

Catastrophizing Pain; A More Feminine Characteristics of Pain & Discomfort

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Abstract

Catastrophizing is associated to occurrence and maintenance of magnified pain threshold, pain is related to worry and fear which leads to inability in diverting attention away from pain due to which psychological distress are supposed to be high irrespective to any type of discomfort. Fear of pain is a characteristic feature which describes a maladaptive cognitive expression by sufferers with anxiety and depressive symptoms. Catastrophizing pain has been interpreted as an emotional variable as fear of pain and has been defined as highly negative expressive reaction to pain eliciting stimuli involving a high degree of mobilization for avoidance behavior which inversely reduces the quality of life. The Aim of the present study was to evaluate susceptibility of catastrophizing pain among male and female sufferers. Moreover, this paper discriminates between those who authentically perceive pain to that who catastrophize. Moreover, find out reasons behind that catastrophizes suffer heightened pain experiences and increased emotional distress and how do we conclude whether pain in the absence of peripheral pathology is 'real' or not. 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 acceptance of 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 pain catastrophizing scale of Michael JL Sullivan. The results indicated a manipulative behavior in expression of pain or discomfort more common among females than males. This might be due to many psychosocial constraints that in turn exaggerate the catastrophizing of pain reporting and emotional instability in females. By discriminating between true and fake point of view in pain it was concluded that Pain catastrophizing in most of the individual found to be pre-existing trait of mindset due to their daily practices on the other hand it was observed that small ratio of females who reported low worst pain intensity with less catastrophized comparatively some of the proportion of females reported high degree of worst pain with high catastrophizing the inverse factors between them was emotional frustration, which was low in fake pain preceptors this is because people may not undergo emotional frustration after exploring exaggerated pain behavior to seek attention.

Keywords

Catastrophizing, rumination. Pain catastrophizing scale (PCS), Sadaf stress scale (SSS), Central nervous system (CNS), Peripheral nervous system (PNS).

Introduction

Indeed, pain is one of the major public health problems because of its high prevalence rates and the considerable burden in terms of working disability (Susan et. al. 2010). The

first introducer of catastrophizing pain was Albert Ellis (1962) successively it was revised by Aaron Beck (1979). Further, it was stated that it is maladaptive pain coping strategies and revealed the fear of pain as an

emotional variable which have tendency of highly negative expressive reaction to pain eliciting stimuli involving a high degree of mobilization from source of stimuli which inversely reduces the quality of life (See Fig: 3). Likewise, experimentally it is observed in healthy volunteers, catastrophizing associate with increased pain sensitivity moreover diminished endogenous pain inhibitory controls (Edwards R, 2005 & Goodin, 2009).

Moreover, Catastrophizing is affinity to amplify or exaggerate the threat value of pain which is usually a signal of a warning and should be diminished. Pain itself is not a disease in fact it facilitates to diagnose or to detect causes of nociception. Absenteeism of pain in some cases lead to deterioration of physiological condition. It was stated that Pain is inevitable but suffering is optional and once the cause of pain is obtained the physiologic condition may be alleviated to some extent (Medline plus, 2014; Nordqvist, C., 2015 and Aphorism, Z., 2013). Gender-role theory during the course of this study of intersex stated that socially women have been more observed to report pain than men. In fact, adult boys were observed with socially learned behavior unlike to weeping (John, M., 1955). Moreover, Exposure theory stated that susceptibility for musculoskeletal pain in women are more than men to risk factors which favor female in prevalence of pain (Susan H, 2010). Moreover, Demand-Control-Support' model illustrated that three sources of stress promotes musculoskeletal pain in women, these include high task demands, little independency and lack of social support (Karasek, 1998). Furthermore, Vulnerability theory proposed that vulnerability of women is very high than men to develop musculoskeletal pain. As a fact of anatomy and physiology and role of sex hormones is one of the major argument in considering sex-specific risk factors concerns to sex hormones (Wijnhoven et. al, 2006).

Moreover, it was justified that in female vulnerability, hormones and reproduction-related features were found to be associated with low posterior pain in the age range of 20–60 years from the population-based study MoRGeN (the monitoring project on risk factors and health in The Netherlands) where the search factors in study were, long duration of pill use, a young age at first childbirth, an early menarche, estrogen supplementation during menopause, an unusual menstruation cycle (irregular or very long), and hysterectomy(surgery to remove a woman's uterus) cause prevalence of pain in females.

However, there is also a pathophysiologic justification of heightened pain in females due to the effects of estradiol. Particularly, sex hormones have a significant effect on pain nociception which supported the vulnerability theory (Susan H, 2010). Most of the literature in their cross-sectional studies on pain affliction and age has described that changes occur in pain with passage of age in which younger adults were observed with increased efforts at coping generally with greater pain severity, whereas older adults did not (Such that chronic pain peaking in middle age (Helme et. al, 1999). In the population-based studies of chronic pain socioeconomic status was found to be inversely associated pain (Fiona M, 2010).

There are many indicators of socioeconomic status, such as occupation, level of education, employment status, income, housing status, access to a car, and health insurance status, have been used (Fiona M, 2010). In this study it was discovered that chronic pain may undesirably and rapidly affect employment status and income (Fiona M, 2010). Moreover, evidence from birth-cohort studies recommended that children of parents with chronic pain conditions supposed to be more predispose to develop pain conditions

themselves because chronic pain disorders 'run in families' (Waldie et al, 2002 & Groholt et al, 2003). Current researches has supported a multidimensional concepts of catastrophizing, which were comprised of rumination ('I can't stop thinking about how much it hurts'), magnification ('I'm afraid that something serious might happen'), and helplessness ('There is nothing I can do to reduce the intensity of the pain'). Catastrophizing has been argued as a cognitive element of pain experience, and depression has been discussed as a significant emotional element of pain experience (Spanos et al, 1979, Romano et.al, 1985, Chaves et.al, 1987, Jensen et al., 1987, Sullivan et al., 1992, 1995). The strategies that are used by individuals to diminish the impact of stressors on their psychological well-being is said to be coping in this way many findings consequently suggested pain coping strategies when used by pain catastrophizing subjects are less effective (Heyneman et al. 1990).

On the other hand, the pain faced by individual with spinal cord injuries (SCI) is generic and it is also challenging which can be associated with increased physical and psychological dysfunction so their pain intensity cannot be justified in the category of catastrophizing (Jensen MP et.al, 2005 & Warms CA et.al, 2002). Some studies demonstrated that certain coping responses are associated with better mental health, such as greater use of task persistence, and ignoring pain, while other surviving responses are associated with higher levels of pain interference, such as greater use of resting, guarding, and asking for assistance, besides, social environmental variables, such as perceived social support (Raichel K et.al, 2007). For those individuals who have sustained stroke injuries, might contribute to a cascade of psychological and

neurophysiological consequences which ultimately contribute to a course of chronicity. Increased attention to pain might lead to more intense pain experience which in turn contribute to more intense emotional distress, and interfere with the effectiveness of surviving strategies (Quartana PJ et. al, 2009).

Current research showed that individuals with heightened expressions of pain behavior are linked with a variety of conflicting outcomes such as, augmented pain, depression, functional disability (Prkachin KM, et al., 2007) (See fig 1). On the other hand, those with 'not disclosing' or inhibiting expression of emotional experiences undergo maladaptive effects (Weinberger et al, 1979, Wegner et al, 1987 & Schwartz, 1990). It has been suggested that the act of inhibiting expression of emotional experiences may give rise to disturbing thought interruptions (Horowitz, 1986). In this way it may result into adverse mood (Wenzlaff et al., 1991, Wegner and Lane, 1995). Several experimental investigations have been shown that silencing of emotions can lead to increased muscle tension, autonomic Hyper-reactivity, and impaired immune functions (Esterling et al., 1990, Labott et al., 1990 & Traue, 1995).

Some studies have revealed that being in the state of emotional distress and anxiety results from poor sleep quality which indirectly relates to pain catastrophizing (Chang PP et. al, 1997 and Edell-U, 2002). Moreover, any type of stresses amplified by psychological effects overwhelming the pain perceptions due to hangover in the state of rumination (Reuben, 2015). In which repetition in the firing of neural circuits tends to strengthen those circuits and make stronger the ruminating circuit (Anson Whitmer and Marie Banich (2007) (See fig 2 & 3).

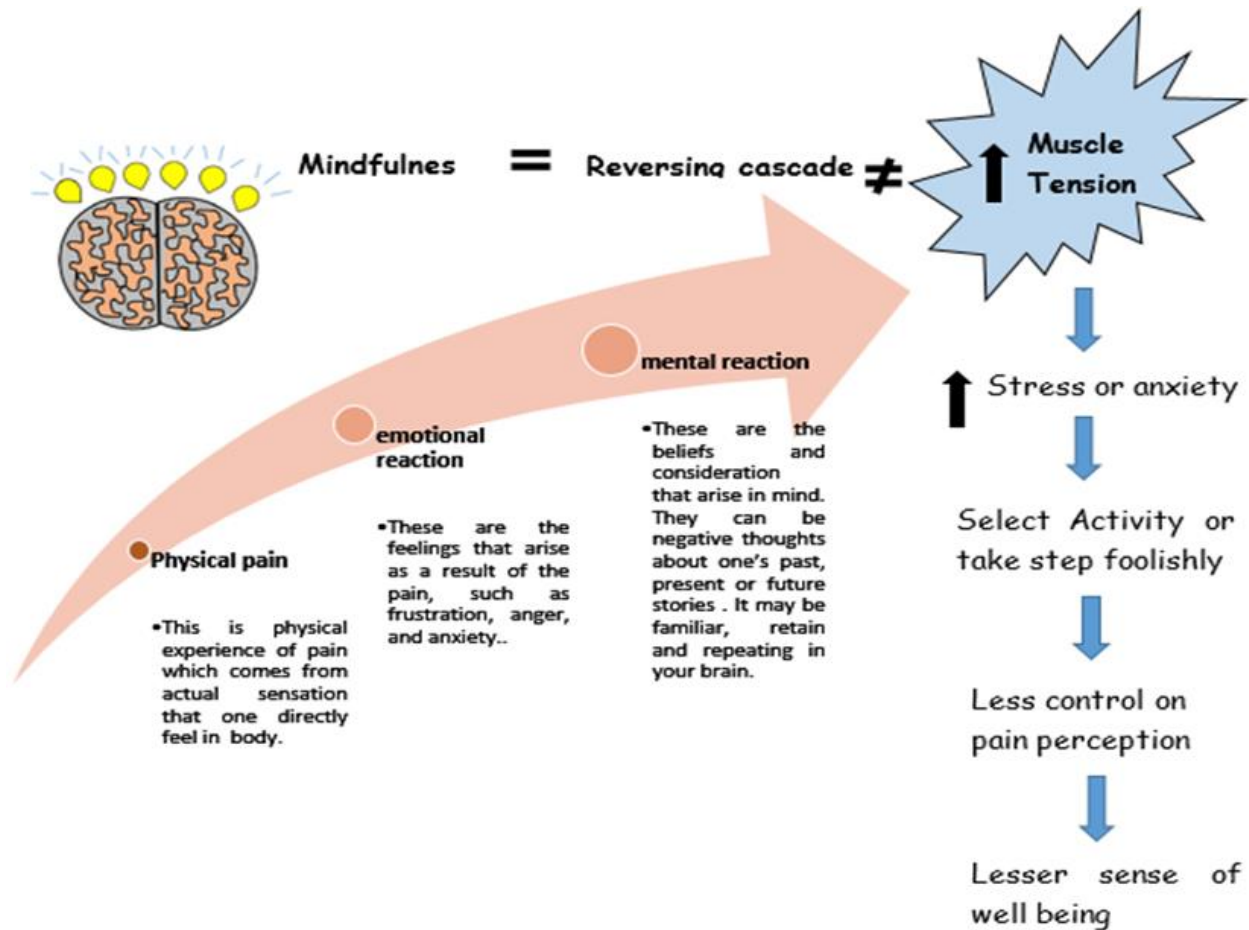


Figure shows Progressive positive and Negative cascade of stress toward well being

Figure illustrating that once individual undergo physical pain chronically it results into emotional reaction such as anxiety frustration etc. then leads to mental outcomes that is passive beliefs which worsen the body orientation by means of producing muscle tension consequently to low well-being. But, mindfulness therapy reverse this cascade on the other hand

Methodology

This study was requisite to be conducted because in number of reviews, it was witnessed that chronic pain associated with catastrophizing pain and it is prevalent in female moreover, the interventions for coping did not effectively work in aged one as compare to middle age because of aging phenomena. This study and their recommendations of interventions not applicable for sever and non-healthy individuals like CVD, Cancer, Menopausal, Nephro and Neuro Diseases, because we cannot justify the intensity of their pain which may be totally pathological. 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. Males and females Subject were considered to be eligible if they lied in age range between: 18-50. Marital status may married/single/ widow. 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 pain

catastrophizing scale of Michael JL Sullivan and stress by SSS. Preliminarily variables were Age, Gender, Socioeconomic gradients. These gradients also play role to by mean of lack of access toward interventions, Education, Predisposition risk by family history, BMI, Marital status, Occupation along with Pain location, pain intensity by facial expression, Thoughts during Pain and Psychological distress. Process of Data Collection was done in hospitals, office, different department within university, Homes, General Shops in Karachi. Working procedure started with written informed consent for study participation to eligible subjects. In this randomly stratified selection to the respondent's questionnaires comprised

of demographic and socioeconomic factors, variables concerning lifestyle, work, function, and psychological status as well as different pain scales to be asked. The field survey had been conducted from May 2015 – December 2015 for the collection of primary data. Furthermore, SPSS version 16.0 was utilized to analyze the hypotheses as described in the introduction and Pearson's product movement correlation coefficient was used to calculated and find out the relationship between profile of psychological symptoms and pain catastrophizing scale outcomes With respect to outcomes Microsoft Office 2013 was used to access graphical representations of our different parameters obtained via study.

Results

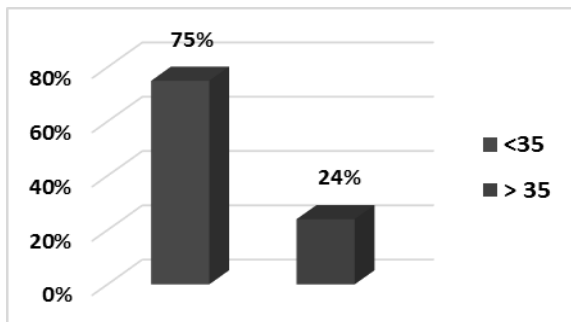


Figure: 1 shows Percentage of participant's endured chronic pain below and above age 35. 75% subjects were found to be less than the age of 35 reported chronic pain whereas only 24% subjects were found as greater than the age of 35

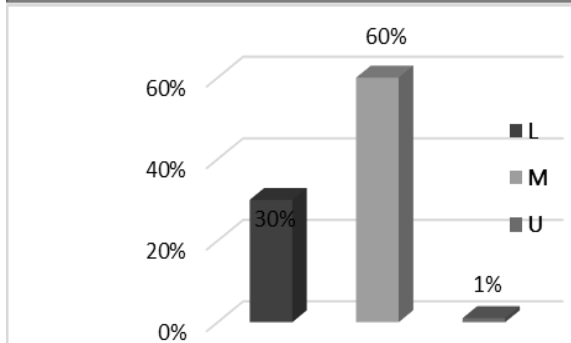


Figure: 4 shows that however some ratio of females reported high emotional frustration in chronic pain relative to male but the ratio of no emotional fluctuation found somehow similar between male and females.

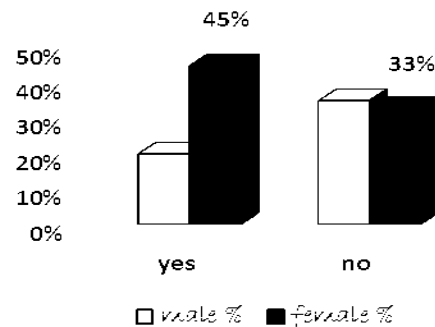


Figure: 3 shows that some of the ratio of females reported high emotional frustration in chronic pain relative to male however the ratio of no emotional fluctuation found somehow similar between male and

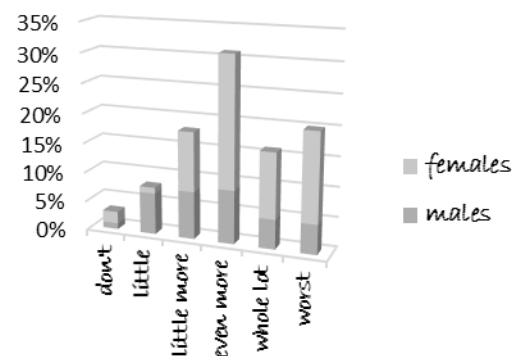


Figure: 4 shows depiction of pain intensity by facial pain intensity scale in both genders.

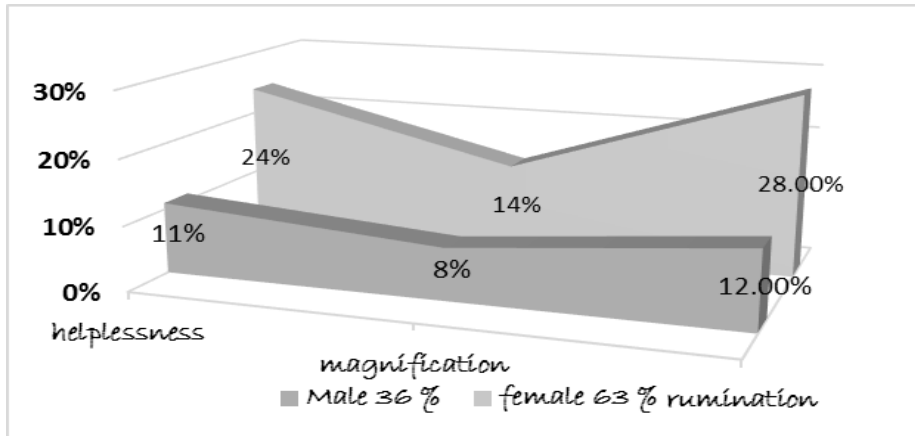


Figure 5 shows percentages of occurrence of Pain catastrophizing in male and female obtained via data.

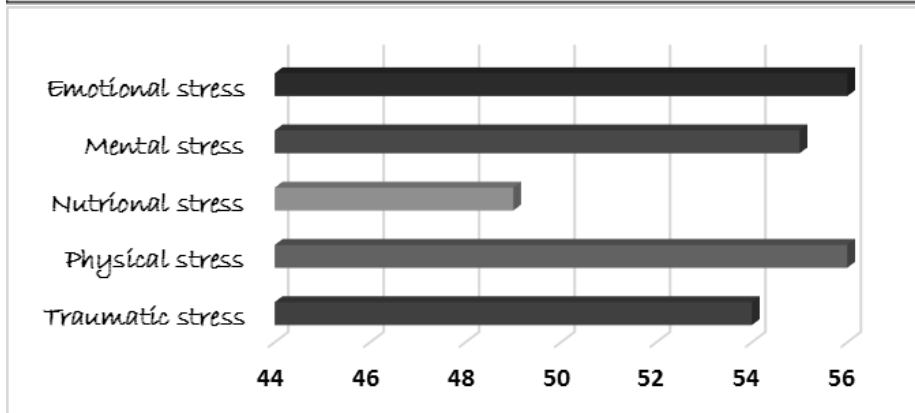


Figure: 6 shows Depiction of comparative various stress outcomes with obtained by SSS.

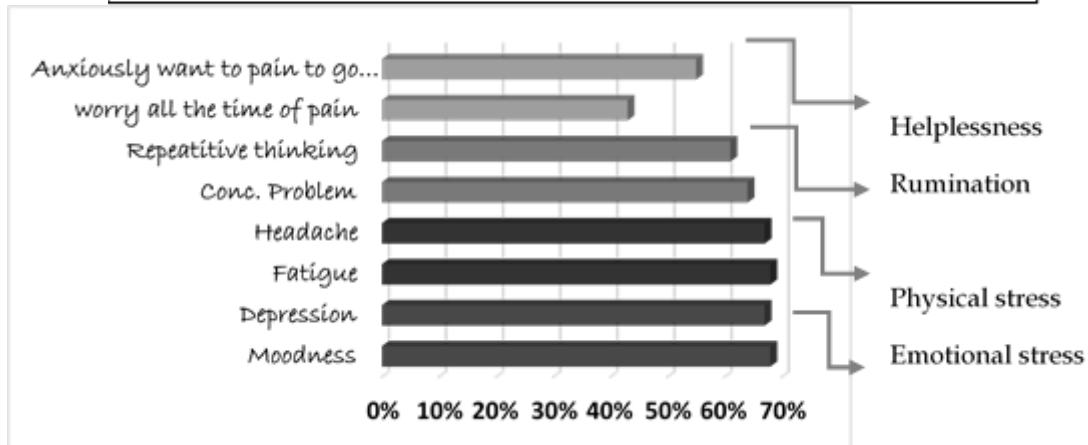


Figure 7 shows the increased outcomes of rumination and helplessness in catastrophizing scale at the same time significant upshots of physical, mental and emotional stress in Sadaf stress scale.

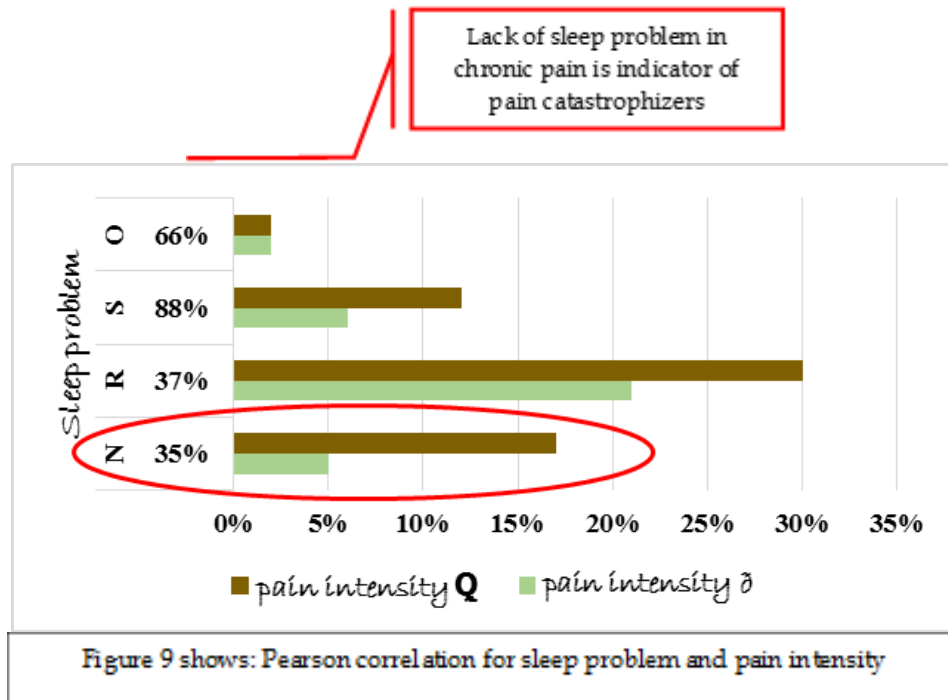


Table shows Comparative findings between male and female

Findings	Male %	Female %
chronic pain	22	49
Emotional frustration	20	45
Pain catastrophizes	36	63
chronicity > 12 months	55	
Chronicity < 6 months	21	
> 35 age	24	
< 35 age	75	
No sleep problem	35 %	
Sleep problem	88 %	
Rumination	12	28
Pain intensity score	35	61
Helplessness	11	24

Discussion

Various studies revealed and supported that females are more susceptible of

catastrophizing pain (John Money et. al 1955 & Roger et. al, 2000). Catastrophizing is related to amplified pain sensitivity also the

endogenous inhibitory controls over pain become diminished. (Edwards RR et al 2005 & Godin BR et. al 2009).

Furthermore, Studies have revealed that females and males may differ in their emotional responses to pain because girls and women show more emotional response and tend to be more worried and irritated to pain (Unruh, 1996). Conversely some studies also determine that females have greater coping skills and tendency to recover from pain and they do not enable pain to control their lives because of the presence of gaining testosterone hormone which increase the threshold for pain which elevates tolerance for pain (Stephanie E. Clipper, 2015). However, our study has shown that the identification of pain perception was thought to be high in pain catastrophizing scale by feminine with high pain intensity facial pain rating scale and high emotional frustration relative to masculine. In addition, there is a connection between pain and sleep quality which endorse the level of discomfort (Smith MT 2004). Our results as well as some studies determined that people who reported sleep difficulties in the past week also reported sleep interference with their work, their mood, activities, relationships and amusement of life overall in the form of emotional frustration (Tim Roehrs et.al, 2015). Some study on laboratory and clinical studies of sleep and pain revealed Pain prevents sleeping, and not sleeping makes the pain worse and it cause direct and indirect impact on pain perception (R. Morgan, 2007 & Flor, 1993).

Hence in our study some of the ratio depicted that they had been suffering from chronic pain they had severe pain with insomnia where as some of them reported severe pain with not enough sleep problem (figure: 31). This statement helps us to filter out true pain preceptor who need basic treatment and

interventions to improve cognitive disabilities. Number of studies steadily revealed that chronic pain occurrence is inversely associated to socioeconomic status (SES) (Fiona M, 2010). Some studies blame that state of poverty is a major cause of mal-adaptive pain coping strategy because primary impact of poverty reflects to economic hardship and stress to manage demand of life. Moreover, it was stated that low level of estrogen is associated with a lower activity of opioid-mediated neurotransmission and a lower level of pain reporting (Smith YR, 2006).

Various studies revealed that chronic pain is characterized by widespread pain and it do not only alter high level of fatigue, sleep disturbance, and altered cognition but also provoke Psychological stress which further modify these features (Jane C et. al 2015 & Anthony K.Pet. al 2010). In addition, hypothalamus plays fundamental role in common autonomic and neuroendocrine responses to emotions in orbitofrontal and amygdala responses to emotions (Bohus et al., 1996). In addition, those individuals who had been facing sustained stressful incidents were more prone to undergone physiological, biochemical, and psychological alterations, subsequently in stress-related neuropsychiatric disorders, such as depression or anxiety (Lazarus R, 1984& Cyril 2010).

Conclusion

Our survey based adult population study was fundamentally conducted to investigate the feature 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 49 % females and 22% males reported us chronic pain in which the ratio of age below 35 were found as 75% whereas, the ratio of

age above 35 were obtained about 24%. Moreover, the ratio of catastrophizing male and female obtained from PCS were 36:63.

On the other hand, subjects who reported any type of discomfort beyond 12 months were 55% whereas 6% were those who had been suffering from chronic pain below 12 months along with this 21% were those who had been chronic pain less than 6 months means these second two groups are viable to improve their life relatively to first one group of chronic pain. Furthermore, important step for their intervention is being known about reasons or causes of their pain for feasible stride and age group. In addition, the desirable findings were 28% female and 12% male reported rumination with 35% females had no problem but scored high in pain intensity relative to male. In addition, due to chronicity, pain perception drained the emotional frustration outside which are actually psychophysiological aspects and it is being worst by sustained stress hormones.

One of our purposes of the study was to examine the level and role of Rumination and helplessness in heterogeneous chronic pain population. It was found that level of rumination, concentration problem, headache, fatigue, depression, and moodiness were high whereas low ruminators reported higher levels of skills associated with sleep satisfaction (Young EA. 2001 & Brosschot JF 2006). Most remarkable outcome we obtained with this study was although chronic pain induced mental and emotional stress but it was also noticed that catastrophizers rated the high values more or less each stress like physical stress, nutritional and traumatic stress with no or rarely sleep problem but high rumination was shown, a component of pain catastrophizing which causes executive neural circuits tends to strengthen and engaged within same path and prevent individuals to cope up and escape

from traumatic event they had. Because individual unable to get new thinking.

In this way we estimated that pain catastrophizing was best predicted by Rumination and helplessness and lack of sleep problems. In addition, chronic pain may be responsible to increase nutritional stress such as abnormal bowel, indigestion etc. and catastrophic subjects will be free from nutritional stresses or found very small trace amount of nutritional stress which supports in discrimination of pain preceptor and pain catastrophizers.

Hence, number of studies revealed that various relaxation techniques now available to improve stress of pain such as meditation or breathing exercises as well as the biofeedback therapy also suggested as to maintain the stress level (Paul R, 2012). Moreover, some studies endorsed that increasing the focus of treatment on tolerance will decrease the power of unnecessarily disheartening thoughts and enhance psychological flexibility (Kevinal et. al 2006). There were no supportive and published studies related to efficacy of pharmacologic interventions in case of the reduction of catastrophizing.

However, counseling based treatment delivered by psychologist steadily lessens catastrophizing (Edwards 2006). Moreover, innovative type of interventions has been introduced by first hand and some scientists which elaborated that catastrophizing pain can be controlled without drug induction by game like snow world developed by Hunter Hoffman and David Patterson which reduce the pain by improvement in minimum anxious thought (Diane Gromala et.al 2013 & Trost 2014).

Moreover, some findings via literature reveal that integration of pain is perceived.

Means that whether one's heart is being broken or one's is being ignored the emotional feelings links to limbic system Moreover one's finger is being cut then it's pain will also links to limbic system (Kabat-Zinn 1994 & East west Yogi 2012).

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