, 1991). However, few studies have systematically characterized psychological pain. The purpose of this review is to survey reports that focus on psychological pain using sources such as suicide notes, physician’s observations, and scientific papers including brain imaging studies. It is suggested that psychological pain, analogous to hopelessness (Joiner et al., 2001; Kovacs et al., 1975a) be recognized as a distinct symptom construct, separate from mood disorders, which can occur across psychiatric diagnoses. Data from positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) studies provide evidence that psychological pain activates many of the same brain nociceptive brain structures as physical pain.

## 2. Defining psychological pain

In this review, psychological pain is defined as a diffuse subjective experience and is differentiated from physical pain which is often localized and associated with noxious physical stimuli. Two categories of psychological pain are

considered in this paper: (1) psychological pain associated with major psychiatric disorders as exemplified by severe depression; and (2) psychological pain as an internal response to noxious psychological stimuli. Psychological pain can be considered a response to noxious psychological stimuli analogous to physical pain as a response to noxious physical stimuli. It is proposed that psychological pain may operate on a continuum of intensity from mild to severe or may have distinct subtypes which are qualitatively different (e.g., the “unbearable” psychological pain in a subgroup of mood disorder patients versus pain associated with a noxious psychological stimulus, such as the death of a child).

## 3. Hypotheses

Two hypotheses are explored in this review. The first hypothesis postulates that psychological pain could be an important symptom construct of depression and might be an important predictor of suicidal behavior. The second hypothesis proposes that physical and psychological pain share common features in both subjective experiences and in brain pathophysiology as reflected in brain imaging studies. Conversely, they have dissimilar subjective components and activate different brain structures.

### 3.1. Examples of clinical descriptions of psychological pain

Table 1 lists quotes from depressed subjects describing the intensity and suffering associated with psychological pain. These quotes are only examples of the level of intensity and suffering experienced by some individuals. Sources for these descriptions include suicide notes, clinical anecdotes and published papers. The first five quotes in Table 1 come from suicide notes collected from the Los Angeles County Coroner’s Office, 1983–1984 (Leenaars, 1988). For purposes of this review, the selection of descriptions were limited to those containing the word ‘pain’. Quotes using synonyms for pain (e.g., physical torment, body hurts, horrible suffering, constant agony, and unbearable misery) were eliminated in order to draw a more direct analogy to physical pain. However, it is important to note that these quotes were not systematically obtained since there was no prospective methodology, randomization, blinding or controls. Until a systematic evaluation is undertaken to determine the incidence of psychological pain in psychiatric ill-

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