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Forgiveness and Chronic Pain: A Cohort Study

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Abstract

Background: Chronic pain is a major public health issue. It is a complex condition comprising biological, social and psychological elements, which can be challenging to manage. Forgiveness is a recognised effective intervention in various health conditions. Research has shown promising results using forgiveness as an intervention in the management of pain. This study aims to examine the relationship between forgiveness and other variables in patients suffering from chronic pain in the setting of a chronic pain clinic. **Methods:** Institutional ethical approval was granted for this study. Patients attending a chronic pain clinic for the first time were invited to complete a questionnaire comprising a brief socio-demographic survey and questionnaires including the Heartland Forgiveness Scale, Hospital Anxiety and Depression Scale, Pain and Anxiety Symptoms Scale and Perceived Injustice. **Results:** 104 adult patients were included. The mean age was 59 years. Back pain was the most common chronic pain presentation. The Heartland Forgiveness Scale (HFS) was found to have a good internal consistency among the Irish population. This study found that 55% of patients attending the pain clinic were not forgiving. Negative correlations were identified between forgiveness and pain, and forgiveness and injustice. **Conclusion:** The majority of patients attending a chronic pain clinic were not forgiving as measured on the HFS. There was a negative correlation between forgiveness and pain. The results have shown that forgiveness could be beneficial as a therapeutic intervention among patients attending a chronic pain clinic.

Keywords

Forgiveness, Chronic Pain, Associations

1. Introduction

Chronic pain is a common disorder which affects up to 35% of adults [1]. It is a condition which represents a significant burden to the sufferer, resulting in

anxiety, depression, sleep disturbance and disability [2]. It also represents a significant burden to the economy, with an estimated cost of 5.34 billion per year in Ireland [3]. Given the prevalence and the effect of chronic pain on individuals and society, it is imperative that cost effective treatments are explored [3].

There is an association between the capacity to forgive and the experience of pain [4]. Carson *et al.* [5] describe forgiveness as a mechanism through which negative emotions such as anger and resentment are released and replaced with positive emotions, such as love and compassion. A study by Offenbacher *et al.* [6] looking at a cohort of fibromyalgia sufferers found that forgiveness of self and others was beneficially associated with pain, health, quality of life and anger. They also found that fibromyalgia patients manifested lower levels of forgiveness than their control counterparts. They hypothesize that the promotion of forgiveness as a therapeutic intervention may help fibromyalgia sufferers cope better with their psychological and physical symptoms [6].

This study aims to examine the relationship between forgiveness and other variables in patients suffering from chronic pain in the setting of a chronic pain clinic.

2. Methods

This was a prospective cohort study, which was given ethical approval by the local institutional research committee (University Hospital Limerick, Ireland). The study population included all adult patients attending a chronic pain clinic over a period of six months. We surveyed 130 adults in total. One was excluded from the study as they did not complete the Heartland Forgiveness Scale. All patients received information regarding the study and signed a written consent. We used a number of self-report measurement tools such as the Heartland Forgiveness Scale, Hospital Anxiety and Depression Scale, Injustice Experience Questionnaire, as well as Pain and Anxiety Scale (PASS). We looked at the association between the severity of pain and the relevant psychological factors. The various psychological measurement tools are given in Table 1.

Table 1. Measurement tools.

Tool	Method
Hospital Anxiety and Depression Scale	Self Report
Uncertainty Scale	Self Report
PASS (Pain and Anxiety)	Self Report
Self Efficacy	Self Report
PTSD	Self Report
Heartland Forgiveness Scale	Self Report
Quality of Life	Self Report
Injustice (IEQ)	Self Report

Statistical Analysis

Categorical data were summarised using counts and percentages. Numerical data were tested for normality and summarised using the mean and standard deviation if normally distributed and using the median, first quartile (Q1) and third quartile (Q3) otherwise. Cronbach's alpha with 95% confidence interval was used to measure the internal consistency of the Heartland Forgiveness Scale (HFS). Pearson's correlation coefficient (r) was used to measure the strength of the relationship between forgiveness and other numeric variables, with a significance level of 0.05. All analysis was done using R (version 3.6.1).

3. Results

The demographics and pain characteristics of patients are given in Table 2. Over half of the patients were aged between 50 - 70 years (52%) and were female (63%). The majority of patients had been experiencing pain for 1 - 5 years (61%), with the most common diagnosis being back pain (46%), followed by limb pain (18%) and neck pain (16%). Almost a quarter of patients' pain was caused by a road traffic accident, work injury or post-surgery (24%). The median pain score for the patients attending the clinic was 6 [5] on a scale of 0 to 10.

3.1. Forgiveness

The internal consistency of the HFS was measured using Cronbach's alpha on the overall eighteen-item questionnaire (HFS total) and the three six-item subscales (forgiveness of self, forgiveness of others and forgiveness of situations). Cronbach's alpha for HFS total was 0.81 (95% confidence interval from 0.76 to 0.86) which shows good internal consistency. The internal consistency for the subscales was lower which may reflect the small number of items on these subscales. For forgiveness of self, Cronbach's alpha was 0.66 (95% confidence interval 0.57 to 0.76), with a value of 0.60 (95% confidence interval 0.48 to 0.71) for forgiveness of others and 0.64 (95% confidence interval 0.53 to 0.74) for forgiveness of situations.

The median score for total forgiveness reported by patients was 85 (74, 103), where a score below 90 indicates that one is not usually forgiving of oneself, others and uncontrollable situations. Seventy-one patients (55%) had a score below 90. The median score for forgiveness of self was 29 (24, 35), for forgiveness of others was 30 (24, 36) and for forgiveness of situations was 29 (24, 35), where a score below 30 indicates one is not forgiving in each of the subscales. Seventy-two patients (56%) had a score below 30 for forgiveness of self, 64 (50%) had a score below 30 for forgiveness of others and 67 (52%) had a score below 30 for forgiveness of situations.

3.2. Correlations

The correlations between HFS total and subscales, injustice and pain score are given in Table 3. There is a weak negative correlation between HFS self and Pain

score (r = −0.31, P < 0.001) (Table 2). Injustice has a weak negative correlation with HFS total (r = −0.22, P = 0.02), HFS self (r = −0.23, P = 0.01) and HFS situations (r = −0.27, P = 0.003).

The correlations between HFS total and subscales with all scales are given in Table 4. The strongest correlations are for HFS situations with a moderate negative correlation with Depression (r = −0.43, P < 0.001) and total HAD (r = −0.43, P < 0.001).

Table 2. Patient characteristics.

Characteristic	Category	Result
Age Group	<30	5 (4%)
	30 - 50	48 (37%)
	50 - 70	67 (52%)
	>70	9 (7%)
Gender	Female	81 (63%)
	Male	48 (37%)
Marital Status	Married	79 (61%)
	Single	34 (26%)
	Separated	11 (9%)
	Widowed	5 (4%)
Employment Status	Employed	58 (45%)
	Retired	34 (26%)
	Unemployed	23 (18%)
	Other	14 (11%)
Duration	<1 Year	43 (33%)
	1 - 5 Years	79 (61%)
	>5 Years	3 (2%)
	Missing	4 (3%)
Diagnosis	Back pain	59 (46%)
	Limb pain	23 (18%)
	Neck pain	20 (16%)
	Pain more than one area	10 (8%)
	Joint pain	7 (5%)
	Other	9 (7%)
	Missing	1 (1%)
RTA/Work Injury/Post Surgery	Yes	31 (24%)
	No	98 (76%)
Stage of Change	Contemplation	29 (22%)
	Precontemplation	99 (77%)
	Missing	1 (1%)
Median Pain Score (Q1, Q3)		6 (5, 8)

Table 3. Pearson's correlation coefficient (*P*-value) for HFS total and subscales with, injustice and pain (n = 129).

	HFS Self	HFS Others	HFS Situations	HFS Total
Pain Score	−0.31 (<0.001)	−0.01 (0.93)	−0.10 (0.25)	−0.18 (0.05)
Injustice	−0.23 (0.01)	−0.03 (0.71)	−0.27 (0.003)	−0.22 (0.02)

Table 4. Pearson's correlation coefficients (*P*-values) for HFS total and subscales with all scales (n = 129).

	HFS Self	HFS Others	HFS Situations	HFS Total
Pain Score	−0.31 (<0.001)	−0.01 (0.93)	−0.10 (0.25)	−0.18 (0.05)
Depression	−0.34 (<0.001)	−0.12 (0.18)	−0.43 (<0.001)	−0.36 (<0.001)
Anxiety	−0.32 (<0.001)	−0.10 (0.25)	−0.38 (<0.001)	−0.33 (<0.001)
Total HAD	−0.36 (<0.001)	−0.12 (0.18)	−0.43 (<0.001)	−0.37 (<0.001)
Uncertainty	−0.34 (<0.001)	−0.32 (<0.001)	−0.31 (<0.001)	−0.39 (<0.001)
PASS	−0.15 (0.09)	0 (0.99)	−0.17 (0.06)	−0.13 (0.14)
Self-Efficacy	0.23 (0.01)	0.17 (0.06)	0.31 (<0.001)	0.29 (<0.001)
PTSD	−0.30 (<0.001)	−0.12 (0.16)	−0.36 (<0.001)	−0.32 (<0.001)
QOL	0.24 (0.01)	0.04 (0.67)	0 (0.98)	0.11 (0.21)
Injustice	−0.23 (0.01)	−0.03 (0.71)	−0.27 (0.003)	−0.22 (0.02)

4. Discussion

In this study, we explored the association between forgiveness and other psychological variables in patients attending a chronic pain clinic. Our systematic review published in November 2020 [4] had identified studies examining forgiveness therapy in various illnesses and in chronic low back pain, but to our knowledge there has been no study specifically looking at forgiveness in patients attending a pain clinic. We discovered in this study that more than half of the patients attending the pain clinic during this period scored less than 90 in the Heartland Forgiveness Scale. This score indicates that the patient attending a chronic pain clinic is usually not forgiving of themselves, others or situations. We also identified a negative correlation between forgiveness levels and reported pain levels.

We found the Heartland Forgiveness Scale to have a good internal consistency of 0.81 (95% confidence interval of 0.76 - 0.84). This is similar to the internal consistency previously reported by Thompson *et al.*, who found the Heartland Forgiveness Scale to have an internal consistency of 0.86 as measured using Cronbach's alpha [7].

A study by Carson *et al.* published in 2005 examined 61 patients with chronic low back pain. This study found that forgiveness variables related meaningfully to measures of important indices of adjustment to persistent pain, including anger, pain and psychological distress [5]. Our study has also identified correlations between psychological variables that may be important in coping with chronic pain, such as pain and injustice. Similarly, a meta analysis by Lee and Enright in 2019 reviewed one hundred and twenty eight studies, and found that there was a significant positive relationship between forgiveness of others and physical health [8].

4.1. Pain

Chronic pain is defined as pain which persists beyond the expected tissue healing time, or pain which occurs in the absence of tissue damage [9]. It is a com-

plex biopsychosocial condition which requires a carefully targeted treatment plan which acknowledges and addresses the various contributing factors, often requiring multidisciplinary input. Sixty-one percent of patients involved in this study had been experiencing pain for 1 - 5 years. This demonstrates the need for new and innovative treatment options among this cohort of patients.

4.2. Forgiveness

The median score for total forgiveness among this cohort was 85, where a score of below 90 indicates that the patient is not usually forgiving of oneself, others, or uncontrollable situations. Our statistical analysis has also identified a negative correlation between total forgiveness and injustice scores, meaning those with experiencing less injustice are likely to be more forgiving. It is also relevant to note that 25% of this cohort were experiencing pain due to an event such as a road traffic accident, work related, or post operatively. It could be inferred that those patients whose pain is a resultant consequence of an incident are more likely to experience feelings of injustice, and are likely to benefit from forgiveness interventions.

Our statistical analysis also identified a negative correlation between forgiveness and depression, as measured by the Hospital Anxiety and Depression scale. This scale assesses for mood disorders, in order to help clinicians understand the patient's suffering in a clinical situation [10]. It has already been identified that chronic pain has significant psychological components [2]. This correlation demonstrates that those who are more forgiving, are less likely to experience depression as measured on the HADS scale. Therefore, forgiveness therapy could alleviate some of the psychological symptoms associated with chronic pain.

4.3. Behaviour Change

The transtheoretical model for health behaviour change identifies six stages in the process of behaviour change [11]. In this cohort study, 77% of patients were identified as being in the "pre contemplation" stage of behaviour change. Patients in this stage are usually unaware or under-aware of the association between their behaviours and the resultant effect on health [11]. The primary intervention for patients in this stage is to help them to identify and acknowledge behaviour changes that could improve health outcomes. By assessing the contributing psycho-social components of chronic pain amongst patients, clinicians can then educate patients and advocate for therapies such as forgiveness therapy.

Some limitations should be acknowledged when interpreting this study. All patients included in this study were attending one pain clinic. Confirming the findings in other pain clinics would reinforce the evidence that forgiveness is an important psychological variable to be considered in patients suffering from chronic pain. The sample size was also relatively small which could give rise to bias. Further studies should be carried out in multiple clinics to provide further evidence for the associations identified in this study. Future research, exploring specific aspects of forgiveness and its differential effects on chronic pain, would

be beneficial.

The study does not address potential confounding variables like medication use, lifestyle, or previous therapy that might influence patients' perceptions of pain and forgiveness.

This study has demonstrated the good internal consistency of the Heartland Forgiveness Scale in measuring forgiveness levels in the Irish population. It has also identified correlations between forgiveness and other psychological variables such as anxiety, depression and injustice amongst a cohort of patients attending a chronic pain clinic. A majority of patients attending a chronic pain clinic were not forgiving as measured on the HFS. There was a negative correlation between forgiveness and pain. The results have shown that forgiveness could be beneficial as a therapeutic intervention among patients attending a chronic pain clinic.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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