Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v31i5.6312

INFLUENCING FACTOR OF SELF-CONCEALMENT AND ITS IMPACT ON QUALITY OF LIFE IN PATIENTS WITH RHEUMATOID ARTHRITIS

Uzma ILYAS[1*], Khurram AWAN[2], Amber BASEER[3], Muhammad Suleman SHAKOOR[4], Dr. Sidra AFZAL[5], DR. NEELOFAR REHMAN[6]

[1*]Principal Lecturer, Psychology Department, University of Central Punjab, Lahore
Email: ozma.ilyas@gmail.com, ORC ID: https://orcid.org/0000-0002-0739-8934
[2]Lecturer, Department of Psychology, Lahore Garrison University, DHA, Lahore
Email: khurramawan@lgu.edu.pk, ORC ID: https://orcid.org/0000-0002-3953-251X
[3]Lecturer, Psychology Department, University of Central Punjab, Lahore
Email ID: ambarbaseer79@gmail.com, ORC ID: https://orcid.org/0000-0001-7520-6116
[4]Bio-statistician, Pakistan Institute of Learning and Living, Lahore,
Email id: Suleman.shakoor@pill.org.pk
[5]Assistant Professor, University of Sunderland, UK, Email ID: sidra.afzal@sunderland.ac.uk
ORC ID: https://orcid.org/0009-0006-4720-5910
[6]Associate Professor, La Trobe University, Australia, Email: n.rehman@latrobe.edu.au , rneelofar@hotmail.com

***Corresponding Author:** Uzma ILYAS
[*]Principal Lecturer, Psychology Department, University of Central Punjab, Lahore
Email: ozma.ilyas@gmail.com, ORC ID: https://orcid.org/0000-0002-0739-8934

Abstract

Background: Rheumatoid arthritis (RA) is an autoimmune disease, in which patients suffer from chronic and excruciating pain. Pain is considered a factor that leads towards a compromised quality of life among sufferers. Considering the prevalent cases of RA, the current research explored the impact of self -concealment and social support on the quality of life of patients with RA.

Method: Cross-sectional research using correlational design was used in the present study. The research employed N=150 patients suffering from RA. The scales used in this research included the West Haven Multidimensional Pain Inventory Scale (WHYMPI-Kerns et al., 1985), Self-Concealment Scale (SCS-Larson & Chastain, 1990), Multidimensional Scale of Perceived Social Support (MSPSS-Zimet, 1988), and World Health Organization-Quality of Life-Brief **(**WHOQOL-BREF WHO, 2004). The analyses employed to compute results included descriptive statistics, Pearson product moment correlation, and linear regression performed using Statistical Package for Social Sciences (SPSS).

Results: Results showed a significant relationship between self-concealment, social support, and quality of life. Self-concealment had an inverse relationship with social support and quality of life. Social support significantly predicted pain among the RA patients with 21% of variance in pain.

Conclusion: The study concluded that social support is a protective factor against pain as evident presently. The findings are supported by the collectivistic culture of Pakistan that encourages social support and can have significant implications for the psychological management of chronic pain by encouraging and educating the social support resources available to patients of RA.

Keywords: *Pain, punishing, self-concealment, psychological well-being, social support, Rheumatoid Arthritis.*

Introduction

Rheumatoid Arthritis (RA) is defined as a long-term autoimmune disease that impacts the joints resulting in swelling, stiffness and intense discomfort. RA is a bewildering sickness that influences roughly 0.5% of the grown-up populace around the world. It occurs in 20–50 cases per 100,000 individuals yearly and is twice as common in women than in men (1). It affects around 1% of the world's total population (2).

RA affects not only physical but also mental aspects of life hence affecting the quality of life. In addition to this, the subsequent pain causes annoyance and a sense of losing control over one's life (3). Those who are less resourceful, withdraw even more which could result in societal limitations. These restrictions may significantly affect the lives of RA patients, for instance, impacting their social and professional lives because they are unable to accomplish their workload and fulfill their social obligations which also put constraints on other family members (4).

They report discomfort that keeps fluctuating all through the day and increases from month to month. In addition to the inflammatory and psychosocial elements of RA and typically severe exhaustion, pain is a critical element in RA outbreaks (5).

Patients with RA face morning stiffness caused by swollen joints, sensitive to pressure and heat during rest periods. It also affects patients' ability to walk and restricts their activities. On the other hand, a relaxing posture can cause rigidity of the diseased joints or overstretching of numerous other joints which would increase pain perception. Women reported feeling more pain than men did, even though different studies measured pain severity differently (6).

Chronic Pain

According to the International Association for the Study of Pain (ISAP), pain is an unpleasant tactile and enthusiastic sensation connected to real or probable tissue injury or portrayed as far as such harm. Pain can be categorized in numerous factors which as a tool can be used to assess pain. The three most popular types of pain are nociceptive, neuropathic, and inflammatory pain (7). Acute pain frequently manifests suddenly and is accompanied by worry or severe discomfort. In most cases, the source of acute pain can be determined and managed which is self-restricting. According to reports, chronic pain lasts longer than acute pain. It is described as discomfort that lasts longer than 90 days or the average recovery time of an illness or accident (8).

Assessment of pain is based on self-report as pain is an internal, emotional experience that is hidden from others. A few of the factors that affect pain and should be taken into consideration when assessing pain in individuals who have joint inflammation are natural maturation, mentalities, convictions, adaptability, assumptions, linked involvements, fear, mindset, presence and reaction of social support, and social environment (9).

The pain associated with RA is experienced suddenly, may be brought on by deliberately moving a joint that is functioning normally and may even be felt in the surrounding tissue that appears to be normal (10).

Chronic pain is one of the most frequently reported medical symptoms worldwide. It has a negative impact on sufferers' daily lives (11). Chronic pain is linked to serious emotional distress and practical disability (12). Teenagers are one of the most common groups of people who may have chronic pain. Chronic pain in children is widespread, debilitating, and expensive. Pain experienced throughout adolescence and puberty increases the vulnerability of developing chronic pain in the advancing years. Since, chronic pain is frequently reported among adolescents, and it has significant effects on their daily life. Additionally, chronic pain incurs substantial financial costs, making it crucial to identify the psycho-social factors related to pain in adolescents (13). Chronic pain is also an important risk factor for depression and hopelessness in RA patients. Patients with early RA who report severe pain are more likely to have notable incapacity one year later (14).

Biopsychosocial Model of Pain (15)

The biopsychosocial model communicates that desolation is presently not actually a neurophysiological wonder, at any rate additionally joins social and mental segments. It says that segments like culture, family, nociceptive lifts and ecological components influence torture appreciation and accordingly in the end influence an individual's sentiments, practices and insight. According to the biopsychosocial model of pain, several mental and social factors might influence the improvement of painful situations (16).

Self-Concealment

Self-concealment is defined as a tendency to cover up or conceal from others personal information that one finds upsetting or unfavorable. Many people try to keep their disagreeable thoughts, feelings and information to themselves private (17).

Self-concealment is estimated in high regard to chronic pain. People with chronic pain hide parts of their condition for different reasons. For instance; they may see their pain as the reason for disgrace and as a burden for close others. It is inferred that patients concealing pain would be associated with better pain efficacy and weaker prosperity. These practices make them feel more in control of the situations and their emotions to exert their autonomy and not be evaluated. By masking their disease and pain, the individual eradicates the chance of rejection by others leading to approval seeking and considering them to be successful (18).

According to the self-determination theory people possess three basic needs: Autonomy, competence, and relatedness essential for self-awareness and prosperity. Autonomy is defined as fully accepting one's activities and freely selecting them without being directed or under duress. Competence is defined as having a strong sense of self-assurance and, ideally, being put to the test, while relatedness is defined as having a strong sense of connection to others and a sense of belonging (19). Providing for these fundamental requirements is seen to be essential for personal achievement.

Self-concealment is linked to a slew of maladaptive patterns, including a reluctance to seek social assistance and a reduced level of contentment after receiving it (20). Evidence reveals that self-concealment is strongly linked to anxiety, unhappiness and real grumblings (21). It may have a detrimental impact on adolescent development and their physical and emotional well-being, but friendly awareness and life fulfillment can positively impact their lives and help prevent psychopathology. According to one theory, the tendency toward self-concealment is innate and inescapable, and those who demonstrate it more often are helpless in the face of undesirable mental effects. Self-concealment, according to another point of view, is linked to poor mental results in part because it involves inadequate mindset guidance and adaptation.

Social Support

Social support may be defined as a sense of being truly cared for by people and having aid available to them. Social supports may be found at several levels of society, including immediate relationships within families and among friends, as well as larger social institutions such as neighborhoods, networks, and nations. Expressive and instrumental social support may be provided during informal social interactions between families and companions, as well as through traditional organizations in schools, workplaces, and administrative offices dealing with government aid and criminal justice. Social support reduces the impact of stress by providing resources that enable individuals to adjust to adversity through noncriminal means (22).

Social organization and social support are thought to have an important role in evaluation of individuals' quality of life and promoting their well-being (23). In rheumatic illnesses, having a strong social support system is important for making commitments to physical and psychological well-being (24). Patients with RA want expert help due to factors such as useful calamities, joint pains, mishaps, self-perception unsettling impact, enthusiastic state aggravation, and addictions. Social assistance is required to obtain help from families of RA patients to identify the kind of support that the patients require and to adjust to the difficulties that the illness has brought about (25). The lower the negative mental state and stresses are, the higher the seeming social support is (26).

Social Provisional Theory *(27)*

According to Weiss' (1974) social provisions theory, social support is shown in terms of its ability, to be specific, social provisions. This standard considers the components of social relationships eventually of certain social positions (e.g., real accessory, mate, family members, allies, partners, and so on), typically when persons confront extraordinary circumstances. Weiss (1974) proposed that social relationships outfit social help and that certain social ties would fulfill individuals' unmistakable social support requirements or encourage people to provide social support.

Quality of life

The idea of quality of life goes beyond the idea of well-being and embraces a range of places, including ones that are physical, psychological, and environmental (28).

The psychological health category of Quality of Life includes all confidence, personal convictions, negative and positive emotions, as well as intellectual work. Our ability to function and adapt as well as how joyful and beneficial our lives are, are all influenced by our psychological health. Adler and Seligman (29) discuss the importance of psychological health as the human need to "prosper," stating that "thriving is all the while the absence of the destructive components of the human experience discouragement, tension, outrage, dread, and the presence of empowering one's certain feelings, which means healthy connections, ecological dominance, dedication, and self-realization."

Bio psychosocial Model of Quality of Life (30)

The bio psychosocial model explains the relationship between biological, psychological, and social. It relies upon the focal issue that the individual tends to a biological unit made of both body and mind, that is, not simply of a biological body, which plays a conclusive limit in the improvement of normal sicknesses.

Rationale

The experience of chronic pain is intricate and complex, involving both tactile and enthusiastic segments. There are a few sorts of individuals who attempt to communicate those pains verbally or nonverbally in their family, companions or partners who can help them in a type of therapy and they can undoubtedly deliver their pain and stress through communicating and uncovering to other people. Yet, some individuals does not show any sort of signal, articulation or reaction to any sort of pain. They attempt to shroud their pain so others can't pass judgment on them whether they are dramatizing or exaggerating their pain to acquire compassion from others. As RA patients need to live with pain throughout their lives, some of them disguise their medical problems and this becomes even more dangerous when the available social help is limited or reduced. Forlornness and helpless help on occasion lead to increased affectability of pain and carefulness coming about into side effects of pain. Previous research has studied the role of self-support in helping RA patients and improving their well-being; but never in correspondence with concealed emotions and pain. That's why this study focuses on the role of self-concealment and social support on the quality of life of RA patients while predicting their pain intensity.

Objectives

The main objective of study was to investigate the relationship between self-concealment, social support, pain and quality of life among rheumatoid arthritis patients. It also aimed to investigate the role of social support in predicting pain and observing its moderating role between pain and quality of life among rheumatoid arthritis patients.

Method

Research Design

A correlational research design was used in this study in order to investigate the relationship between, self-concealment, social support, pain, and quality of life among RA patients.

Sampling Details

Non-probability sampling strategy was employed to collect data. In specific, purposive and snow-ball sampling were used to reach out to. The sample was approximately of N=150 RA patients. Participants aged 25- 40 years were included in the research. Only patients who were currently seeking treatment for RA for at least the past one year were included. Individuals having other types of RA (i.e., Osteoarthritis) and Fibromyalgia were excluded based on their medical reports and currently experience symptoms.

Assessment Tools and Data Collection

West Haven Multidimensional Pain Inventory scale

The West Haven-Yale Multidimensional Pain Inventory (WHYMPI) was initially evolved by Kerns et al. (31). The West Haven-Yale Multidimensional Pain Inventory is a thorough pain measure that contains 52 items and 12 subscales. A portion of the subscales remember the apparent impedance of pain for an assortment of regions, reaction from huge others, pain seriousness, seen life control, influence, and interest in different work, social, and individual exercises. Items are evaluated on a seven-point Likert rating scale.

Self-Concealment Scale

The Self-Concealment Scale (SCS) is a 10-item self-report questionnaire devised to measure the inclination to effectively disguise upsetting individual data from others (32). This scale uses a five-point Likert rating with potential reaction ranging from, 1= strongly agree and 5 = strongly disagree. Their inner consistency estimate of Cronbach's alpha was .83.

Multidimensional Scale of Perceived Social Support

The Multidimensional scale of Perceived Social Support (MSPSS) was developed by Zimet et al. (33). The scale means to gauge the perceived social support an individual experience in his/her environment. It incorporates 12 items which cover three measurements: Family, Friends and Significant Others. Scale is evaluated on a seven-point Likert rating ranging from (1-7) where (1 = very strongly disagree) and; (7 = very strongly agree). An absolute score is computed by adding the outcomes for all sub-scales. The likely score range is somewhere in the range of 12 and 84, the higher the score the higher the perceived social support. The inside consistency (Cronbach's alpha) of MSPSS was 0.92.

WHOQOL-BREF Quality of Life scale: The WHOQOL is a quality-of-life evaluation created by the WHOQOL Group with fifteen international field places, at the same time, trying to foster a quality-of-life appraisal that would be appropriate diversely. The WHOQOL-BREF (34) is a self-controlled poll containing 26 inquiries on the person's view of their well-being and prosperity over the past fourteen days. Its subs-scales address the physical, psychological, social, and environment domains of quality of life. Reactions to questions are on a 1-5 Likert rating scale where 1= "disagree" or "not at all" and 5 = "completely agree" or "extremely".

Data Collection

Ethical considerations including participation rights, obtaining informed consent, and maintaining the confidentiality of information were also followed. Researchers also sought institutional review board permission to conduct the research.

Data Analysis

The SPSS version 22 was used to analyze data. Descriptive statistics were used to compute frequency, mean and percentages for demographic data. Independent sample t-test was used to see the gender differences among selected variables. Pearson correlation was used to find the relationship between self-concealment, social support, pain, and quality of life.

Results

Descriptive Statistics

Table 1 shows comparison of men and women participants showing that women n=92(61%) was commonly presented with RA than men n=58(39%).

Table 1. Descriptive Statistical Characteristics of Participants (n=150)

Demographics	Categories	*f*	%	M	S. D
Age (25-40 years)	Women	92	61.3	31.89	5.50
	Men	58	38.7	32.12	4.95
Education	BS(Hons)	61	40.7		
	Masters	48	32.0		
	MPhil/MS	34	22.7		
	PhD	7	4.7		
Medical Condition	Diabetes	9	6.0		
	Hypertension	25	16.7		
	Any other	23	15.3		
	No physical ailment	93	62.0		
Treatment of Arthritis	1 year	72	48.0		
	2 years	35	23.3		
	3 years	29	19.3		
	>3 years	14	9.3		
Treatment Relief	Yes	54	36.0		
	No	32	21.3		
	Partially	64	42.7		
Pain Severity	Mild	52	34.7		
	Moderate	77	51.3		
	Severe	21	14.0		
Pain Duration	<1 year	68	45.3		
	>1 year	82	54.7		
Distress RA	Mild	44	29.3		
	Moderate	87	58.0		
	Severe	19	12.7		

Notes: RA = Rheumatoid Arthritis

Psychometric Properties of Scales

Table 2, shows the alpha reliabilities of the scales used in the present study along with their mean and standard deviation. The reliability values remained excellent for Multidimensional scale of Perceived Social Support (MSPSS) and West Haven Yale Multidimensional Pain Inventory (WHYMPI). For subscales including Pain Experience, Significant Other (SO), Family (F), Friends (FR), and total scale of Quality of life (WHOQOL), the reliability values were good. Scales and subscales with acceptable reliabilities were Self-concealment (SCS), Physical Quality of life (Phy) and Psychological (Psy).

Table 2. Reliability Analysis and Alpha Coefficient of Scales (n=150)

	Scales	k	M	SD	α	Range
1	Self-concealment	10	28.88	6.41	.772	10-43
2	Social Support	12	59.28	13.74	.922	18-84
3	West Haven Pain	52	161.21	38.65	.906	35-246
4	Quality of Life	26	89.73	14.50	.897	43-124

Notes: K = No. of Items; M = Means; SD = Standard Deviation; α = Alpha Coefficient

Correlation between Chronic Pain, Self-Concealment, Social Support and Quality of life among Rheumatoid Arthritis

In Table 3, the correlation matrix was generated using Pearson product moment correlation to examine the bivariate relationship between Chronic Pain, Self-Concealment, Social Support, and Quality of life among RA patients. The correlation matrix showed that self-concealment was significantly negatively correlated with family, Physical and Psychological quality of life. It showed that the more the individual conceals the less the quality of life will be. Social support subscale was found to have a negative significant relationship with pain subscale punishing and a positive significant relationship with quality of life. This means if there is social support then the pain and quality of life will be manageable, quality of life will also increase.

Table 3. Correlation between Chronic Pain, Self-Concealment, Social Support and Quality of life among Rheumatoid Arthritis

	Scales	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**M**	**SD**
1	Self-concealment	-	.10	.09	.16	.06	.02	-.16*	-.08	-.24**	-.17*	28.88	6.41
2	Social Support		-	.70**	.64**	.25**	.26**	.22**	.17*	-.22**	-.28**	22.41	10.02
3	Pain severity			-	.53**	.16*	.17*	.09	.17*	-.07	-.24**	6.15	3.11
4	Negative mood				-	.32**	.16*	.11	.15	-.13	-.25**	6.94	2.72
5	Family							-	.72**	.50**	.42**	17.06	4.31
6	Friend								-	.28**	.34**	15.49	4.11
7	Physical									-	.60**	33.59	6.78
8	Psychological										-	30.11	6.63

Notes: *p<.05, **p<.01

Linear Regression Analysis of Social Support Predicting Pain

Table 4 describes the findings from the linear regression which showed a significant association between social support and pain with the former accounting for almost 21% of variance in pain.

Table 4. Self-Support as predictor of Pain through Linear Regression

Variable	*B*	*SD*	*β*	R^2	ΔR^2	*p*
Social Support	-.368	.080	-.354	.125	.119	.000***

Notes: *p<.05, **p<.01, ***p<.001; β = Regression Coefficient; R = Regression

Discussion

In light of the existing literature, self-concealment, perceived social support, and quality of life in RA patients were assessed through present study. It was deduced that RA patients were lonely, had above-average social support and had a reasonable quality of life (35).

According to a study, RA patients require social support from family members (25). Family members of RA patients, particularly those who live in extended families, are thought to need to be educated on the need for social support. The RA pain can occur spontaneously or as a result of gently moving a joint within its normal functional range, and it can even be felt in a seemingly normal surrounding tissue. Joint degeneration, which can be caused by an inflammatory disease or concomitant osteoarthritis, can make RA symptoms worse (10).

Certain variables have a significant impact on a person's physical, psychological, and social well-being. RA affects 0.5-1 percent of the population, with a woman-to-man ratio of 3:1. It is 4 to 5 times greater in women under the age of 50, but beyond 60, the ratio drops to about 2 to 1 (36). Gender differences were found in experiencing pain and helplessness along with critically evaluating associations with work disability. Similar results were observed in the linkages of these qualities when the outcome was categorized as working vs. not working (37).

Patients with RA who had low education and/or were under a lot of physical strain at work, like the general population, had a greater risk of long-term sickness absence (LTSA). This is an important finding since educational achievement and physical job strain are two variables that may be controlled. Other major risk factors identified in our study (age, family type, and education) influenced LTSA risk in both RA patients and the general population, indicating that they are not specific to RA patients. In general, women had a higher risk of LTSA than men, and this observation was true for the present study sample as the difference between men and women patients was smaller than in the general population (38).

One of the most prevalent difficulties that RA patients encounter, according to Giorgi et al. (39), is discomfort. As the illness develops, pain levels tend to climb. The unpredictability of pain is one aspect that interrupts well-being; patients have no way of knowing when an episode of pain will end or begin. This has a negative impact on the patients' emotional state and greatly increases their negative attitude.

The RA patients are more prone to experience loneliness. This might be due to a lack of social support as well as stigmatization and invalidation, which is common in rheumatic conditions that have no medical evidence. This means that, in order to minimize loneliness in people with rheumatic diseases, therapeutic attention should be devoted to both social support and invalidation reduction. Loneliness has been related to a reduction in social support, an increase in negative social interactions, and stigmatization (40). The previous research study contributed to validate the current findings as it suggested a negative impact of loneliness on quality of life.

According to earlier research, lonely persons are hypervigilant (i.e., on high alert) not only about their physical sensations and pain related symptoms but also towards hazards in the social environment that could trigger pain, according to a modern theoretical model (41). This causes attention, memory, and confirmation biases, making it harder to develop good social connections (42). These findings of present study corroborate Cacioppo and Hawkley's theoretical model, which states that loneliness is connected to early cognitive processes. Lonely adults are especially susceptible to social hazards such as enraged facial expressions and social rejection signs.

Approximately two-thirds of those polled felt compelled to disclose their sickness at work, with half admitting to doing so reluctantly. Others chose not to disclose their sickness in the face of their circumstances. Fear of being perceived as inadequate and losing their job, a reluctance to make other people uncomfortable, and a feeling that others will not understand were among the reasons for hiding disease (43).

Another study found that cancer survivors frequently experience pain and depression symptoms. Lower social support is associated with a number of poor mental and physical health consequences in survivors. Immune dysregulation might be one mechanism linking a lack of social support to the progression of pain and depression symptoms over time. As a result, the current study sought to investigate the connections between survivors' social support, pain, depressive symptoms, and inflammation. Survivors who lacked social support before therapy experienced higher levels of pain and depressive symptoms over time than those who had sufficient social support available (44).

The study's goal was also to discover if social support may help control the link between pain and quality of life. It was revealed that higher pain intensity was associated with lower HRQOL, but more social support was associated with higher HRQOL. However, there was no significant connection between social support and suffering.

Conclusion

There is no proven cure for the auto-immune condition like RA. Individuals with RA often suffer intense pain as a result of tissue inflammation. Its progression could be chronic or violent. In the past year, RA prevalence has climbed to 5% (45). Additionally, compared to the European and African nations, Pakistan has a greater frequency of RA (46, 47). Many times, psychological assistance is not sought because therapies are perceived as less reliable in terms of reducing their disease's adverse effects (i.e., pain). Therefore, to achieve the aim of tailored care, future research must understand the dynamics of patients and families. This study would not only improve prognoses but also deepen the meaning of existence. It raises the possibility that in the future, a larger percentage of younger individuals will seek counselling or treatment for chronic pain and RA rather than masking it to appear functional.

Acknowledgements

Psychological Mental Health Integrated Services University of Punjab New Campus Hospital, Lahore, Pakistan where patients of RA with psychological issues were referred.

Ethics of Study

The research was conducted after the approval of the synopsis from the department and research board of Lahore Garrison University.

Conflict of Interest: None

Funds: None

References

1. Carmona L, Csross M, Williams B, Lassere M, March L. Rheumatoid arthritis. *Best Practice & Research Clinical Rheumatology*. 2010;**24(6)**:733–745. doi: 10.1016/j.berh.2010.10.001.
2. Szotek N. Rheumatoid arthritis [RA]: More than an inflammatory disorder? A systematic review [Master's thesis]. University of Twente; 2010.
3. Ryan S, McGuire B. Psychological predictors of pain severity, pain interference, depression, and anxiety in rheumatoid arthritis patients with chronic pain. *British Journal of Health Psychology*. 2016;**21(2)**:336-350.
4. Kuhlow H. Factors explaining limitations in activities and restrictions in participation in rheumatoid arthritis [Dissertation]. Ludwig-Maximilian-Universität zu München; 2007.

5. McWilliams DF, Walsh DA. Pain mechanisms in rheumatoid arthritis. Clin Exp Rheumatol. 2017;**35(Suppl 107)**:94-101.
6. Cooper C, Dennison E. *The natural history and prognosis of osteoarthritis. In: Osteoarthritis.* Oxford University Press; 1998. p. 237-249.
7. Woolf CJ. Pain: moving from symptom control toward mechanism-specific pharmacologic management. *Annals of Internal Medicine*. 2004;**140(6)**:441-451.
8. Vanden Bulcke C. Hypervigilance and pain: the role of bodily threat [Doctoral dissertation]. Ghent University; 2015.
9. De Luca K, Parkinson L, Byles J. A study protocol for the profile of pain in older women: assessing the multi-dimensional nature of the experience of pain in arthritis. *Chiropractic & Manual Therapies.* 2014;**22(1)**:1-7.
10. Sarzi-Puttini P, Salaffi F, Di Franco M, Bazzichi L, Cassisi G, Casale R, et al. Pain in rheumatoid arthritis: a critical review. *Reumatismo.* 2014;18-27.
11. Rupp I, Boshuizen HC, Dinant HJ, Jacobi CE, Van den Bos G. Disability and health-related quality of life among patients with rheumatoid arthritis: association with radiographic joint damage, disease activity, pain, and depressive symptoms. *Scandinavian Journal of Rheumatology*. 2006;**35(3)**:175-181.
12. Murray CB, Groenewald CB, de la Vega R, Palermo TM. Long-term impact of adolescent chronic pain on young adult educational, vocational, and social outcomes. *Pain*. 2020;**161(2)**:439.
13. Treede RD, Rief W, Barke A, Aziz Q, Bennett MI, Benoliel R, et al. A classification of chronic pain for ICD-11. *Pain.* 2015;**156(6)**:1003.
14. Darnall BD, Carr DB, Schatman ME. Pain psychology and the biopsychosocial model of pain treatment: ethical imperatives and social responsibility. *Pain Medicine*. 2017;**18(8)**:1413-1415.
15. Shaygan M, Karami Z. Chronic Pain in Adolescents: The Predictive Role of Emotional Intelligence, Self-Esteem and Parenting Style. *International Journal of Community Based Nursing and Midwifery*. 2020;**8(3)**:253.
16. Darnall, B. D., Carr, D. B., & Schatman, M. E. (2017). Pain psychology and the biopsychosocial model of pain treatment: ethical imperatives and social responsibility. Pain Medicine, **18(8)**, 1413-1415.
17. Kelly AE, Achter JA. Self-concealment and attitudes toward counseling in university students. *Journal of Counseling Psychology*. 1995; **42**:40-46.
18. Wakefield EO, Puhl RM, Litt MD, Zempsky WT. "If It Ever Really Hurts, I Try Not to Let Them Know:" The Use of Concealment as a Coping Strategy Among Adolescents with Chronic Pain. *Frontiers in Psychology*. 2021; **12**:1840.
19. Ryan RM, Deci EL. Overview of self-determination theory: An organismic dialectical perspective. In: *Handbook of self-determination research*. 2002. p. 3-33.
20. Wallace BC, Constantine MG. Africentric cultural values, psychological help-seeking attitudes, and self-concealment in African American college students. Journal of Black Psychology. 2005; **31**:369-385.
21. Wismeijer AA, Van Assen MA, Sijtsma K, Vingerhoets AJ. Is the negative association between self-concealment and subjective well-being mediated by mood awareness? Journal of Social and Clinical Psychology. 2009; **28(6)**:728-748.
22. Cullen FT, Wright JP. Liberating the anomie-strain paradigm: Implications from social support theory. In: *The future of anomie theory*. 1997. p. 187-206.
23. Weinberger M, Hiner SL, Tierney WM. Improving functional status in arthritis: the effect of social support. *Social Science and Medicine*. 1986; **23**:899-904.
24. Kool MB, van Middendorp H, Lumley MA, Bijlsma JW, Geenen R. Social support and invalidation by others contribute uniquely to the understanding of physical and mental health of patients with rheumatic diseases. *Journal of Health Psychology*. 2013;**18(1)**:86-95.
25. Fallatah F, Edge DS. Social support needs of families: the context of rheumatoid arthritis. *Applied Nursing Research*. 2015;**28(2)**:180-185.

26. Smyth JM, Zawadzki MJ, Santuzzi AM, Filipkowski KB. Examining the effects of perceived social support on momentary mood and symptom reports in asthma and arthritis patients. *Psychology & Health*. 2014;**29(7)**:813-831.
27. Weiss, R. S. (1974). The provisionss of social relationships. Doing unto others, 17-26.
28. Panzini RG, Mosqueiro BP, Zimpel RR, Bandeira DR, Rocha NS, Fleck MP. Quality-of-life and spirituality. *International Review of Psychiatry*. 2017;**29(3)**:263-282.
29. Adler A, Seligman ME. Using wellbeing for public policy: Theory, measurement, and recommendations. *International Journal of Wellbeing*. 2016;**6(1)**.
30. Irtelli, F., & Durbano, F. (2020). Quality of Life and Biopsychosocial Paradigm: A Narrative Review of the Concept and Specific Insights. IntechOpen.
31. Kerns RD, Turk DC, Rudy TE. The West Haven-Yale Multidimensional Pain Inventory (WHYMPI). *Pain.* 1985;**23(4)**:345-356.
32. Larson DG, Chastain RL. Self-concealment: Conceptualization, measurement, and health implications. *Journal of Social and Clinical Psychology*. 1990;**9(4)**:439-455.
33. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*. 1988;**52(1)**:30-41.
34. World Health Organization. WHOQOL-BREF: introduction, administration, scoring and generic version of the assessment: field trial version, December 1996. *World Health Organization*; 1996.
35. Akkaya F. Evaluation of the loneliness, social support and quality of life in patients with rheumatoid arthritis. *International Journal of Caring Sciences*. 2018;**11(1)**:457-463.
36. Intriago M, Maldonado G, Cárdenas J, Ríos C. Clinical characteristics in patients with rheumatoid arthritis: differences between genders. *The Scientific World Journal*. 2019.
37. De Roos AJ, Callahan LF. Differences by sex in correlates of work status in rheumatoid arthritis patients. *Arthritis Care & Research*. 1999;**12(6)**:381-391.
38. Hansen SM, Hetland ML, Pedersen J, Østergaard M, Rubak TS, Bjorner JB. Work ability in rheumatoid arthritis patients: a register study on the prospective risk of exclusion and probability of returning to work. *Rheumatology*. 2017;5**6(7)**:1135-1143.
39. Giorgi G, Leon-Perez JM, Pignata S, Topa G, Mucci N. Addressing Risks: Mental Health, Work-Related Stress, and Occupational Disease Management to Enhance Well-Being 2019.
40. Kool MB, Geenen R. Loneliness in patients with rheumatic diseases: the significance of invalidation and lack of social support. *The Journal of Psychology*. 2012;**146(1-2)**:229-241.
41. Cacioppo JT, Hawkley LC, Thisted RA. Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations Study. *Psychology and Aging*. 2010;**25(2)**:453.
42. Bangee M. Loneliness and Hypervigilance to Social Threats in Adults [Doctoral dissertation]. University of Central Lancashire; 2016.
43. Gulseren D, Kelloway EK. Working through the Pain: the Chronic Pain Experience of Full-Time Employees. *Occupational Health Science*. 2021;**5(1)**:69-93.
44. Hughes S, Jaremka LM, Alfano CM, Glaser R, Povoski SP, Lipari AM, et al. Social support predicts inflammation, pain, and depressive symptoms: longitudinal relationships among breast cancer survivors. *Psychoneuroendocrinology*. 2014;**42**:38-44.
45. Naqvi AA, Hassali MA, Aftab MT. Epidemiology of rheumatoid arthritis, clinical aspects and socio-economic determinants in Pakistani patients: A systematic review and meta-analysis. JPMA. *The Journal of the Pakistan Medical Association*. 2019;**69(3)**:389-398.
46. Rossini M, Rossi E, Bernardi D, Viapiana O, Gatti D, Idolazzi L, et al. Prevalence and incidence of rheumatoid arthritis in Italy. *Rheumatology International*. 2014;**34(5)**:659-664.
47. Slimani S, Ladjouze-Rezig A. Prevalence of rheumatoid arthritis in an urban population of Algeria: a prospective study. *Rheumatology*. 2014;**53(3)**:571-573.