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PSYCHOSOCIAL PREDICTORS OF PSYCHOLOGICAL DISTRESS IN INDIVIDUALS WITH LOW BACK PAIN

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Abstract

The current study aims to examine the predictive relationship in predictors like; cognitive distortions, fear of pain, hyper-vigilance and psychological distress in patients with chronic low back pain. The clinical sample of 100, comprising of 22 men (M=38.95, SD=12.55) and 78 women (M= 40.03, SD= 10.77) experiencing chronic low back pain from the emergency and out-patient departments (OPD) of orthopedic from the government hospitals, i.e. Sheikh Zayed hospital (n=26), Jinnah hospital (n=57) and Sir Ganga Ram hospital (n=10) and private clinics (n=7) was selected. Correlation research design (within) was used to investigate the study variables. Assessment measures were used in the current study: Demographic Information Questionnaire, The Pain Catastrophizing Scale, The Fear of Pain Questionnaire-III, The Pain Vigilance and Awareness Questionnaire, and Psychological Distress scale. Pain catastrophizing (rumination, magnification and helplessness) was significantly positively related to pain related fear at all the three levels of pain, i.e. minor, severe and medical pain, pain vigilance and awareness, and psychological distress. Helplessness and magnification emerged as the positive predictors of psychological distress in patients with chronic low back pain. Present study will provide an intervention for the health care providers as well as the patients to get a knowhow of the risk factors involved in chronic pain of low back, and ways to reduce the psychological harm of this physiological condition.

Keywords

Low Back Pain, Pain Catastrophizing, Hypervigilance, Chronic Pain and Psychological Distress

1. Introduction

As humans being, we have capacity to experience a wide range of feelings and sensations. These sensations include heat, cold, hunger and pain. Experience of pain is inevitable and it is not only a sensation but the meaning we assig to discomfort (Farlex, 2014). According to International Association for the Study of Pain (2020), pain is an uncomfortable experience both at emotional and sensational level and it is associated with damage to

tissues which might be real or expectational (Farlex, 2014). The prevalence of low back pain (LBP) in low-income countries ranged from 1.4 to 20.0% and 0.024–7.0%, in high income countries respectively. Research shows that the chances of LBP in male patient was higher than their female counterparts (Fatoye, 2019). Arslan *et al*. (2016) found out that 29.20% and 69.20% office workers of KEMU, Lahore was suffering from LBP at one point in life and lifetime prevalence respectively. Chronic LBP is defined as pain in the low back which continues for 3 months or longer, even after the treatment for the pain is already seek (NIH, 2020). It may originate from an injury, disease or stresses on different structures of the body. LBP is the leading cause of disability (GBD, 2017). The actual cause of the chronic low back pain is often unknown. Long-term lifting or work conditions in which improper posture is used, Injuries and fractures may also become a cause of CLBP. Herniated disc or disc slip, including other degenerative spine or joint diseases, like spinal stenosis (narrowed space between nerves and spinal cord). Surgeries of spine and the process of child birth may gradually or suddenly lead to chronic low back pain (Jasmin, 2014). Besides biological causes, psychological correlates also contribute in the sensation of pain. Major factors that contribute in pain sensation and severity are as follow.

1.1 Cognitive Distortions

Cognitive distortions are inaccurate and negative way of thinking (Stanborough, 2019). Cognitive distortions a person experiences during real or imaginal experience of pain consists of pain catastrophizing (Sullivan, *et al*., 2001). According to Stannard *et al* (2010) catastrophizing is not only uncontrolled fear of disaster. Some studies found out the role of pain catastrophizing in disability, along with the fear of pain. Humans' pain perceptions involve the activation of some emotions as a consequence of pain, like fear.

1.2 Pain Related Fear

Pain related fear is a psychopathological problem, in which people indulge themselves in using the cognitive bias of catastrophizing. According to fear avoidance model, those who uses catastrophizing become trapped in a vicious cycle of avoidance behavior which leads to disability. However, avoidance is not always associated with disability and vicious cycle but it is also a common response to pain in LBP. When a person is told that their back is vulnerable, require care and is degenerating, then avoidance become natural phenomena to protect themselves and to take care of their body. While the fear-avoidance model proposes that when someone first develops low back pain, engagement in normal activity in the absence of catastrophizing leads to recovery, but those who engages in catastrophizing shows less clear recovery pattern. (Bunzali *et al*., 2017). *Riva et al.,* (2014) explains that the combination of social fear and physical risk the perception of social distress and physical pain. Swinkles *et al*., (2006) described that fear of pain is predictor of physical assignment and both fear of pain and pain catastrophizing are vital aspect affecting the daily activities in person's life, suffering from acute LBP.

1.3 Hyper-Vigilance

Persistent fear of pain results in safety seeking behaviors which might develop into long term back

pain problems and these safety seeking behaviors include activity avoidance and "hypervigilance" bodily sensations (Crombez, *et al*., 2012 as cited in Clauwaert, 2020). Hypervigilance simply means sate of increased alertness (Gotter, 2018). Patient with chronic pain tends to be more alert and give more attention to their pin, thus hypervigilance occurs in chronic LBP patients (Lautenbacher, 2009). Catastrophizing and vigilance are found to be associated with increased pain and physical and psychosocial dysfunction (Sullivan, 2001).

1.4 Psychological Distress

Prevalence of psychological symptoms/conditions (anxiety and low mood) is higher in individuals with chronic pain as compared to general population (Pope, *et al*., 2015). Their relationship between pain and mood symptoms have complex theoretical underpinnings (Hooten, 2016; Stubbs, *et al*., 2016). The presence of mood and anxiety related symptoms with CLBP is associated with lower levels of functioning, poorer adherence to medication, and non-compliance towards therapy. Furthermore, pain duration and severity have been associated with worse course of depressive and anxiety disorders (Rayner, *et al*., 2016; Trompetter *et al*., 2016). Experiencing low back pain is a common phenomenon but when it is coupled with cognitive distortions, it made the person more vigilant towards their pain experience and results in distress which further leads to more aversive and distressing experience of pain. So, it can be assumed that with the high prevalence of LBP in our society, this current research will contribute in the existing literature and create awareness regarding the psychological factors that leads the person towards intensive pain experiences and ultimately becoming distressed.

2. Hypotheses

In the present research, the following hypotheses were formulated:

- There is likely to be a significant relationship in cognitive distortions, pain related fear, hyper-vigilance and psychological distress in patients with chronic LBP.
- Cognitive distortions, fear related to pain and hyper-vigilance are likely to predict psychological distress, in patients with chronic LBP.

3. Material and Methods

3.1 Research Design

Correlation research design was used in the current study.

3.2 Sampling Strategy

A sample of 100 participants (N=100) was selected for data collection, through purposive sampling strategy.

3.3 Participants' Characteristics

The sample comprised of the men (M=38.95, SD=12.55) and women (M= 40.03, SD=10.77) experiencing chronic low back pain from the emergency and out-patient departments (OPD) of orthopedic from the government hospitals, i.e., Sheikh Zayed hospital (n=26), Jinnah hospital (n=57) and Sir Ganga Ram hospital(n=10) and private clinics (n=7). Only those participants were included who were experiencing LBP at least from 3 months. Participants excluded were those having any other physical disease, who were experiencing

any psychological disorder, such as depression, who have history of alcohol or drug abuse (See Table 3).

3.4 Assessment Measures

The following assessment measures were used in the current study:

3.4.1 Demographic Information Questionnaire

Demographic information questionnaire was prepared by researcher which included various socio demographical characteristics (i.e., gender, age, level of education), number of siblings, nature of relationship with parents, spouse, siblings, subjective rating of physical and psychological health, use of drug or alcohol, and questions related to the current and preceding back pain episodes (i.e., onset, and duration).

3.4.2 The Pain Catastrophizing Scale (Sullivan, 2009)

The Pain Catastrophizing Scale was used after Urdu translation by the researcher. This is a self-report measure used to evaluate catastrophic thoughts or feelings accompanying the experience of pain, with thirteen items. This questionnaire is based on 5-point scale ranging from 0 (Not at all) to 4 (All the time). It has been found to be reliable (α = .95) with test–retest reliability of .70 measured after two to three months (Sullivan *et al*., 1995). Scoring is done by taking the sum of scores on 13 items of Pain Catastrophizing Scale (PCS) with sub-scales of Rumination, Magnification and Helplessness which are respectively sum of 8-11 items, 6, 7 and 13 items and 1-5 and 12 items on PCS (Sullivan, 2009). It has good internal consistency of .92 (Wheeler, William and Morley, 2019). Overall reliability of PCS in current study is α= .89; rumination, magnificence and helplessness have alpha coefficient of .63, .75, and +.80 respectively.

3.4.3 The Fear of Pain Questionnaire-III (McNeil, 2006)

The Fear of Pain Questionnaire-III was used after Urdu translation by the researcher. This is a 30-item self-report measure of fear of pain. A Likert scale for response categories which range from 1 (Not at all) to 5 (Extreme) is used. The FPQ-III consists of three subscales measuring fear of severe pain, fear of minor pain and fear of medical Pain. FPQ-III had excellent internal consistency (a = .92), adequate test–retest reliability .74 after the period of three weeks and good construct validity (McNeil & Rainwater, 1998). It is operationally defined as the sum of scores on 30 items of Fear of Pain Questionnaire (FPQ-III). The sub-scales are scored by summing up the items 3, 5 & 7, 1, 6 & 9, and 2, 4 & 8 respectively (McNeil, 2006). The internal consistency of the FPQ-III subscales ranges from 0.82 to 0.85 (Vambheim, *et al*., 2017). Reliability of FPQ-III in current study is .92 whereas minor pain has α=.78, severe pain has α =.85 and medical pain has α =.90.

3.4.4 The Pain Vigilance and Awareness Questionnaire (Roelofs, Peters, McCracken & Vlaeyen, 2003)

The Pain Vigilance and Awareness Questionnaire (PVAQ) was applied after Urdu translation by the researcher. It comprises of 16 items, which measure attention to pain on Likert scale which ranges from 0 (Never) to 5 (Always). Findings (McCracken, 1997) gave internal consistency, test–retest reliability, and construct validity. Moreover, confirmation for divergent and convergent validity

was obtained (Roelofs, 2002). Report for exceptional internal consistency (α = .92) are found for this version of the questionnaire (McCracken, 1997). For assessing the vigilance part of the measure, scores are summed up for 6, 10 and 12-15 items, while assessment of pain awareness is done by the sum of scores on 1, 3, 4, 5, 7, 9 and 11 items of PVAQ (Roelofs, Peters, McCracken & Vlaeyen, 2003). Its Chronbach;s alpha ranges from .84-.90 (Kunz *et al*., 2017). Reliability coefficient in the current study is .84.

3.4.5 Psychological Distress Scale (Kessler, Barker, Colpe, Epstein, Gfroerer, Hiripi, *et al*., 2003)

Psychological Distress Scale (K 10) was developed by Kessler, Andrews & Colpe in 2002 and was translated in Urdu by Khawar & Yousaf (2013), to measure psychological distress in patients. This is a 10-item questionnaire proposed to capitulate, a universal gauge of distress based on questions about apprehension and symptoms of depression which a person has practiced in the time period of mainly recent month. The reliability analysis revealed that its moderately reliable tool to assess psychological distress. It is operationally defined as the sum of 10 items on the Kessler Psychological Distress Scale **(**Kessler, *et al*., 2003). Its internal consistency is α= .91 and its inter-item correlation ranges from .35-.66 (Pereira *et al*., 2019).

4. Procedure

The study was approved from University Research Committee as a funded project. The first step of the study was to take permission from the respective authors of the assessment measures, used in the study and the Fear of Pain Questionnaire and the Pain Vigilance and Awareness Questionnaire, were used after translation in Urdu, by following the MAPI guidelines. Before starting the process of data collection, permission was taken from the authorities at government hospitals (Sheikh Zayed hospital, Jinnah hospital and Sir Ganga Ram hospital) and private clinics. Five participants were selected for the pilot study. Written consent was taken from the participants and purpose of the study was explained. The questionnaire was refined after the information obtained from the pilot study. Sequence of the measures was also altered considering the fatigue factor while piloting. After the pilot study, main study was started and the participants were approached personally. Each participant was made clear about the objective of the study. Instructions were delivered in written form as well as described orally. Complete confidentiality was promised and participants were given the right of withdrawal at any point of the study. Written consent form was signed or thumb impression was taken from the illiterate participants before administration. Participants were requested to respond all the items in the questionnaire. Only willing participants were included in the study. Any participant, who wanted to discontinue the administration, was allowed to leave without any penalty. Total of 206 participants were approached from which 14 participants refused to take. Complete process of data collection was carried out in five months.

5. Ethical Considerations

Prior conducting the research, permission for using the assessment measures was taken from the

original authors and from those who translated tools in Urdu, through a standard procedure.

1. Written acquiescence was taken from the relevant hospitals.
2. Participants were provided with the participant's information sheet which covered rationale and objectives of the study, number of questionnaires and total time taken and requirement of participation.
3. Written consent was received from each participant and they were given the right to withdraw from participation and terminate it at any time during the administration.
4. The participants were ensured that the information provided would be held confidential and would not be used for any purpose other than the research. Data obtained from participants was entered into the soft file for analyses and only researcher and assistant researcher had an access to it.

6. Results

Pearson product moment correlation analysis was applied and demographic variables (gender, age, education, family income, family history, satisfaction with treatment) (see Table 1 & 2) along with study variables (pain catastrophizing, fear of pain, pain vigilance and pain awareness and psychological distress) (see Table 3) were entered in the correlation analysis.

Table 1: Descriptive Statistics of the Continuous Demographic Variables (N=100)

	Men (n=22)		Women (n=78)	
Variables	*M*	*SD*	*M*	*SD*
Age (in years)	38.95	12.55	40.03	10.77
Family members	7	3.12	8	3.86
Income (PKR)	21159	17249.84	1871.8	7834.92
Family income (PKR)	35318	24353.32	22808	14931.93
Diagnosis (in months)	38.05	46.98	66.23	65.33
Pain duration (in hours)	12.23	20.83	17.91	28.77
Gap between two attacks of pain (in hours)	23.36	21.40	47.44	105.59

Table 2: Descriptive Statistics of the Categorical Demographic Variables (N=100)

Variables	*F*	%
Education	100	100
Primary	37	37
Matriculation	33	33

Intermediate	14	14
Bachelors	12	12
Masters	4	4
Occupation	100	100
Government job	5	5
Private job	18	18
Private business	6	6
House hold	71	71
Marital Status	100	100
Single	10	10
Married	85	85
Divorced	1	1
Deceased partner	4	4
Family System	100	100
Nuclear	46	46
Joint	54	54
Family History of Pain	100	100
Yes	36	36

Table 3: Descriptive Statistics Related to the Disease (N=100)

Variables	Men (n=22)		Women (n=78)	
	f	*%*	*f*	*%*
Pain Severity				
Mild	0	0	6	7.7
Moderate	6	27.3	18	23.1
Severe	7	31.8	21	26.9
Extreme	9	40.9	33	42.3
Disturbance in Daily Life				

Not at all	1	4.5	0	0
Very little	2	9.1	5	6.4
To some extent	3	13.6	8	10.3
Moderate	4	18.2	16	20.5
To much extent	8	36.4	27	34.5
Extreme	4	18.2	22	28.2

Table 4: Summary of Inter-Correlations among the Demographics, Pain Catastrophizing, Hypervigilance, Fear of Pain and Psychological Distress (N=100)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	*M*	*SD*
1. Gender	-	.04	-.25*	-.29**	.00	.08	.15	.17	.08	.15	.34**	.26**	.30**	.31**	.09	.02	.09		
2. Age	-	-	-.04	.24*	.18	.15	-.08	-.17	-.03	-.04	-.14	-.03	-.15	-.15	.15	-.06	.04	39.79	11.13
3. Edu	-	-	-	.29**	-.15	.08	-.20*	-.22*	-.05	-.23*	-.24*	-.16	-.21*	-.23*	-.22*	-.25*	-.11	7.43	5.35
4.FamInc	-	-	-	-	-.09	.20*	-.06	-.04	.07	-.13	-.03	-.01	-.11	.03	-.15	-.13	-.09	25560	18065.16
5. FaHis	-	-	-	-	-	.10	.09	.07	.03	.11	-.07	-.05	.02	-.13	.13	.10	.06		
6. Sat	-	-	-	-	-	-	.19	.11	.25*	.17	.06	.05	.13	-.00	.05	-.03	.19		
7. PCS	-	-	-	-	-	-	-	.84**	.86**	.94**	.37**	.32**	.39**	.25*	.37**	.51**	.63**	23.01	10.23
8. Rum	-	-	-	-	-	-	-	-	.61**	.71**	.33**	.25*	.32**	.27**	.44**	.57**	.46**	9.08	3.02
9. Mag	-	-	-	-	-	-	-	-	-	.73**	.34**	.33**	.33**	.22*	.17	.32**	.57**	4.62	3.22
10. Hel	-	-	-	-	-	-	-	-	-	-	.33**	.28**	.37**	.21*	.36**	.47**	.61**	9.31	5.19
11. FoP	-	-	-	-	-	-	-	-	-	-	-	.83**	.84**	.89**	.22*	.19	.25*	78.12	18.62
12. Min	-	-	-	-	-	-	-	-	-	-	-	-	.56**	.67**	.13	.22*	.28**	19.82	5.35
13. Sev	-	-	-	-	-	-	-	-	-	-	-	-	-	.56**	.28**	.11	.25*	31.67	7.70
14. Med	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.18	.15	26.63	8.69
15. Awa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.58**	.28**	25.30	6.19
16. Vig	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.40**	15.61	6.27
17. PDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.20	7.59

Note. Edu= Education, FamInc= Family Income, FaHis= Family History, Sat= Satisfaction with treatment, PCS= Pain Catastrophising scale, Rum= Rumination, Mag= Magnification, Hel= Helplessness, FoP= Fear of Pain, Min= Minor Pain, Sev= Severe Pain, Med= Medical Pain, Awa= Awareness, Vig= Vigilance and PDS= Psychological Distress Scale. **p<.01, *p<.0

The results are presented in the table 4.Results of the table 4 revealed that women are experiencing more fear of pain as compare to men. Education was significantly negatively related to the pain catastrophizing, rumination and helplessness. Similarly, education showed significant negative relationship with fear of pain and its types like fear of severe and medical pain, as well as awareness and vigilance. Satisfaction with treatment showed significant positive relationship with cognitive distortion i.e., magnification. Moreover, rumination, magnification and helplessness are positively significantly related to pain related fear at all the three levels of pain, i.e., minor, severe and medical pain. Pain catastrophizing was also positively significantly related to pain vigilance and awareness, and psychological distress. Fear of pain is positively related to the pain awareness and psychological distress. Fear of minor pain is positively significantly related to pain vigilance and psychological distress. Fear of severe pain is significantly positively related to pain awareness. Pain awareness and vigilance showed significant positive relationship with psychological distress. It was hypothesized that cognitive distortions, fear related to pain and hyper-vigilance are likely to predict psychological distress in patients with chronic low back pain. For verifying this

hypothesis, linear regression analysis was applied in two ways, i.e., multiple hierarchical regression and step-wise multiple regression analysis to assess the predictors of psychological distress. In multiple hierarchical regression, demographic variables (age, family income and pain duration) were entered in the first block as covariate. In the second block rumination, magnification and helplessness, pain awareness and pain vigilance, and level of pain minor, severe and medical pain were entered as predictors. Results of this regression analysis revealed no significant predictor from the demographics but from the study variables. To examine the predictors of psychological distress, rumination, magnification and helplessness, pain awareness and pain vigilance, level of fear of pain (minor, severe and medical pain) were entered and multiple hierarchical regression was run on the data. Results are presented in the table 5. The overall variance of predictors observed for psychological distress is 44%, F (1, 98) = 8.75, $p \leq .00$. Helplessness, magnification and vigilance significantly positively predicted psychological distress.

Table 5: Summary of Multiple Hierarchical Regression Analysis for Variables Predicting Psychological Distress

Model	β	95% CI		R^2	F	ΔR^2	ΔF
		LL	UL				
Rumination	-.02	-.69	.58				
Helplessness	.22*	-.14	.76				
Magnificence	.32*	.08	1.43				
Fear of severe pain	.01	-.69	.73	.44	8.76***	.44	8.75***
Fear of minor pain	.13	-.27	.96				
Fear of medical pain	.002	-.70	.71				
Vigilance	.19*	-.03	.49				
Pain awareness	.02	-.22	.28				

Note. N=100, ΔR^2 = R square change, ΔF = F change, CI = confidence interval
*** p<.001, *p<.05

7. Discussion

Sample of 100 participants, was taken from the emergency and out-patient departments (OPD) of orthopedic from the government hospitals private clinics. Results indicated that pain catastrophizing was significantly positively related to pain related fear at all the three levels of pain, pain vigilance and awareness, and psychological distress. Fear of pain revealed positive relationship with pain awareness and psychological distress. Pain awareness and vigilance showed significant positive relationship with psychological distress. In this context, previous literature supports the findings, as Wiech (2016) documented cognitive factors i.e., attention, anticipation, catastrophizing, appraisal of pain and control over pain influence the experience of pain. Pain catastrophizing also showed positive significant relationship with vigilance and awareness of pain and psychological distress. Pain catastrophizing is associated intensity of pain experienced, depression, anxiety, and higher chance of disability (Schutze, *et al*., 2018). Increased use of

cognitive distortions increase the sensitivity of pain, and the patients get hyper-vigilant of their experience. This hyper-vigilance produces a state of tension resulting in emotional and psychological distress among the patients with chronic low back pain. Another study indicated that pain catastrophizing was associated with activation of brain areas which are involved in emotional and motor response to pain, pain vigilance, and top-down inhibitory control (Palacios, *et al*., 2017). Findings suggested that fear of pain had positive relationships with the pain awareness, pain vigilance and psychological distress. Shigetoh (2017) explained hypervigilance as an important aspect of fear avoidance model. Fear Avoidance Model (FAM) suggested that individuals who explains their pain in catastrophic manner, started fearing movements' related activities (BIM, 2014). Furthermore, pain awareness and vigilance showed significant positive relationship with psychological distress. Another study reported that higher pain experience and hypervigilance is co-related with difficulty to describe feelings and emotional distress which in turns is related to lower sleep quality, high anxiety and depression and pain catastrophizing (Martinez, *et al*., 2015).

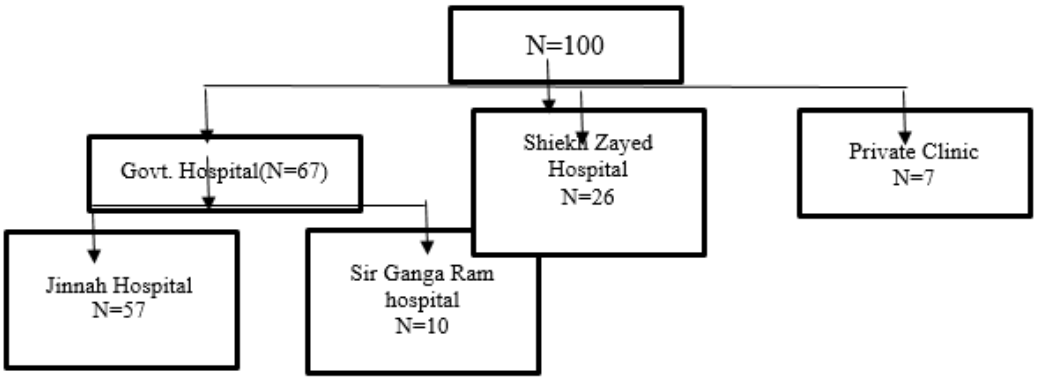

Figure 1: Flow chart of Data Collection

Education was significantly negatively related to the pain catastrophizing (rumination and helplessness), fear of pain (severe and medical pain) and awareness and vigilance. Indicating that participants with higher education were more aware of their physical condition and instead of making faulty thinking patterns about their pain, they were more focused with its management and treatment strategies. Likewise, family income showed positive relationship with satisfaction of treatment which signifies that patient with better economic conditions would be able to have better treatment facilities, and their satisfaction with treatment would also enhance. Most of the sample in present research belonged to low socio-economic status, which used to find it difficult to treat their disease with their limited budget. Different results were found for satisfaction with treatment that showed significant positive relationship with cognitive distortion (magnification), which highlighted that though patients were satisfied with their treatment; they still used to magnify their physical condition of pain. It was also observed by the researcher during the process of data collection, that patients used to claim that their back pain was never going to be cured completely, but still it was reduced through

medications, therefore, they were satisfied with their treatment. In order to assess the predicting role of variables for psychological distress, it was hypothesized that cognitive distortions, fear related to pain and hyper-vigilance would likely to predict psychological distress in chronic pain patients of low back. Another study showed that helplessness and magnification emerged as the predictors of psychological distress. Pain catastrophizing and distress intolerance are related factors; however, they exhibit distinct associations with amplification of pain and psychosocial stress reactivity (McHugh, *et al*., 2019).

Figure 2*:* Hypothesized Model determining Relationships in Variables

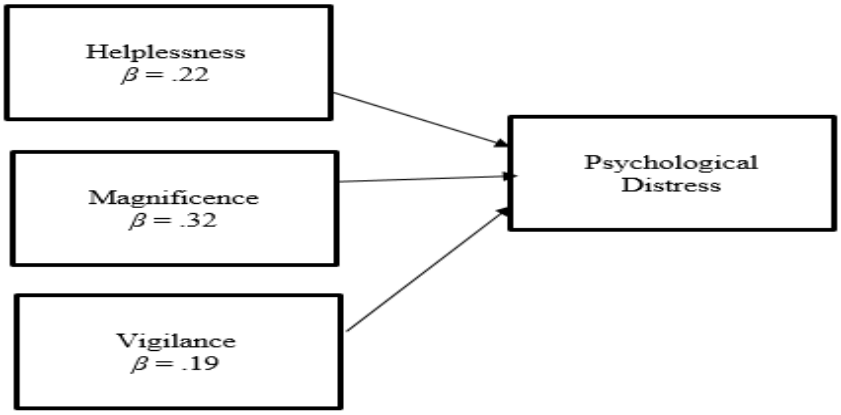

Figure 3*:* Emerged Model of Regression Analysis

Pain catastrophizing, pain related fear and hypervigilance were found out as significant predictors of psychological distress in chronic low-back patients. Demographic variables such as, subjective rating of pain severity, duration of pain episodes was also found out to be significant predictors of distress. Literature also suggested some other variables like education, gender and SES status as conforming variables to psychological distress in low-back pain patients.

8. Conclusion

Present study investigated the role which cognitions play in relation to catastrophizing the pain, pain related fear and hyper-vigilance associated with chronic low back pain resulting in psychological distress in individuals. Predicting role of rumination and helplessness was observed for psychological distress. Correlations of cognitive distortions, pain related fear and hyper-vigilance were found with psychological distress.

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