

Original Article

Physical, Emotional and Catastrophizing Upshots of Chronic Pain the Study On Pain Stress

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Abstract

There are original physical basis of pain, even when an anatomical site or pathophysiological basis cannot be established, but pain also recognizes the importance of affective, cognitive, behavioral, and social factors as contributors to chronic illness behavior. It is also linked with Catastrophizing in relation with sufferer's threshold of pain intensity, pain related disability and psychological distress are found to be significantly high regardless of any type of pain. Unlike acute nociceptive pain chronic pain is not self-limiting and usually neurological in origin, it may evolve in the damaging of either central nervous system or peripheral nervous system results into anxiety, fear, depression, sleeplessness and lack of social interaction so there is a self-perception of stress. In this study Stress has been taken as an amplified condition of psychological effects which is being induced by chronic pain. Aim of the present study was to highlight the presence of physical and emotional constraint relative to other related stresses like traumatic, nutritional and mental stress among chronic pain survivor both by observing the ability and intensity to catastrophize. In a cross sectional study, 140 individuals have been enrolled from general population who have been suffering from any type of chronic pain with exception of Menopausal women, Cardiovascular diseases, Nephropathy and cancer, and age between 18 to 50 years. For evaluation multistage random selection procedure have been performed by governing questionnaire to examine their pain duration, intensity, frequency, and degree of multi psychological feeling using PCS of Michael JL Sullivan and stress by SSS. It is concluded that sufferers rise to the challenge of difficult painful situations that leads to a number of psychophysiological disorders and raised emotional distress, especially depressive symptoms, these are often poorly controlled. On the basis of the available evidence that it is not clear whether chronic pain sufferers really do have higher levels of distress compared to others it is recommended that ability of being catastrophize as well as emotional and physical distress can be improved by various relaxation and counselling therapies that can relieve the cycle of pain.

Keywords

neuropathic, nociceptive, Catastrophizing, rumination. Pain catastrophizing scale (PCS), Sadaf stress scale (SSS), Central nervous system (CNS), Peripheral nervous system (PNS). Osteoarthritis (O.A).

Introduction

Unlike acute nociceptive pain chronic pain is not self-limiting and usually neurological in origin, it may evolve in the damaging of either CNS or PNS results into anxiety, fear, depression, sleeplessness and lack of social interaction so there is a self-perception of stress (Waxman, 2006). The Individuals facing chronically stressful incidents are being undergone physiological, biochemical, and psychological alterations, subsequently in stress related neuropsychiatric disorders, such as depression or anxiety (Lazarus R, 1984 & Cyril, 2010). Moreover, the fundamental changes also being observed in the brain called as neuroplasticity (Jensen, 2009). In Addition, by brain scanning techniques structurally and functionally important part of limbic system, the hippocampus involves in learning and memory significantly sensitive to stress hormone (glucocorticoids) (Cheryl, 2008), appeared to be resorbed or shrunk (McEwen, 1968). These

defective changes leads to experience of pain from non-painful stimuli said to be allodynia as well as hypersensitivity to pain said to be hyperalgesia. The resultant changes in the region of brain are analyzed under biophysical techniques via EEG which illustrate augmented activity of beta waves. Comparatively the decreased activity of alpha waves whereas diminished activity of theta waves (Jensen, 2009 & Sapolsky, 1986). Sustained stress cause tissue trauma which consequently leads to biochemical, physiological and psychological alteration (Lazarus R, 1984). (Fig: 1). Catastrophizing has been constantly associated with increased pain sensitivity moreover diminished endogenous pain inhibitory controls (Edwards R, 2005 & Goodin, 2009). Catastrophizing has been defined as an exaggerated negative mental set brought to bear during actual or anticipated painful experience (Alice, 2013). Catastrophizing is a



tendency to magnify or exaggerate the threat value or seriousness of pain sensations. The pain catastrophizing has been observed across diverse patient groups, including mixed chronic pain, low back pain, rheumatoid arthritis, aversive diagnostic procedures, surgery, dental procedures, burn dressing changes, whiplash injuries, and survey samples of young adults, asymptomatic individuals participating in experimental pain procedures, and varsity athletes (Mark 2012 & Kabat 1994). Women and men may differ in their emotional responses to pain. Studies have revealed that, when responding to pain, girls and women show more of an emotional response and tend to be more worried and irritated about pain (Unruh, 1996). Expectations regarding social roles may alter how women and men respond to pain. There have been multiple roles for women for example caring for children or older adults, household and work responsibilities and may attend to pain more readily so as to reduce its impact (Unruh, 1996). OA is a very common degenerative disease affecting up to 70% of adults over the age of 65 years (Felson, 1998). Women are more likely to report OA pain than men (Davis, 1981, Cooper et.al, 1998 & Felson, 1998). Several investigations have revealed that women are more disposed in pain catastrophizing to a greater extent than men. A relation between gender and catastrophizing has been observed in both clinical and experimental research, using a variety of assessment instruments. For example, in a sample of patients with musculoskeletal pain reported that women scored higher than men (Jensen et al, 1994 and Rosenstein et al, 1983). There are many studies which advocate that catastrophizing has led to risk factor for the development of pain-related disability (Sullivan et al., 2001, Vlaeyen et.al, 2000 & Waddell, 1998) Means that physical stresses are provoked by pain catastrophizing due to chronic pain. Poor sleep efficiency and frequent awakenings results from little slow wave (delta), leads to insomnia. Experimentally, it has been observed that people with inadequate sleep and poor sleep quality are more disposed to having poor control on pain experiences hence perceive stress. e.g., poor sleep quality is related to greater pain severity (Smith MT 2004). Study was carried out on laboratory and clinical studies of sleep and pain and revealed about direct or indirect impact on pain feelings due to sleep lacking (Flor 1993). Psychosocial aspects clarify how sleep associates with pain, principally pain catastrophizing. Some studies have displayed being in state of anxiety and emotional distress results from poor sleep quality which indirectly relates to pain catastrophizing

(Edell-U, 2002 & Chang PP et. al, 1997). Furthermore, individual having poor sleep quality suffer from deleterious impact not only on physical and mental health, in fact on occupational functioning, and overall quality of life (Knudsen HK 2007).

The stress and chronic pain is initiated by biological response. (chart 2). The link between stress, stressors, and chronic pain is complicated and supported by a number of biological, psychological, and social factors that mediate this association (Anthony K, 2010). The innate biochemical responses to stress modulate the pain perception. Some studies illustrated that Pain is often endured in the absence of peripheral pathology means that psychogenically. Because number of papers proposed that where even low 'stress' there may be pain. On the other hand, stressor may be a trauma and it is associated with a peripheral pathology (e.g. Skin abrasion, fracture) that directly associates to a painful experience, there are several other types of stress (including psychological, social, and chemical). The most important question here is that how to conclude whether pain in the absence of peripheral pathology is 'real' or not. This can be accessed by Stress symptoms caused by peripheral pathologies such as irritable bowel syndrome and chronic fatigue etc. by analyzing whether the symptoms are fake as part of attention-seeking behavior. One of the idea suggested that individual that possess low pain threshold will undergo pain and depiction will be observed by pupillary dilation due to perceiving pain (Hapman CR et.al 1999).

Methodology

Aim of the present study was to demographically evaluate the prevalence of chronic pain in male & female, identify possible cause of its severity, its cascade of amplification leading to physical and emotional stresses as well as on psychologic site. This study was need to be conducted, because in number of reviews, it was observed that increase in chronic pain often leads to interruption and physically inactive lifestyle, moreover various study given the idea about in old age, the coping intervention do not effectively work as compare to middle age because of aging phenomena. Therefore, study was interestingly carried out among adult age subjects. In a cross sectional study, 140 individuals had been enrolled from general population of Karachi, who had been suffering from any type of chronic pain, because in acute pain condition being undergo catastrophizing very likely to occur in order

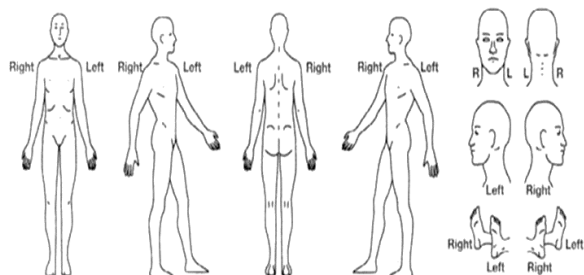
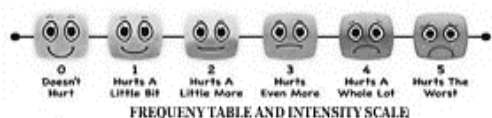


to interface unusual stress and brain is not adapted to it. In exclusive criteria menopausal women, cardiovascular diseases, Nephropathy and cancer and severely ill individual were not enrolled. Males and females Subject were considered to be eligible if they lied in age range between: 18-50. Moreover, it contained pain location scale to facilitate in pain reporting easily.

In addition, the questionnaire was designed precisely with different scales. Furthermore, PCS was used to analyze level of pain and its related thinking which can be completed and scored in less than 5 minutes.

Justify Your Pain Frequency And Intensity Using Given Below Table.

0	1	2	3	4
Never	rarely	sometimes	Very often	always



As this scale contain 13 self-reporting questions derived from descriptions of catastrophizing This survey based adult population study was basically conducted to investigate the pattern of pain in order to access the behaviors and relative psychophysiological aspects which either limits or influence different health care issues. With the help of findings of our study it was concluded that most of the pain enduring subjects were reported by Osteoarthritis as compare to other. Moreover, due to chronic pain, superficially the type of stresses observed by them were emotional and physical stress among mental, nutritional and traumatic stresses. On the other side among components of catastrophizing,

described in the literature. This scale also asked participants to reflect on past painful events by degree of occurrence on 5-point scales 0 means not at all while 4 means all the time. Moreover, psychological distress such as physical and emotional stresses are measured by Sadaf stress scale.

Data was primary collected from hospitals, office, and different department within university, Homes, and General Shops etc. The respondents were randomly selected on stratified random sampling basis. We assessed any type of pain by a validated self-report questionnaire in the general healthy population, next the respondents were instructed to report whether they had experienced pain or discomfort more than three months. In addition, obtaining frequency or occurrence of an event or status. The questionnaires included demographic and socioeconomic factors, and variables concerning lifestyle, work, function, and psychological status to be asked. Moreover, participant was usually asked to recall pain experience over a period of time to allow to obtain maximum possible pain symptoms which they had been perceiving. SPSS version 16.0 was utilized to analyze the data. Furthermore, Pearson's product movement correlation coefficient was analyzed to calculated and find the relationship between profile of psychological symptoms and pain catastrophizing scale outcomes. Finally, Microsoft Office 2013 was used to access graphical representations of our different parameters obtained via study.

Result

subjects were significantly found to be under rumination and helplessness, a type of depressive disorder. Statistical Analysis Pearson correlation coefficients were calculated to explore the most abundant interrelations between Rumination, magnification and helplessness with physical, mental and emotional stress respectively. Our results demonstrated that Intensity of pain and catastrophizing were significantly not only directionally proportional to each other but also plenteous Correlated with helplessness.

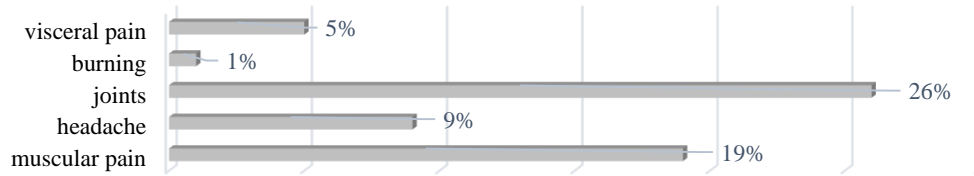


Figure 1 shows distinct pain location with their prevalence reported by chronic pain survival in our study.

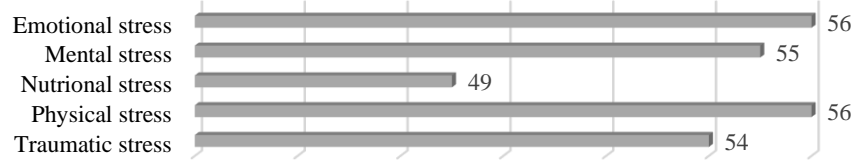


Figure: 2 shows Depiction of comparative various stress outcomes with obtained by SSS.

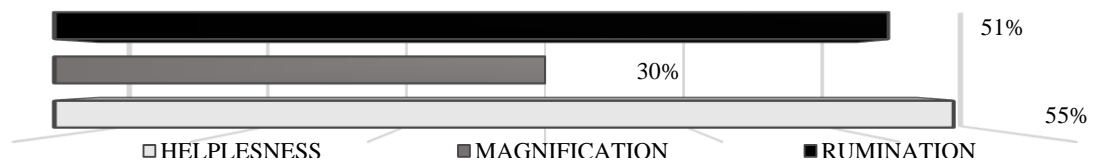


Figure 3 shows three components of pain catastrophizing with respective percentages of findings.

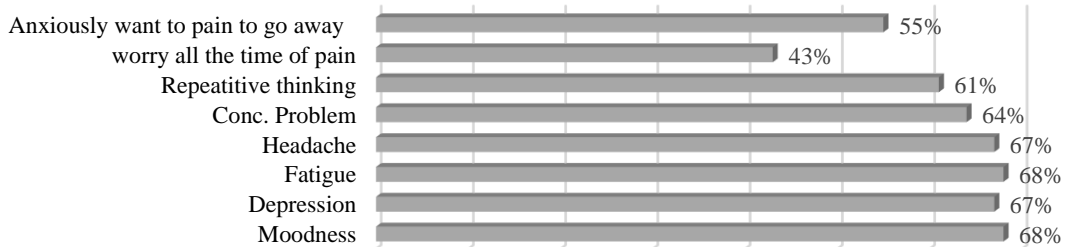


Figure 4 shows the increased outcomes of rumination and helplessness in catastrophizing scale at the same time significant upshots of physical, mental and emotional stress in Sadaf stress scale.

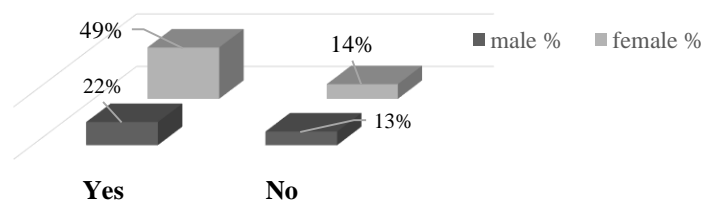


Figure: 5 shows Percentage of incident of chronic pain in male and female significantly females reported more than males.

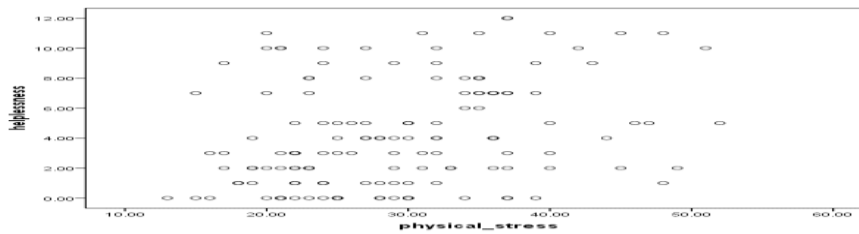
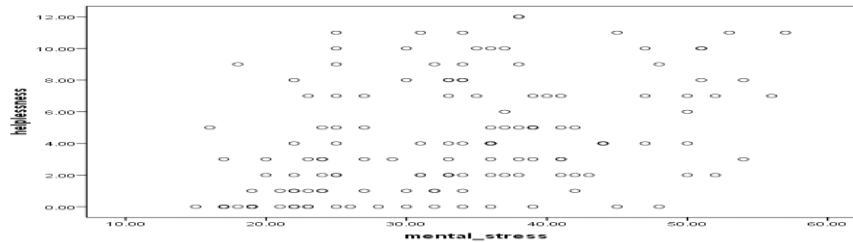
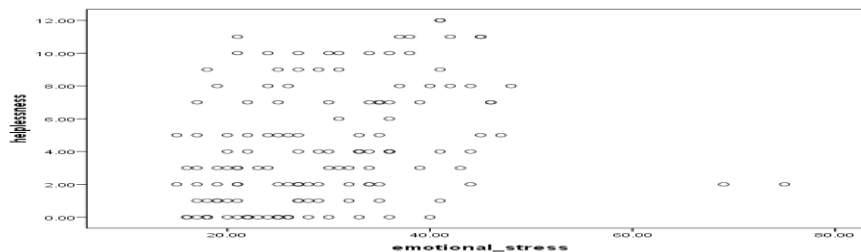


Figure 6 Pearson correlation for physical stress and helplessness.



Pearson correlation for mental stress and helplessness.



Pearson correlation for emotional stress and helplessness.

Discussion

Our findings have supported the assumptions of the chronic pain leads to physical and emotional stresses and subsequently results into exaggerated thoughts which are termed as catastrophizing. Furthermore, our study determined that structural differences in females as well as nutritional insufficiencies may contribute to frequencies of joints pain. Our study enforced that behavioural discrimination is also the important fact to provoke stress induces catastrophic pain (Michael J et. al 2004). Likewise, in generally if women in working field having expose higher than men to risk factors for musculoskeletal pain, it will also be affected by the prevalence of pain (J Orthop .et.al 1996). Because within the same task or profession, performance is different. Such as carry specific amount of load is given to carry from one way to other. Male can finish it in a single time while female cannot so. This may cause physical stress (Susan H, 2010) However, female hormone estrogen, plays a role in cartilage protection. When estrogen decreases monthly during the menstrual cycle as well as during menopause, the amount of cushioning the cartilage provided also decreases and if individuals are prone to anxiety, then it is possible that they

suffer regular back pain for years as a result of stress. Moreover, we know that sustain abnormal stimulation to neurons may elicit the heat shock proteins which provoke beneficial stress in body. But if these stresses are diverged into further categories of stress like in our results physical and emotional stresses shown high even patients taking interventions which indicated that they are enduring psychogenic pain which require counselling to minimize this stress. PCS analysis assessed that great number of subjects were under catastrophizing with highest percent of Rumination and helplessness, the symptoms of depression. Peoples undergo depression not only unable to banish sad memories, but also get paranoid. Hence, number of studies reflected that distress can be improved by various relaxation techniques, such as meditation or breathing exercises, biofeedback therapy also suggested as to maintain the stress level (Paul R, 2012). Studies recommended that increasing the focus of treatment on tolerance, will decreasing the power of unnecessarily dispiriting thoughts and enhancing psychological flexibility (Kevinal et. al 2006).

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