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TOPICAL REVIEW

Compassion and Chronic Pain

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Compassion, particularly towards the self, is becoming established as an area of interest and target for intervention in the psychological literature [12; 21]. Compassion has been defined as “a sensitivity to the suffering of self and others, with a deep commitment to alleviate it” and has its roots in an assimilation of evidence from evolutionary, social and neurobiological theory [14]. Gilbert suggests that compassion originates from evolved abilities related to mammalian bonding, attachment, affiliation and prosocial behaviour [14]. Compassion harnesses a specific affiliation based affect regulation system which facilitates the release of oxytocin and opioids in response to experiences of caring and connection [10]. It is posited that the activation of this soothing system can offset or down regulate other emotions associated with threat. Early experiences of care influence the development of this system. When the caregiver responds to a child’s distress, such as when faced with a social or physical threat, with close contact, touch, and care this facilitates the alleviation of distress through an associated release of oxytocin in the child. Over time, these experiences are internalised, and repeated experiences of care foster neuronal connections within the soothing system. This forms the basis of an individual’s capacity for compassion towards the self and others [3] such that when the individual responds with care and concern toward their own difficult experiences (self-compassion) the associated release of oxytocin facilitates a corresponding reduction in negative, threat based emotions (fear, anger and disgust) as well as more complex negative social emotions (guilt and shame) [12].

Self-compassion is associated with significant benefits for emotional wellbeing, positive psychological functioning and lower levels of psychological distress, depression and anxiety in both general and clinical populations [19], including in people with physical health problems [29]. Self-compassion buffers individuals against difficult life events in populations with enduring mental [15; 27] and physical health difficulties [29], it is associated with lower negative affect and higher motivation to change following failure

[4; 23] and rejection [16] and more adaptive responses and coping strategies in the face of such difficulties [1]. This more adaptive coping is hypothesized to result in motivation aimed at promoting wellbeing rather than mitigating potential threat e.g. fear-avoidance in pain [1].

1. The relevance of self-compassion in relation to chronic pain

Evidence from a range of fields indicates that compassion, and particularly self-compassion has relevance to persistent pain. With regards to social context, frequent setbacks and difficulties are encountered as a result of the physical restrictions of pain and their impact on social role performance [7; 28; 31]. People with chronic pain are frequently hypervigilant to the threat of rejection due to fears of being disbelieved, unproductive and a burden [28]. They may experience being ignored, embarrassed, humiliated or devalued by others [2]. These discrediting encounters together with the physical and psychological consequences of pain can lead to a reappraisal of the self. Smith and Osborne describe this as the 'self with pain', a self which is "*socially undesirable, shameful and intruded into the participant's consciousness most acutely when they were in a social or relational context*" [28, p. 527]. This is consistent with the notion that self-criticism and shame originate from the evolutionary importance of social status and rank. Negative social evaluation precipitates not only self-criticism but the activation of threat based emotions such as anxiety and complex social emotions such as shame [14].

Unlike self-esteem, self-compassion does not rely on performance-based evaluations of the self, or comparison to social standards, but it circumvents the evaluation process [21]. For example, a self-esteem based response to a difficulty would be '*Ok it's bad that I couldn't help my wife with the jobs round the house before our friends came round, but at least I was still cracking the jokes at dinner. When I next get a good pain day I'll get all*

those jobs done'. This approach gives rise to ongoing attempts to achieve positive social status, and emphasizes a need for positively judged attributes in order to buffer difficult experiences and emotions. This achievement/excitement based approach to reducing interpersonal threat, utilizes a 'drive' based affect regulation system [10; 12] and often creates difficulties with acceptance, adjustment and pacing. A self-compassionate response to the same difficulty would be: *'It is understandable that I feel guilty and embarrassed that I couldn't help my wife in the way I used to. Most people would find that upsetting. I know I'm not perfect, nobody is, and all I can do is continue to try to do my best to do what I can'*. This approach includes attending to the difficult experience without becoming overinvolved, through reappraising the event using a comforting/soothing internal dialogue, in which the difficulty is viewed in the context of the wider human experience. The cultivation of a quality not moderated by evaluation and not requiring achievement, holds particular relevance considering the ongoing challenge chronic pain poses to maintaining a valued social identity, and how this contributes to negative self-evaluation, shame and self-criticism [28].

Connections between pain and emotion have been established at a neurobiological, psychological and social level [17; 18; 20]. Lumley and colleagues reported that pain anxiety, pain-related fear, and high arousal of negative emotions are associated with higher pain and poorer adjustment, and that the research suggests a bidirectional relationship in which these emotional factors occur "not only in response to pain but also trigger, maintain, or exacerbate pain" [18, p.961]. Thus the capacity to regulate the difficult emotions triggered by pain related difficulties more effectively through an alternate way of relating to those difficulties (self-compassion) appears valuable.

Affect regulation stemming from affiliation is also significant to the experience of

pain. Experimental evidence has shown that being in contact with or primed with images of an attachment figure leads to reductions in pain and pain related distress [11]. Moreover μ -opioids, which ameliorate pain responses [25] are released in response to positive, close social contact [24]. The capacity to replicate affiliative responses internally through a self-compassionate response may bring similar benefits and more research is indicated.

2. The evidence for the benefits of self-compassion in a chronic pain population

Whilst there is a breadth of wider literature indicative of the relevance of this concept to persistent pain, there is as yet limited evidence drawn from persistent pain samples.

However the available evidence is encouraging. Self-compassion has been found to be associated with greater pain acceptance and lower levels of depression, anxiety and stress [8]. Wren and colleagues [32] found that self-compassion did not influence participants' perception of pain (unpleasantness or intensity) but was associated with lower levels of negative affect, higher levels of positive affect, lower levels of pain catastrophizing and lower reported levels of pain disability. [32, p.767]. These two studies provide some indication that self-compassion could play a role in pain-related adjustment. However, since both studies rely on self-report questionnaires alone, the way in which the individuals may respond to pain specific events or across contexts have been not demonstrated.

A recent experimental vignette study found that a greater ability to show self-compassion was associated with significantly lower negative affect and lower reported likelihood of avoidance, catastrophizing and rumination in response to unpleasant self-relevant events (both pain and non-pain-related). Higher self-compassion was also associated with greater satisfaction with social participation [26]. These results provide more detailed findings regarding the way in which self-compassion may influence affect,

cognitive and behavioral responses to pain-related events. However, replication of these results using observational methods to confirm the findings would be beneficial, since vignettes also rely on self-report and therefore may potentially be affected by social desirability bias in the same way as questionnaire based studies.

In many studies, self-compassion has been measured as a trait-like or dispositional quality. However, the cultivation of compassion is now the focus of therapeutic approaches [12] [22] and the evidence suggests that compassion can be enhanced through therapeutic intervention. In a chronic pain population, preliminary evidence indicates the use of loving kindness and compassion based meditation can both reduce pain severity, and moderate the impact of pain, reducing psychological distress and increasing pain acceptance [5; 6]. In a sample of patients experiencing chronic migraine a single 20 minute loving kindness meditation significantly reduced pain and tension immediately post-meditation [30]. Whilst the results are encouraging, the studies had a small sample sizes which limits generalizability and power. The lack of control group in studies also precludes the ability to distinguish the effects of the intervention from other variables such as social support or normalization within a group setting which may also have predicted positive change.

As yet there are no studies which have focused on other therapeutic models to enhance self-compassion such as Compassion Focused Therapy [12]. This approach focuses on helping people to better able to regulate affect and find a more compassionate inner dialogue when experiencing difficulties. This is achieved through psychoeducation aimed at normalizing and de-shaming difficult emotions. Gilbert [12] describes that “central to compassion-focused therapy is compassionate mind training: by demonstrating the skills and attributes of compassion, the therapist instils them in the client. Thus, the

client is helped to develop an internal compassionate relationship with themselves to replace the blaming, condemning and self-critical one” (p.202). Techniques include relaxation, mindfulness, guided imagery, therapeutic chair work, and compassionate reappraisal [12; 13].

Interestingly, there is a higher incidence of attachment difficulties in the persistent pain population. The rate of disorganized attachment in chronic pain patients (indicative of significant early adverse experiences with a parent) was reported as almost double (28.5%) the rates in the general population (10-15%) [9]. As noted earlier in this review, there is also a high prevalence of self-critical thinking and shame often associated with the impact of pain on maintaining valued social identities and roles. Thus, a therapeutic approach which helps individuals to develop their capacity to respond with compassion to their pain and associated difficulties, and learn to self-soothe appears particularly valuable. This approach could complement existing evidence based approaches to pain through offering an enhanced capacity to focus on and address the factors that underpin an inability or reluctance to engage with pain self-management strategies as well as supporting improved affect regulation. For example, addressing the role of shame and self-criticism in the neglect of personal needs in favour of others’ needs, or in feeling undeserving or incapable of self-care, and how this inhibits effective self-management of pain creating significant problems with pacing and rehabilitation.

3. Avenues for future research

There are several promising potential avenues for research into self-compassion and chronic pain. First, studies which expand on the existing findings and replicate these using experimental and observational methods in order to develop a more refined understanding of the mechanisms by which compassion improves wellbeing in chronic

pain patients. Second, studies which can provide insight into the ways in which compassion can be enhanced in a chronic pain population. Ideally this would include both replicated experimental single case studies to understand the active components in compassion focused interventions with chronic pain populations, and intervention trials which are sufficiently powered and incorporate a control group. Third, studies which establish whether the development of self-compassion, is causally related to a reduction in pain and a reduction in the impact of pain.

4. Conclusions

The available evidence indicates that the development of a style of responding to one's pain, difficulty and failures, **which is kind, emphasizes common humanity and is independent of the need for value based attribution of worth, would be of benefit in working with chronic pain. Developing compassion is associated with improvements in affect regulation, self-management and the development of more adaptive coping strategies and responses to pain related difficulties.** In some studies it has also been indicated that compassion can reduce pain severity though evidence for this is mixed. Further research is indicated to establish whether the development of self-compassion can consistently and durably reduce pain severity and assuage the emotional impact of pain. Moreover evidence is needed to ascertain whether and how this ability can be enhanced in a chronic pain population.

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