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Trauma antecedents alexithymia and quality of life in persons with primary and secondary chronic pain

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Abstract

Background: Chronic pain, one of the leading causes of suffering and disability worldwide, is becoming an important field in medical as well as behavioural sciences. A variety of chronic pain syndromes lie on the spectrum of medically unexplained syndromes, causing dysfunction and reduced quality of care. Because of its multi-faceted nature, involving physiological, psychological and social factors, chronic pain warrants extensive research to understand and guide comprehensive interventions.

Materials and Methods: A cross sectional, exploratory, comparison group research design was employed. Sixty participants were recruited through invitation on social media platforms as well as from the pain clinic in a tertiary care hospital of North India, which were allocated to the primary chronic pain (n=30) and secondary chronic pain (n=30) groups as per the inclusion/ exclusion criteria. Telephonic interview was conducted with the consenting participants and Trauma antecedent's questionnaire, Toronto alexithymia scale (Hindi) and Short Form-36 were administered with eligible participants in both the groups.

Results: Significant differences were found in the two groups on age, marital status, and number of pain locations, reporting of fatigue, lack of freshness after sleep and depressed mood/irritability. Results revealed significant differences on measures of trauma antecedents, alexithymia and quality of life between primary chronic pain group and secondary chronic pain group ($p < 0.05$).

Conclusions: Primary chronic group showed higher levels of trauma exposure, emotional regulation as well as lower quality of life as compared to secondary chronic pain group.

Keywords: chronic pain, fibromyalgia, trauma, alexithymia, quality of life

Introduction

Chronic pain is a global health problem as well as a human rights issue and contributes alarmingly to disability, suffering, health resources and absenteeism worldwide. Prevalence rates over the world range from 20.4% to 39 %with rates in developing countries estimated to be 30.3% [1, 2]. Chronic pain is "pain that persists past normal healing time and hence lacks the acute warning function of physiological nociception" [3]. Recent developments by the International Classification of Disorders (ICD)-11 involves an attempt to classify chronic pain into primary and secondary chronic pain on the basis of etiological mechanisms. Primary chronic pain encompasses etiologically obscure, "nonspecific, somatoform or functional" disorders where pain is the primary problem which cannot be explained by other diagnoses and includes fibromyalgia, chronic widespread pain, irritable bowel syndrome, complex regional pain syndrome etc [4]. In contrast, secondary chronic pain is conceived as a symptom secondary to an underlying disease, involving cancer-related pain, postsurgical or posttraumatic pain, neuropathic pain, among others [3]. Pain is more comprehensively conceptualized as a biopsychosocial phenomenon and has important psychosocial correlates such as depression, anxiety, emotional distress, somatization, trauma, anger/hostility, self-esteem, general emotional functioning as well as alexithymia [5, 7]. Recent research on trauma has established empirical associations between trauma and pain [8] wherein it contributes to its occurrence and maintenance through sustained endocrine responses, wear and tear of the autonomic nervous system or sensitivity in pain receptors [9]. Further, the role of Alexithymia involving difficult describing, identifying and differentiating feelings has been implicated in trauma [10] as well as somatization disorders[11], where it can be a risk factor for future pain, through misidentification of physiology of emotion and inhibition of emotional expression leading to somatic states. Since pain is a multi-dimensional phenomenon, encompassing physical, affective, sensory, emotional, psychological as well as cognitive elements, it's impact on the quality of life becomes as broad and widespread and has an adverse impact [12]. Previous research on chronic pain has limited itself to specific conditions, gender, prevalence rates or socio-demographic variables and studies based on holistic conceptualizations of pain are sparse. Additionally, there is scant research on chronic pain in India despite increased prevalence rates. So, the more research are required to fill these lacunae and looks at different pain conditions together,

which is in line with the latest classification system. Comparison of the two pain conditions as primary and secondary chronic pain on various significant traumatic experiences which may refine our knowledge of poorly understood mechanisms that underlie pain. Therefore, present study aims to explore and compare trauma antecedents, alexithymia and quality of life between primary and secondary chronic pain groups and to understand the associations with the primary and secondary chronic pain conditions.

Materials and methods

An exploratory, cross-sectional and comparative group's research design was employed in the present study. The research was carried out at Pain and Palliative Care Clinic under department of Anaesthesia and Intensive Care, of a tertiary care hospital in North India. Participants were recruited from the Pain Clinic as well as from chronic pain support groups across India through online invitation on social media platforms. A total number of 144 individuals were screened in which 12 participants were screened in the pain clinic. Further 134 participants, who responded to the invitation online, out of which 84 responded for the interview and were contacted telephonically to elicit a detailed pain history along with diagnosis, symptom checklist following which a Google form link for tools/questionnaires was sent. Participants fulfilling the inclusion criteria as persisting pain for more than 3 months, age between 20-55 years with an education level of 10^{th} and above were included. Individuals diagnosed as major psychiatric disorders (psychosis, bipolar affective disorder, obsessive-compulsive disorder and attention hyperactivity disorder), having co-morbid untreated medical conditions and chronic headaches/migraine were excluded. The recruitment process continued till the time the researcher obtained consent of the 60 participants in total as per inclusion criteria for both the groups separately. Thirty participants in each group were allocated to primary chronic pain (PCP) and secondary chronic pain (SCP) groups. The grouping was done on the basis of diagnosis received by a medical professional as per the history reported by the participants and their aetiology as per IASP criteria for ICD-11. [4] A semi-structured socio-demographic and clinical interview was used for collecting the socio-demographic profile and relevant pain history and diagnosis.

Trauma Antecedents Questionnaire (TAQ) [13] was used to assess past traumatic experiences, Toronto Alexithymia Scale- 20 (Hindi) (TAS-20-H) [14] was used to measure the degree of alexithymia and Short Form (SF)- 36 [15] was administered to assess health related quality of life across domains. Obtained data was analysed statistically on SPSS, version 26.0. Chi-square tests were used to compare groups on socio-demographic and clinical variables. Independent t-tests were used for comparison between the two groups on all variables and their subscales.

Results

In PCP group 53.3% participants had a diagnosis of fibromyalgia, 16.6% had no diagnosis, 10% had irritable bowel syndrome, 6.6% had myofascial pain syndrome and 3.3% had chronic pain syndrome, 3.3% had connective tissue disorder, 3.3% had temporomandibular joint syndrome and 3.3% had complex regional pain syndrome. In SCP group, 16.6% participants had a diagnosis of arthritis and post injury/post-surgical pain respectively followed by disc problems and endometriosis with 13.3% each. Spinal problems, degenerative diseases and autoimmune diseases formed 10% each of conditions and conditions comprised ligament tears, lipoma and lumbar problems had 3.3% each.

The mean age obtained was 28.57±5.15 years in PCP group and 35±7.99 years in SCP group (Table 1). In the PCP group, 30% were males, 56.7% were females and non-binary individuals were 13.3%. In the SCP group, 23.3% were male and 76.7% were females. As presented in Table 1, there were no statistically significant differences on socio-demographic variables in the two groups apart from age and marital status ($p<0.05$). Further, the two groups differed significantly on clinical variables such as number of pain locations, fatigue, lack of freshness after sleep and depressed mood/irritability (Table 2).

Comparative analysis of Trauma antecedents, Alexithymia and Quality of life total scores indicates statistically significant difference at $p<0.05$ between the PCP and SCP groups. Significant difference were found on neglect ($p<0.001$) and emotional abuse ($p<0.05$) between the groups. Statistically significant difference observed on difficulty differentiating feelings at $p<0.01$ between the groups. Finally, significant difference were found on energy/fatigue ($p<0.05$), emotional wellbeing ($p<0.01$) and general health ($p<.0.05$) domains of quality of life between the groups (Table 3).

Table 1: Socio-demographic details of PCP and SCP groups.

Variables	PCP n=30 f (%)	SCP n=30 f (%)	Ch Square	Sig.
Gender				
Male	9 (30)	7 (23.3)	5.150	0.076
Female	17 (56.7)	23 (76.7)		
Non-Binary	4 (13.3)	None		
Education				
Graduate	16 (53.3)	12 (40)	3.771	0.287
Post-Graduation	10(33.3)	15 (50)		
M. Phil	2 (6.7)	None		
Doctoral	2 (6.7)	3 (10)		
Socio-Economic Status (SES)				
Lower SES	2 (6.7)	1 (3.3)	1.305	0.728
Middle SES	14 (46.7)	12 (40)		
Upper Middle SES	10 (33.3)	10 (33.3)		
Upper SES	4 (13.3)	7 (23.3)		
Occupation				

Student	8 (26.7)	4 (13.3)			1.753	.418
Unemployed	2 (6.7)	3 (10)				
Working Professional	20(66.7)	23 (76.7)				
Domicile						
Metropolitan	15 (50)	17 (56.7)			.307	.858
Urban	12 (40)	10 (33.3)				
Semi-Urban	3 (10)	3 (10)				
Marital Status						
Unmarried	25 (83.3)	17(56.7)			7.257*	0.027
Married	3 (10)	12 (40)				
Divorced/Separated	2 (6.7)	1 (3.3)				
Family Type						
Nuclear	27 (90)	27 (90)			0.000	1.000
Joint	3 (10)	3 (10)				
Age	Mean	SD	Mean	S		
	28.57	5.15	35	7.99	t= 3.706**	0.000

Level of Significance **p<0.01, *p<0.05

PCP= Primary chronic pain, SCP=Secondary chronic pain, SD= Standard deviation, SES=Socio-economic status Sig.= Significance, f= frequency, %=percentage, M = Mean,

Table 2: Chi Square tests for clinical variables

Variables	**Frequency**		**Chi-Sq.**	**Sig.**
	PCP (n=30)	**SCP (n=30)**		
Duration				
4-6 Months	0	1	1.11	.574
6 Months to 2 years	5	4		
More than 2 years	25	25		
Pain Frequency in a Week				
Always	22	17	5.102	.277
Most of the time	3	4		
Sometimes	4	2		
Occasionally	1	5		
Rarely	0	2		
Pain Frequency Monthly				
Always	18	17		
Most of the time	7	5	.688	.876
Sometimes	2	3		
Occasionally	3	4		
Rarely	0	0		
Pain Frequency Monthly				
Always	18	17		
Most of the time	7	5	.688	.876
Sometimes	2	3		
Occasionally	3	4		
Rarely	0	0		
Intensity/Severity				
Mild	4	6		
Moderate	6	13	5.640	.130
Severe	17	9		
Very severe	3	2		
Locations				
Single	6	8		
More than 1 to 3	1	8	7.919	0.019*
More than 3	23	14		
Course				
Intermittent	6	12	2.857	0.091
Persistent	24	18		
Number of medical professionals consulted				
1-2	2	6		
3-5	9	13	4.861	0.088
More than 5	19	11		
Symptom Checklist				
Fatigue				
Present	28	19	5.963	0.015*
Absent	2	11		
Lack of freshness after				

Sleep			7.177	0.007**
Present	24	14		
Absent	6	16		
Depressed Mood/Irritability				
Present	24	15	5.934	0.015*
Absent	6	15		

Level of Significance **p<0.01, *p<0.05 Sig. = Significance

Table 3: Comparison of trauma antecedents, alexithymia and quality of life between both groups

Variables	Groups	Mean (SD)	t	Sig. (2-tailed)
Trauma Antecedents Questionnaire	PCP (n=30)	13.64 (8.13)	2.305	.025*
	SCP(n=30)	9.31(6.31)		
Alexithymia	PCP (n=30)	56.26 (11.54)	2.235	.029*
	SCP (n=30)	49.66 (11.32)		
Quality of Life	PCP (n=30)	37.36 (15.84)	-2.079	.042*
	SCP (n=30)	46.33 (17.55)		
Competence	PCP (n=30)	7.33 (2.68)	-1.739	.087
	SCP (n=30)	8.73 (3.50)		
Safety	PCP(n=30)	5.96 (2.92)	-1.991	.051
	SCP (n=30)	7.46 (2.92)		
Neglect	PCP (n=30)	2.23 (1.62)	2.840	.006**
	SCP (n=30)	1.17 (1.24)		
Separation	PCP(n=30)	2.15 (1.56)	.454	.651
	SCP (n=30)	1.96 (1.67)		
Emotional Abuse	PCP(n=30)	3.07 (2.58)	2.195	.032*
	SCP (n=30)	1.81(1.79)		
Physical Abuse	PCP (n=30)	.75(.97)	1.497	.140
	SCP (n=30)	.41 (.78)		
Sexual Abuse	PCP (n=30)	.89 (1.41)	1.674	.099
	SCP (n=30)	.40 (.71)		
Witnessing	PCP (n=30)	1.71(1.64)	1.155	.253
	SCP (n=30)	1.25 (1.45)		
Other Trauma	PCP (n=30)	1.69 (1.34)	1.426	.159
	SCP (n=30)	1.24 (1.07)		
Alcohol/Drugs	PCP (n=30)	1.11(2.50)	.140	.889
	SCP (n=30)	1.03 (2.08)		
DIF	PCP (n=30)	23.16 (6.16)	1.799	.077
	SCP (n=30)	20.20 (6.59)		
DDF	PCP (n=30)	15.50 (4.30)	3.046	.003**
	SCP (n=30)	12.10 (4.34)		
EOT	PCP (n=30)	17.60 (4.24)	.194	.847
	SCP (n=30)	17.36 (5.02)		
PF	PCP (n=30)	59.33 (25.21)	-1.212	.230
	SCP (n=30)	66.66 (21.50)		
RLPH	PCP (n=30)	20.0 (35.59)	.090	.928
	SCP (n=30)	19.16 (35.76)		
RLEH	PCP(n=30)	18.85 (29.90)	-1.086	.282
	SCP(n=30)	28.88 (40.80)		
E/F	PCP(n=30)	23.00(18.22)	-2.190	.033*
	SCP(n=30)	34.00 (20.61)		
EWB	PCP(n=30)	36.66 (18.52)	-2.768	.008**
	SCP(n=30)	50.93 (21.29)		
SF	PCP (n=30)	43.33 (24.72)	-1.718	.091
	SCP (n=30)	55.00 (27.77)		
PAIN	PCP (n=30)	40.66 (20.52)	-.547	.586
	SCP (n=30)	43.41 (18.34)		
GH	PCP (n=30)	25.83 (20.47)	-2.481	.016*
	SCP (n=30)	38.83 (20.11)		

Level of Significance **p<0.01, *p<0.05

PCP=Primary chronic pain, SCP=Secondary chronic pain, SD=Standard deviation, Sig.=Significance, DIF=Difficulty identifying feelings, DDF= Difficulty describing feelings, EOT=Externally oriented thinking, PF=Physical functioning, RLPH= Role limitations due to physical health, RLEH= Role limitations due to emotional health, E/F=Energy/Fatigue, EWB=Emotional well-being, SF=Social functioning, GH=General health

Discussion

The present study aim was to examine differences on trauma antecedents, alexithymia and health-related quality of life between individuals experiencing primary chronic pain with obscure aetiologies and secondary chronic pain resultant of another condition as per IASP classification of ICD-11.

Background characteristics of both the groups are presented in result table 1 which shows there was no significant difference found between genders, education, SES, occupation, domicile and family type except for the age and marital status between the groups. Mean age of the participants in the SCP group is higher than the PCP group also the higher number of participants in the SCP group are married. This may be due to that younger individuals are more on social media sites and they access the study information conveniently. It is likely that age is the important sociodemographic factor among PCP and is more easily identifiable among younger age group.

PCP group reported number of pain locations much higher than SCP group and it is statistically significant (Table 2). These findings are consistent with past literature comparing fibromyalgia to rheumatoid arthritis [16]. In the present study, the higher number of pain sites in PCP may be explained in the context of nonspecific, diffuse nature of aches and tenderness in different body sites as opposed to the SCP group, with relatively more well-defined pain localisation. The duration of pain, frequency weekly and monthly, intensity/ severity, course, number of medical professionals consulted was not significantly different between the groups.

Further, significant differences were found between PCP group and SCP group on clinical symptoms of fatigue, lack of freshness after sleep and depressed mood/irritability, which are in line with previous comparative research studies [17, 19].

In the analysis of traumatic antecedents (Table 3), t-test results revealed a significant difference, with PCP exhibiting higher intensity and frequency of trauma than SCP. These findings are consistent with past studies which show higher prevalence rates for all forms of victimization as well as greater severity of childhood trauma, higher traumatization, dissociation, childhood trauma incidents and childhood adversities in fibromyalgia [20, 22]. These findings are also corroborated by previous studies that have implicated the role of trauma in multiple other PCP conditions [23, 25]. Subscale analyses showed PCP having higher rates of neglect and emotional abuse (Table 3), which is substantiated by past research investigations where poor parental relationship, lack of physical affection, parental conflict, substance problems and neglect are reported [26, 28]. These findings can be contextualized under current discourse revolving around shared clinical pictures of pain, sensitization and their association with post traumatic disorders. PCP conditions are also sometimes conceptualised under ‘stress-related somatic syndromes’, where somatization is thought to be a putative defensive mechanism arising out of traumatic experience [29]. PCP group also shows lower scores on safety and competence, which is in line with research studies stating relative absence of positive emotional resources [30].

PCP group also shows significantly higher alexithymia and difficulty describing feeling scores than SCP group (Table 3), which is consistent with the findings of the past comparative studies [31, 33]. These findings can be understood within the nature of pain as well as higher trauma scores in PCP. Trauma (being a primary precursor of affective dysregulation) and the ‘somatization hypotheses of PCP disorders are increasingly associated with alexithymia.

PCP group scored significantly lower than the SCP group on quality of life (Table 3), where low scores indicate worse quality of life, which corroborate earlier studies indicating greater functional disability, negative impact and worst quality of life in fibromyalgia when compared to other pain conditions [34, 36]. PCP group showed lower energy, social functioning, emotional well-being as well as lower general health in comparison to the SCP group, which is in line with previous investigations [37, 39]. Some reasons for the same could be unpredictable symptom trajectories, fatigue, lack of well-established treatment modalities and reduced quality of care in PCP. Further, it is possible that being married may acts as a protective factor in the SCP and accounts for slightly better scores in quality of life (Table 3).

Conclusions

Based on the present study findings and discussion, it can be concluded that individuals suffering with primary chronic pain had experiences of greater intensity and frequency of traumatic antecedents, lack of emotional awareness or, more specifically, difficulty in identifying and describing feelings and in distinguishing feelings from the bodily sensations of emotional arousal and poor quality of life in comparison to the individuals suffering from secondary chronic pain conditions. Hence, in treatment of chronic pain, clinician importantly must include these evaluation and management of the chronic pain conditions in their practices. The resolution of the traumatic antecedents and lowering the Alexithymia among these individuals may significantly improve their quality of life.

Future Scope

Even though the study has recruited the participants through online invitation on social media platform, a large number of participants were telephonically interviewed and study criteria was strictly followed by the investigators before including them into the respective groups. Sharing of the traumatic antecedents is quite difficult for the people, but due cautions are exercised to ensure the confidentiality of the participants was ensured so they could share their experiences. This study has strength that a latest ICD-11 criterion was used to diagnose the PCP and SCP which is a latest classification. The well standardised tools for the traumatic antecedents, Alexithymia and health related quality of life tools were administered. The cross-sectional nature of the study may limit causal interpretations which needs further investigation longitudinally.

The study has implications in terms of adding empirical evidence to knowledge base for chronic pain. Practical implications include integrating these constructs into routine care and may pave way for more holistic treatment, resource

allocation and improved quality of care. Future research could study pain longitudinally with diverse comparative groups, moderating variables as well as phenomenological and qualitative methods.

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