Original Article

Association between the Fear of Pain, the Response Strategies and the Sense of Coherence in Workers in Primary Health Care

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Abstract

Introduction: Pain is one of the greatest human fears. People with strong Sense of Coherence (SOC) manage to deal effectively with stressful situations, such as pain and maintain good physical and mental health.
Purpose: The assessment of the fear of pain in primary health care workers and the detection of possible correlations between the fear of pain, the coping strategies and the Sense of Coherence.
Material and Method: The sample consisted of 94 employees in Primary Health Care. For data collection were used: the FPQ-III, the BRIEF-COPE and the Sense of Coherence scale (SOC).
Results: The analysis of FPQ-III showed the highest mean score in the subscale FPQ-III major (34.29 ± 6.78). Analyzing the BRIEF-COPE inventory, the highest score was found in Planning (3.37 ± 0.61), Positive Reframing (3.20 ± 0.71), Acceptance and Active Coping (3.10 ± 0.66 and 3.04 ± 0.69 respectively). Examining the possible existence of correlations between dimensions of the FPQ-III and the BRIEF-COPE, a positive correlation was observed between the subscale FPQ-III minor and Self-distraction ($p < 0.05$), as well as a positive correlation between the subscale FPQ-III major with Self-distraction ($p < 0.01$), Religion ($p < 0.01$), Emotional support ($p < 0.05$), Denial ($p < 0.05$) and Self-blame ($p < 0.05$). In FPQ-III medical, a positive correlation was found between Self-distraction ($p < 0.05$) and Denial ($p < 0.05$), while there was a positive correlation between the FPQ-III total and the dimensions: Self-distraction ($p < 0.01$), Denial ($p < 0.01$), Religion ($p < 0.05$), Venting ($p < 0.05$) and Emotional support ($p < 0.05$). In Sense of Coherence scale (SOC) a fairly high mean score (138.79 ± 21.41) was observed. Regarding the correlations between the BRIEF-COPE with the SOC, a positive correlation was found with the so-called "adaptive" mechanisms and negative correlations with the "maladaptive" mechanisms.
Conclusions: The participants seemed to have a high Sense of Coherence, which positively influences the adoption of adaptive coping strategies. However, when tested for possible correlations between the FPQ-III and the BRIEF-COPE, it was found that the scores of FPQ-III are positively correlated with 'maladaptive' mechanisms such as the Self-distraction and Denial, which probably means that the fear of pain motivates different coping strategies.

Keywords: Fear of pain, coping strategies, sense of coherence, Primary Health Care.

Introduction

Man has always tried to understand the nature of his harmful benefactor, pain. On the IASP, pain is defined as "an unpleasant sensory and emotional experience associated with established or impending tissue damage» (IASP, 1986). It is a subjective feeling that one experiences early in life, based on their personal experiences. Fear is an emotional response to a specific and hazardous event. Moreover, the fear on pain develops as a result of destructive beliefs and negative interpretations that consider pain as equivalent to something necessarily bad. People tend to avoid pain, as a source of stress, with common manifestations of anxiety, fear and agony. On the other hand, stress makes more intense the experience of pain, increases the fear of pain and the chance of the individual to try to avoid it (Asmundson & Taylor, 1996, Asmundson et al., 1997).

Coping with stress and stressful situations in general is considered an inherently dynamic and multidimensional process, which starts from the perception of the situation that causes stress, to the use of the available resources to deal with it (Folkman, 1984). The coping strategies of stressful situations are divided into those that focus on solving the problem and those that focus on the emotion caused (Lazarus and Folkman, 1984). Factors associated with coping strategies are personality traits, such as resistance (Kobasa, 1982), the sense of control (Rotter, 1966, Folkman, 1984) and self-efficacy expectations (Bandura, 1986). Also, an important role is played by other individual characteristics such as age (Gardner et al., 1961, Werner et al., 1992, Kaličanin, 1994, Zanarini et al., 2000), gender (Lečić-Toševski et al., 2001), mental capacity (Kaličanin, 1994) and optimism (Kamen-Siegel et al., 1991, Nelson et al., 1995). A special role is held by the Sense of Coherence (SOC), which is a stable personality dimension and establishes a specific attitude towards the environment while it serves as a defense mechanism for maintaining physical and mental health (Karalis et al., 2004). A strong SOC helps a person perceive the world as structured and predictable (comprehensible), problems as manageable and the demands of life as interesting challenges (meaningful). Studies suggest that individuals with strong SOC manage to cope with stress and stressors and maintain good physical and mental health (Tuomi et al., 1999, Agardh et al., 2003, Jonsson A. et al., 2003, Urakawa et al., 2009, Takeuchi et al., 2010, Malinauskiene et al., 2011).

The extremely limited and fragmentary literature on the study of the fear of pain and the potentially correlated variables with professionals who come into frequent and close contact with patients reporting pain triggered the planning of the present study. More specifically, it was interesting to study the personal fear of pain in people who, because of their profession, have been trained to manage the pain of others in non-emergency situations.

The objective of this study was to estimate the fear of pain in workers of Primary Care, the coping strategies used in stressful situations and to explore possible correlations between the fear of pain, the coping strategies and the Sense of Coherence.

Methodology

The study sample consisted of 94 employees in the Primary Health Care in the Region of Western Macedonia Primary Health Care. After appropriate approval, questionnaires were distributed to all workers (N = 126) which were accompanied by a brochure explaining the objective of the study and assuring them of the confidentiality of personal data, while stressing voluntary participation. Ninety-four completed questionnaires were returned (N = 94) (responsiveness 75%).

As instruments for data collection were used:

• The Fear of Pain Questionnaire (FPQ-III) was developed by McNeil, D.W., and Rainwater, A.J. III (1998). It consists of 30 questions-painful stimulus situations for which the person is required to answer whether the fear of pain is associated with them, in a five-point scale: not at all, a little, a fair amount, very much, extreme. It includes three subscales: Minor (FPQ-III minor), Severe (FPQ-III major) and Medical pain (FPQ-III medical). The total score ranges from 30 to 150 (Daniel & McNeil, 2003).

• The Brief Scale of Coping Orientation with Problems Experienced (BRIEF-COPE) to evaluate various strategies with which people react to stress (Carver, 1997). The answers are given on a four-point scale: «I haven't been doing

this at all», «I've been doing this a little bit», «I've been doing this a medium amount», «I've been doing this a lot». It contains 28 recommendations, divided into 14 subscales and reporting on the following coping strategies: Self-distraction, Active coping, Denial, Substance use, Use of emotional support, Use of instrumental support, Behavioral disengagement, Venting, Positive reframing, Planning, Humor, Acceptance, Religion and Self-blame. The score for each strategy varies from 2 to 8. The questionnaire has been adapted to the Greek population (Kapsou et al., 2010).

• The Sense of Coherence scale (SOC), which was constructed by Antonovsky (Antonovsky, 1993), in order to test the hypothesis that high internal coherence is linked to the state of physical health. It consists of 29 items to be answered on a seven-point scale. The questions cover the three dimensions of internal coherence: a) the ability to understand the environmental stimuli (comprehensibility), b) the conviction of the person that they respond successfully to the demands (manageability) and c) the feeling that the effort is worthwhile (meaningfulness). The total score ranges from 29 to 203. The scale has been standardized in Greek (Karalis et al, 2004).

Statistical analysis

The collected data were described using frequency and rate tables for the case of categorical variables, while for the case of the constants the mean value and standard deviation were used. For the correlations between the scores of the questionnaires FPQ-III, Brief Cope and SOC the Pearson linear correlation coefficient was used, after Shapiro Wilk control for the symmetry of the values of the associated dimensions. The significance level in all cases was set at 0.05 and the analysis was performed with SPSS software v 21.0.

Results

The average age of the sample was 42.99 ± 9.5 years (range 24-65). Regarding gender, the largest percentage of the sample were women (85.10%), while with respect to marital status, 81.9% were married, 13.8% single and 4.3% divorced. On the educational level, the majority of the sample (72.5%) were graduates of higher education. Fourteen of the participants (14.9%) reported a history of a diagnosed disease, of which 8 participants reported pain (Table 1).

The analysis of the Fear of Pain Questionnaire (FPQ-III) showed a higher mean score on the FPQ-III major subscale (34.29 ± 6.78) with respect to the FPQ-III minor subscale and the FPQ-III medical, where the mean scores were quite lower (17.50 ± 5.59 and 21.98 ± 15.93 respectively). The average score in FPQ-III total was 73.77 ±15.93. Through analyzing the BRIEF-COPE inventory, higher scores were revealed in Planning (3.37 ± 0.61), Positive Reframing (3.20 ± 0.71), Acceptance and Active Coping (3.10 ± 0.66 and 3.04 ± 0.69 respectively), while the lowest scores were observed in the Substance use (1.14 ± 0.37) and Behavioral disengagement (1.49 ± 0.59). The coping strategies adopted by the sample focused on solving the problem, predominantly on Planning and Active Coping, as well as on the emotions like Positive Reframing (Table 2).

Regarding the Sense of Coherence (SOC) a fairly high mean score (138,79 ± 21,41) was observed. During the control of the existence of correlations between FPQ-III subscales and BRIEF-COPE, a positive correlation between the subscale FPQ-III minor and Self-distraction ($p < 0.05$) was observed, as well as a positive correlation between the subscale FPQ-III major and the following dimensions of BRIEF-COPE: Self-distraction ($p < 0.01$), Religion ($p < 0.01$), Emotional Support ($p < 0.05$) and Self-blame ($p < 0.05$). In FPQ-III medical a positive correlation between Self-distraction ($p < 0.05$) and Denial ($p < 0.05$) was found, while a positive correlation between the FPQ-III total and Self-distraction ($p < 0.01$), Denial ($p < 0.01$) Emotional Support ($p < 0.05$), Venting ($p < 0.05$) and Religion ($p < 0.05$) was also found (Table 3).

Regarding testing the correlations of the BRIEF-COPE with the SOC, a positive correlation between the dimensions of Positive reframing ($p < 0.01$) and Planning ($p < 0.01$) was found, the so-called "adaptive" mechanisms. Negative correlations were observed in dimensions of the BRIEF-COPE that form 'maladaptive' or 'dysfunctional' mechanisms, such as Denial ($p < 0.01$), Substance Use ($p < 0.01$), Behavioral disengagement ($p < 0.01$) and Use of instrumental support ($p < 0.05$) (Table 4). Finally, through examining possible correlations of all scales with sociodemographic data, a positive correlation was found between Sense of Coherence (SOC) and the participant's age ($p = 0.038$).

Table 1. Sociodemographic profile of sample

	N=94	(%)
Age (years)	42.99 ±9.15	
Gender		
Male	14	14.90%
Female	80	85.10%
Residence		
Rural	19	20.20%
Urban	75	79.80%
Family Status		
Single	13	13.80%
Married /Co-habiting	77	81.90%
Divorced	4	4.30%
Widowed	0	0.00%
Education		
Secondary	26	27.70%
Higher- Technical Institution	52	55.30%
Higher- University	16	17.00%
Medical History		
Yes	14	14.90%
No	80	85.10%
Type		
Chronic	13	92.90%
Not-Chronic	1	7.10%
Pain		
Yes	8	57.10%
No	6	42.90%
Intensity		
Mild	8	61.50%
Moderate-Severe	5	38.50%
Duration		
Short	5	62.50%
Long	3	37.50%
Frequency		
Every day	3	25.00%
1-2 times a week	3	25.00%
1-2 times a month	4	33.30%
other	2	16.70%
Effect on daily life		
None	3	23.10%
Little	7	53.80%
A lot	3	23.10%
Effect on relationships		
None	6	46.20%
Little	6	46.10%
A lot	1	7.70%

Table 2. Mean scores of the BRIEF-COPE dimensions

BRIEF-COPE	Mean ± SD
Active coping	3.04±0.69
Denial	1.77±0.74
Substance use	1.14±0.37
Use of emotional support	2.39±0.94
Use of instrumental support	2.41±0.89
Behavioral disengagement	1.49±0.59
Venting	2.62±0.73
Positive reframing	3.20±0.71
Planning	3.37±0.61
Humor	2.20±0.83
Acceptance	3.10±0.66
Religion	2.48±0.94
Self-blame	2.64±0.62

Table 3. Correlations between the FPQ-III subscales, the BRIEF-COPE dimensions and SOC

BRIEF-COPE	FPQ-III minor	FPQ-III major	FPQ-III medical	FPQ-III total
Self-distraction	.230*	.297**	.211*	.300**
Active coping	0.093	0.134	0.155	0.158
Denial	0.165	.245*	.245*	.269**
Substance use	0.013	-0.001	-0.128	-0.052
Use of emotional support	0.172	.228*	0.16	.227*
Use of instrumental support	0.141	0.177	0.162	0.196
Behavioral disengagement	-0.022	0	0.039	0.01
Venting	0.174	.207*	0.199	.237*
Positive reframing	0.086	0.165	0.015	0.107
Planning	0.045	0.185	-0.02	0.086
Humor	0.182	0.143	0.153	0.192
Acceptance	-0.023	0.119	-0.025	0.032
Religion	0.126	.315**	0.156	.247*
Self-blame	-0.109	.245*	-0.138	0.005
Sense of Coherence (SOC)	-0.06	-0.019	-0.123	-0.083

****. p<0.01 *. p<0.05.**

Table 4. Correlations between the BRIEF-COPE dimensions and SOC

BRIEF-COPE	r (Pearson)
Active coping	-0.019
Denial	-.420**
Substance use	-.212*
Use of emotional support	-0.097
Use of instrumental support	-.215*
Behavioral disengagement	-.334**
Venting	-0.14
Positive reframing	.265**
Planning	.281**
Humor	0.034
Acceptance	0.12
Religion	0.081
Self-blame	-0.129

****. p<0.01 *. p<0.05**

Discussion

The aim of this study was the estimation of the fear of pain in workers in primary health care and the control of the possible correlations between the fear of pain, the coping strategies and the Sense of Coherence. Attempting a brief description of the socio-demographic profile of the sample, it is worth mentioning that the majority consisted of women, married and graduates of higher education. Of the total participants, 14 individuals reported a history of a diagnosed disease, of which 8 have reported pain. In 5 cases the pain was described as intense, with little effect on the daily life and relationships with their environment. Related research has shown that chronic pain of moderate to severe intensity, occurs in 19% of adult Europeans, and appeared to significantly affect the quality of their social and professional life (Breivik et al., 2006). Research results around the chronic pain by Müller-Schwefe GH. (2013) emphasized that the intensity of pain is increased in patients who are dissatisfied with the inefficient management.

Analysis of the Fear of Pain Questionnaire (FPQ-III) showed higher mean score in the subscale FPQ-III major, which means that the intense-severe pain, which is perceived as a mentally stressful situation, creates a sense of fear and anxiety to the entire sample. Regarding the mean value of FPQ-III total, it stayed at moderate level (73.77 ± 15.93).

When processing the BRIEF-COPE results, it was found that high mean scores on the entire sample were presented in Active Coping, Positive Reframing, Planning and Acceptance. Active Coping, i.e; taking measures to reduce or cope stressors and Planning, i.e; the strategic action and thinking about what steps need to be taken in order to manage the problem, are strategies which are focused on the problem, while Positive Reframing, which is the effort one makes to obtain something positive from the experience, and Acceptance, which is the assumption of the actual situation, focus on emotion. If the person believes they can control the situation, they select strategies that focus on the problem in order to solve it, including active and deliberate efforts in handling the stressful factors. Conversely, if the person is not able to rectify the situations that cause them stress, they focus on the emotion which aims at reducing the unpleasant feelings arising from the stressful situation (Lazarus & Folkman, 1984, Carver, Scheier & Weintraub, 1989). Hence, it appears that the respondents adopt strategies that focus both on the problem and on the emotion, as is the case in most people (Folkman et al, 1986).

People reporting fear of mild pain (FPQ -III minor), seemed to adopt strategies such as Self-distraction ($p < 0.05$), which is a form of cognitive control, i.e; control exercised by the person on his thoughts. Fear of Severe pain (FPQ-III major), seemed to be positively correlated with Self-distraction ($p < 0.01$), Religion ($p < 0.01$), Denial ($p < 0.05$), Emotional support ($p < 0.05$), Venting ($p < 0.05$) and Self-blame ($p < 0.05$). Self-distraction, i.e; conscious shift of attention to anything but the primary issue, Denial, which is not accepting incidents, Venting, i.e; the dynamic expression of negative emotions and Self-blame, i.e; attributing blame on oneself, all belong to "maladaptive" mechanisms.

This is indicative of the tendency of people with fear of severe pain to adopt strategies which can, even temporarily, relieve them from the anxiety that it entails. This is reinforced by the fact that the fear of medical pain (FPQ- III medical) seemed to be positively associated with Self-distraction and Denial. The FPQ-III total showed a positive correlation with the variables: Self-distraction ($p < 0.01$), where most studies have shown its effectiveness in controlling pain (Brown 1984, McGrath et al. 1992, Mannix et al., 1999), Denial ($p < 0,01$), a short-term effective, but long-term ineffective defense mechanism (Cohen & Lazarus, 1979, Wilson, 1981, Breznitz, 1983),

Emotional support ($p < 0.05$), which is considered to contribute significantly to reducing stress (Coyne et al., 1981, House, 1981, Wills, 1984), Venting ($p < 0.05$), i.e; a dynamic expression of negative emotions that may even be necessary (Breuer & Freud, 1957), but perhaps worsens the wrath of the person (Hornberge et al., 1959, Berkowitz et al., 1962, Buss, 1966, Geen et al., 1975, Murray et al., 1978) or can give rise to adverse effects on behavioral level (Baumeister et al., 1999, Bushman 2002), and Religion ($p < 0.05$). Religion is mentioned as a commonly used coping strategy by young doctors (Fahad D. Al. et al., 2015) and by dental students (Al-Sowygh Zh., 2013). Considering pain as a

stressful situation and attempting an interpretative approach of these correlations, it could be said that the participants cope with the fear of pain by trying to deny or to distract from the painful stimuli, as Self-distraction seemed to correlate positively with all subscales of FPQ-III, so as to move away from that situation, while, at the same time, they look for emotional support from those around them, and for relief in religion.

Regarding the Sense of Coherence Scale (SOC), the average score was relatively high (138.79 ± 21.41). The higher and, therefore, stronger the SOC is, the better the perceived physical, and mental health. High SOC can play an important role in the protection of depressive manifestations (Kikuchi Y et al., 2014, Anyfantakis D. et al., 2015), act as a shield to chronic stress (Buddeberg-Fischer et al., 2010), and strengthen the response to daily work stress (Jonsson et al., 2003, Haoka et al., 2010). This relationship is constant and resulting from many studies in various populations regardless of age, gender, ethnicity and study design (Eriksson et al., 2006). In this study, when testing the correlations between SOC and the sociodemographic characteristics, a positive correlation with age was observed, hence speculating that a high sense of coherence (SOC) is associated with the skills acquired by individuals as a result of the experiences of their lives (Urakawa et al. 2009).

Also, there was a positive correlation between the Sense of Coherence (SOC) and coping strategies (BRIEF-COPE), such as Planning ($p < 0.01$) and the Positive Reframing ($p < 0.01$), which belong to the "mature" or "adaptive" mechanisms, while there was a negative correlation with Denial ($p < 0.01$), Substance Use ($p < 0.01$), Behavioral Disengagement ($p < 0.01$) and the Use of instrumental support ($p < 0.05$), results that are consistent with other research findings (Korotkov & Hannah 1994 Lindström and Eriksson, 2005), which conclude that people with a high sense of coherence are more adaptive to different stress conditions compared to people with low sense of coherence. A strong Sense of Coherence leads to the selection of coping strategies that contribute to the adaptation of the individual, which, in turn, positively affects health, psychological well-being and social functioning.

It is also worth mentioning that although the participants in the study seemed to have a high sense of coherence, affecting positively the adoption of adaptive coping strategies, when tested for possible correlations between FPQ-III and BRIEF-COPE, it has been found that the FPQ-III subscales are positively associated with "maladaptive" mechanisms, such as Self-distraction and Denial. Therefore, probably, the fear of pain mobilizes other coping mechanisms, such as avoidance behaviors which have been studied extensively (Lethem et al., 1983, Andersen et al., 2016, Larsson et al., 2016). This finding could also have clinical interest, as frequently the personal beliefs and attitudes of health professionals encourage indirectly respective beliefs and attitudes to patients, since the relationship is bidirectional (Huben et al., 2005, Linton et al., 2002).

Future research will be good to include a larger sample and a control group from the general population, which will not be derived from the health services. Moreover, it would be interesting to investigate further personality traits and their correlation with variables related to the fear of pain.

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