PAIN CATASTROPHIZING AND PAIN ANXIETY IN PATIENTS WITH RHEUMATOID ARTHRITIS: ROLE OF RESILIENCE AND SOCIAL SUPPORT

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Candidate of **<u>Master of Philosophy</u>** at the National University of Modern Languages do hereby declare that the thesis **<u>"Pain Catastrophizing and Pain Anxiety in Patients with Rheumatoid Arthritis: Role of Resilience and Social Support"</u>**submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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Abstract

Title: Pain Catastrophizing and Pain Anxiety in Patients with Rheumatoid Arthritis: Role of Resilience and Social Support

In clinical practice, it is often noted that some individuals with arthritis suffer from pain different psychological issues while others find effective means to cope with them. The aim of the current study is to find empirical ascertain the relation between pain catastrophizing and pain anxiety and to find the moderating role of resilience and social support among patients with rheumatoid arthritis. Pain catastrophizing scale, pain anxiety symptom scale, the Connor-Davidson resilience scale, and multidimensional scale of the perceived social scale were employed as assessment measures for the study. Firstly, a pilot study was conducted on a sample of 50 patients to establish the psychometric properties and see the relationship between study variables. Correlation results indicated strong relation between pain catastrophizing and pain anxiety while resilience and perceived social support have a negative correlation with these variables. After getting the desired results, main study was conducted on the sample (N=200) of rheumatoid arthritis patients (male = 51, female = 149) with age range 22 to 85 years ($M = 44.96$, $SD = 12.74$). Data was collected from different government hospitals in Islamabad and Rawalpindi through a convenient sampling technique. The result of multiple regression revealed that pain catastrophizing jointly produces a great impact on pain anxiety. Similarly, linear regression showed that increase in resilience and social support, decreased pain anxiety. The moderating effect of social support and resilience was also observed. A t-test was used to determine the significant difference between the means of groups on gender, age, duration of illness, and treatment of illness. This will add up to the literature but further work is required to look at other potential confounders of the variables.

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Context of the study

The word arthritis is a derivative of the Greek term meaning disease of the joints. The term arthritis is usually defined as an acute and chronic inflammation of joints that mostly coexist with any kind of damage or pain in the body that frequently co-exists with structural damage and pain (Cranney, 2009). Arthritis is often mistaken for arthralgia. Arthralgia is the pain that is limited to a particular joint independent of the source of the pain (may or may not be caused by joint inflammation). Arthritis is inflammation of joint rather sign or symptom is inflammation joint. The most common complaint is joint pain among arthritis patients. There are a variety of causes of arthritis, including inflammation surrounding the joint, disease-related joint degeneration, regular wear & tear on the joint, strains of muscle induced by vigorous motions of painful stiff joints, and exhaustion. (Lagnocco, 2014).

Over a hundred distinct types of arthritis have been reported (Lagnocco, 2014). The commonest of all types is osteoarthritis (OA) which is also known as degeneration of joint syndrome followed by calcium pyrophosphate deposition disease (CPPD) or pseudogout, rheumatoid arthritis (RA), infectious arthritis (IA), gouty arthritis (GA), psoriatic arthritis (PA), spondyloarthritis (SA) and various autoimmune diseases. Another kind also exists known as undifferentiated arthritis, which is not characterized by any well-known clinical disease classes (Jessar, 1995).

Osteoarthritis is a joint disease, which is chronic and debilitating and is characterized by degenerative bone changes, joint ligaments, menisci, joint cartilage, and joint synovial tissue. The commonest people affected by osteoarthritis are normally aged, obese, or have any joint injury. Osteoarthritis can affect any joint in the but most commonly affected are knee joints, joints of the fingers, hip joints, lower spine, and joints of the thumb. Pain, stiffness of joints, tenderness, loss of flexibility of joints, spurs of bone, or a scraping sensation are common signs and symptoms of osteoarthritis (Dalbeth, 2012)

Gouty arthritis is different from osteoarthritis in a way that it is described as the accumulation of sharp crystals of monosodium uric acid. Gouty arthritis is known to target the

big toe (metatarsophalangeal joint). The other affected areas are the foot, fingers, ankles, knees, elbows, and wrists. Gouty arthritis is most common in men than women. Joint pain, redness, swelling, and tenderness are common signs and symptoms of gouty arthritis. Different diagnostic techniques like imaging techniques, analysis of synovial fluid, and blood tests are used to diagnose it. Medical treatment and lifestyle modification are primary methods of management (Agastino, 2010)

Psoriatic arthritis is a type of inflammatory arthritis. It is a seronegative spondyloarthropathy and patients having tissue type HLA-B27 are mostly diagnosed with it. 30% of people are susceptible to developing psoriasis. Common symptoms are swelling, pain, and stiffness in one or more joints. Many factors, like a physical examination, history of family and laboratory investigations, can be considered to diagnose it. Thorough medical treatment can help in reducing and controlling inflammation thus managing Psoriatic arthritis (Małdyk, 2008).

It is one of the many joint diseases that can lead to arthritis. The most common of all is Ankylosing spondylitis. It also affects the spine. This disease is different from rest of the forms of arthritis. The difference is due to the involvement of entheses. Entheses are Ligament and tendon attachment points on bones. The common and recurring symptoms and indicator of spondyloarthropathy is the inflammation that causes stiffness and pain in joints. disfigurement of spine and hips and shoulder's malfunctioning because of bone destruction are also common indicators of spondyloarthropathy. Its diagnosis can be done by taking the history of family, physically examining the patient and blood reports. Allopathic treatment or physiotherapy are common ways of managing it (Zhang, 2012).

Rheumatoid Arthritis (RA)

Another rheumatic disease which causes inflammatory, is rheumatoid arthritis (RA). It is identified to be affecting the extra-articular and inflammatory structures.

Pain, disability, and death can be caused by it. Rheumatoid arthritis can result in pain, disability, and mortality (Birch, 2010). In most of patients, recurring or continuous inflammation can result in erosive joint damage and functional disability (Miedany, 2010; Combe, 2009). The condition manifests differently in each patient based on the number, kind, and pattern of affected joints. Several factors, including as genetic background, the number of swollen joints, autoantibody levels in the blood, and the severity of the inflammatory process, can all influence the start and progression of disease (Gossec, 2010; Finckh, 2006). Rheumatoid arthritis is a chronic inflammatory condition that worsens with time. The onset occurs in the synovial membrane, resulting in articular tissue deformation and injury, as well as a reduction in articulatory function (Madyk, 2008). The earliest symptoms of early rheumatoid arthritis are similar to those of other inflammatory arthritis. In usual cases, Patients with early rheumatoid arthritis are categorized as undifferentiated arthritis until a definite diagnosis. Early rheumatoid arthritis can be defined as people with a disease duration of less than 2 years, interference for less than 12 months, but most rheumatologists are now ready to accept patients with symptoms lasting less than 6 weeks.

Pain catastrophizing is the ability to imagine the worst possible outcomes and to preserve one's pain. In chronic musculoskeletal and rheumatic disorders, pain catastrophizing has a major impact on the results of the relationship between pain experience and pain-related outcomes. The length of hospital stays and disability are two pain-related outcomes. Several cross-sectional and longitudinal investigations in rheumatoid arthritis patients have found significant links between pain catastrophizing and pain intensity (Holtzman, 2007).

The term catastrophizing implies seeing or presenting a situation as much worse than it is, and it has been seen those mental illnesses such as depression and anxiety are

exacerbated as a result of this occurrence. The term put forward by Ellis in 1962 can be better-studied whiting the umbrella of rational emotive behavior therapy. Ellis's idea furthered the role of both rational and irrational beliefs in shaping the emotional responses closely attached to behaviors, goals, and human actions. Ellis traced the origin of catastrophizing closely attached with the inception of irrational beliefs humans possess due to a variety of factors. It is an observable fact that beliefs that are not logical can halt personal growth. For example, having acute disdain for anything (this is awful), being unable in coping with routine challenges (the world has come to an end, nothing is left), or being skeptical about established ideas (this treatment will put me in danger) will propel over-generalized and exaggerated emotional responses and prevent socially acceptable behaviors.

Pain-related anxiety is a significant aspect while explaining the level of complaints regarding pain and disability related to pain in adolescents (Caes, 2015). If pain is viewed as a sign of injury or threat, it can initiate preventive response to fear, negative thoughts and avoidant-protective behavior. If these behaviors get prolonged, they can lead to unpredictable effects which can be sustained by disability and sensitivity related to pain (Vlaeyen and Linton, 2012).

The term pain anxiety indicates devastating and excessive anxiety about the physical and psychological measures and behavior or response as the result of feeling of helplessness towards pain. According to studies conducted on patients with non-malignant chronic pain conditions such as lower back pain, disability and anxiety can have a negative impact on patients (Elfving, 2007).

Resilience can be taken as a dynamic developmental process, and the goal is to understand the procedure that allows the individual to face adversity conveniently, or as a character trait, in which case the focus is on recommending the resilient features of

the individual (Gucciardi et al., 2011). Another model says individuals initiate from a position of homeostasis and should be subsequently adjustable to life situations. The aptitude to deal with these events is heavily influenced by the relative success and failure of previous efforts at adaptation. This study takes resilience as a person's capacity to prevail against problematic circumstances to adapt and find perseverance in a traumatic experience (Luo & Eicher, 2020).

Resilience, according to Bonanno's idea, is the most prevalent herbal reaction to loss, such as post-stressful strain disorder (Bonanno, 2004). He used an effective method of investigations that were specific to each grief and trauma. Bonanno, along with his colleagues, looked into what was wrong with people who were chronically symptomatic and had poor functioning following adversity, while also looking into what variables allowed people to deal with adversity in a positive way (Southwick et al., 2014).

According to the nature of the relationships, social support, which may be described as being helped while needed, being cherished and receiving appreciation and patient's cognitive belief that he/she has dependable ties with others and he/she can be able to get hold of support (Kozaklı, 2006).

1.1 Rationale of the Study

About the effect of psychological concerns in the treatment of RA, a number of observations and arguments have led in the recent past. Rheumatoid arthritis is not only a disabling disease, especially its more severe and systemic forms but also linked with increased psychological impairment.

The clinical picture of rheumatoid arthritis is led by a triggering factor (for some .a psychological incident). The psychological state of the patient both affects and is affected by the clinical course of RA. Comparatively, minute has been transcribed on the intricate psychological issues involved in the management of patients suffering from the rheumatoid

disease. For patients of rheumatoid arthritis psychological issues can have far-reaching significances. Not much consideration has been paid to the psychological side of the treatment maybe because of the fact that this is a medical term.

Pain is a health-related issue, which demands an extensive interdisciplinary approach as compare to other disorders. The reaction to the pain and the experience of that pain are the product of interconnected psychosocial and the dynamics of biology. Hence, it is also essential to explore the other side that might affect the medical treatment as well.

The association between pain anxiety and pain catastrophizing has been addressed in the current study as both are amongst the major psychological elements that can affect the treatment of rheumatoid arthritis patients directly or indirectly. However, Future research has focused on the significance of pain anxiety and catastrophizing as risk factors for poor pain outcomes in RA patients, but the bulk of studies have used the outcome of acute pain lasting shorter than 6 months. Pain catastrophizing (Keefe, 1991) and the effect of pain-related anxiety (Meewisse, 2003) have been studied in patients of arthritis but have only lately been investigated in patients suffering from rheumatoid arthritis. People who suffer from pain anxiety are more inclined to engage in avoidance behaviors, such as avoiding physical exercise and movement. Understanding the relative relevance of these two pain cognitions is important for two reasons. To begin with, it may aid psychological evaluation efforts by focusing on the most critical cognitions. Second, it could have ramifications for treatment approaches aimed at resolving pain and adjusting to new situations.

In light of the empirical research on rheumatoid arthritis and relatable investigations in other long-lasting pain disorders, there is strong support that social resources and strategies to cope with pain affect the disease outcome in severe pain disorders (Linton, 2000). Another study by Keefe (2002), suggests that analysis must be conducted on strategies related to pain since these strategies are important in gaining knowledge and giving an understanding of pain-related factors among patients suffering from arthritis. Recently, there is a drastic shift in the resilience capacity and vulnerability of rheumatoid arthritis patients. resilience is the ability of

a person to come back from emotional or painful experiences and reflects the person's capacity to adopt the changes demanded by a stressful event. These characteristics are important for maintaining healthy and prosperous life (Klohnen, 1997).

There is now enough evidence that psychological and social factors play a significant role in the impairment of people with musculoskeletal pain. Psychological co-morbidity has also been demonstrated to not only cause significant disability but also to predispose to future musculoskeletal issues. According to the data, those who have a long-term medical condition are twice as likely to develop significant depression in the coming year than people who do not have a chronic illness. Mood disorders are more prevalent in rheumatologic subgroups than in any other medical disease (O'Malley et al., 1998).This research will aim to focus on the relation between pain anxiety and pain catastrophizing and to highlight the importance of social support and resilience in patients of RA to cope with negative psychological effects.

1.2 Problem Statement

To study pain catastrophizing and pain anxiety in the patients of rheumatoid arthritis and to see the role of resilience and social support.

1.3 Objectives

The objectives of this research include:

1.   To examine the relationship between pains catastrophizing pain anxiety, resilience and social support in the patients of rheumatoid arthritis.

2.   To examine the impact of pain catastrophizing on pain anxiety in the patients of rheumatoid arthritis.

3.   To examine the impact of resilience and social support on pain anxiety in the patients of rheumatoid arthritis.

4.   To study the moderating role of resilience and social support in relationship between pain catastrophizing and pain anxiety in the patients of rheumatoid arthritis.

5.   To investigate the role of demographic characteristics such as age and gender on all research variables.

1.4 Research Questions

1.   There is a positive association between pain anxiety and pain catastrophizing in patients with rheumatoid arthritis patients.

2.   There is a negative relationship between pain anxiety and social support in patients with rheumatoid arthritis patients.

3.   There is negative association between pain anxiety and resilience in patients with rheumatoid arthritis.

4.   There is negative relationship between pain catastrophizing and social support in patients with rheumatoid arthritis patients

5.   There is negative relationship between pain catastrophizing and resilience in patients with rheumatoid arthritis patients.

6.   Pain catastrophizing increases pain anxiety among patients of rheumatoid arthritis.

7.   Social support decreases pain anxiety among patients of rheumatoid arthritis.

8.   Resilience decreases pain anxiety among patients of rheumatoid arthritis.

9.   Social support buffers the effect of pain catastrophizing on pain anxiety in patients with rheumatoid arthritis.

10.   Resilience buffers the effect of pain catastrophizing on pain anxiety in patients with rheumatoid arthritis.

1.5 Null hypothesis

1. There is no association between pain anxiety and pain catastrophizing in patients with rheumatoid arthritis patients.

2. There is no relationship between pain anxiety and social support in patients with rheumatoid arthritis patients.

3. There is no association between pain anxiety and resilience in patients with rheumatoid arthritis.

4. There is no relationship between pain catastrophizing and social support in patients with rheumatoid arthritis patients

5. There is no relationship between pain catastrophizing and resilience in patients with rheumatoid arthritis patients.

6. Pain catastrophizing has no impact pain anxiety among patients of rheumatoid arthritis.

7. Social support has no impact on pain anxiety among patients of rheumatoid arthritis.

8. Resilience has no impact on pain anxiety among patients of rheumatoid arthritis.

9. Social support does not buffers the effect of pain catastrophizing on pain anxiety in patients with rheumatoid arthritis.

10. Resilience does not buffers the effect of pain catastrophizing on pain anxiety in patients with rheumatoid arthritis.

1.6 Conceptual Model of the Study

Figure 1

The relationship of pain catastrophizing and anxiety with the role of resilience and social

support among rheumatoid arthritis patients
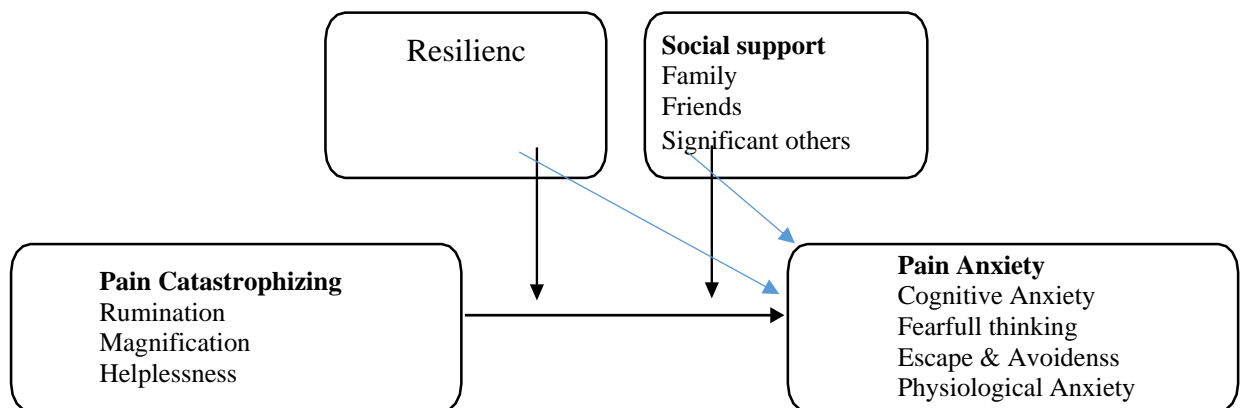
`1.7 Significance of the study

The conceptual and methodological extensions made in this study should serve to further future research into the varied manifestations of chronic pain, which is a widespread and frequently life-altering stressor that affects a wide spectrum of people. These findings raise questions regarding potential strategies to successfully lessen pain catastrophizing. Effective interpretations could work in two different ways. An intervention could lessen the frequency of intrusive pain-related cognitions, which would lessen the emotional toll that comes with frequently catastrophizing about pain. Additionally, those who are predisposed to adopt the helplessness and hopelessness cognitive style should receive additional coaching. It may be able to lessen the impact of the occurrence of catastrophic and anxious thoughts about pain by minimizing individual attempts at self-inoculation against pain, encouraging a more adaptive attitude on pain (such as being resilient), and getting social support.

1.8 Methodology

Cross Sectional research, design was used in order to obtain the objectives of the study and to explore the association between pain catastrophizing, pain anxiety, resilience and social support.

1.9 Delimitations

Diaries that are more frequent could further enhance our ability to capture day-to-day and, in fact, even hour-to-hour changes in physical, cognitive, and affective states, even if the data collecting approach does capture significant within-person variance. It is necessary to do research to determine whether such assessments are practical for the variables under study and, if so, whether they are successful in capturing state variance that is not taken into account by one-time assessments. The causal effects of pain anxiety and pain catastrophizing on affective distress, which were absent from the current data, maybe more easily detected in assessments that are measured more frequently. The pre-existing psychological conditions may significantly affect how people manage their chronic pain. Determining whether those with chronic pain and clinician-diagnosed mood disorders (such as depression or anxiety) are more vulnerable to the negative effects of the research factors would therefore be useful. Examining the cognitive responses of those with and without mood disorders to their pain may help to further elucidate the role of chronic pain in vulnerability to psychiatric illnesses. Evidence suggests that several mood disorders are more common in people with chronic pain (Dickins et al., 2002).

1.10 Operational Definitions

The operational definitions of the study variables are as follow:

Pain catastrophizing

Pain catastrophizing can be defined as an exaggerated negative orientation toward actual or anticipated pain experiences. Pain Catastrophizing Scale (PCS) by Sullivan and Pivik (1995) was used for measuring the amount of catastrophizing due to pain

Pain anxiety

Pain anxiety is an anxious response to pain which may lead to avoidance of behavior expected to produce pain. The PASS-20 (McCracken & Dhingra, 2002) is a 20-item measure of anxiety and fear of responses associated with the experience of chronic or recurrent pain. Each item is rated on a 5-point scale from 0 (never) to 5 (always).

Resilience

Resilience gives us the ability to thrive in the face of adversity. Those who are resilient are better able to move through the traumas of life. It was measured by The Connor-Davidson Resilience scale (CD-RISC) comprises of 25 items, each rated on a 5-point scale (0-4), with higher scores reflecting greater resilience.

Social Support

Social support can be described as support access to an individual through social ties to other individuals, groups, and the larger community. This variable was measured through the Multidimensional Scale of Perceived Social Support (MSPSS) which is a 12-item scale designed to measure perceived social support from three sources: Family, Friends, and a Significant Other.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

2.1. Rheumatoid Arthritis

At the moment, early rheumatoid arthritis is diagnosed in patients as those with symptoms lasting less than three months (Aletaha, 2006). Though, all researchers have not accepted this term early rheumatoid arthritis yet. Patients are thought to have either established rheumatoid arthritis or undifferentiated inflammatory arthritis, according to many rheumatologists (Dixon, 2005; Scott, 2007). A person with rheumatoid arthritis may have a variety of somatic issues, including joint distortion and weakness, lasting pain, weight loss, tiredness, and fever. Furthermore, patients suffer a variety of psychological challenges such as anxiety, depression, emotions of loss, and social difficulties due to changes in fulfilling societal tasks, all of which have a detrimental impact on their lives (Ziarko, 2014).

Moreover, patients also face many psychological issues like anxiety, depression, feelings of loss, and social difficulties related to changes in fulfilling social roles, which negatively impact their life (Ziarko, 2014).

Females are more susceptible to rheumatoid arthritis (RA) than men and the probability of them developing this disease is 3-4 times higher as compared to in men. It is more common in elderly. In 2002, the prevalence rate was said to be ranging from 0.5 percent to 1% of the population, with some geographical variations. The average onset age is 40 to 60 years old (Silman, 2002). Early diagnosis is thought to be the most important factor in achieving the best results (i.e., decrease in joint deterioration, no physical impairment, less radiologic progression, and modifying the anti-rheumatic drugs for disease-free diminution). It also includes financial perspective and efficiency

of treatment as the best time for therapeutic intervention is within the first 12 weeks from the onset of symptoms (Cho et al, 2017). Early diagnosis, on the other hand, is ambiguous and challenging because it is based on clinical information acquired from the patient's family and medical history, as well as physical examinations, laboratory tests, and imaging studies. Because it relies heavily on clinical data gathered from the patient's medical history and physical examination, as well as lab testing and imaging examinations. Delays in diagnosis can occur for a variety of causes due to varied healthcare systems in different countries (Raza et al., 2011). However, the reason behind delayed DMARD (disease-modifying antirheumatic drugs) medication in rheumatoid arthritis patients is usually the patient and the physician. The treatment of rheumatoid arthritis and its outcome depends on many factors like awareness of patient about rheumatoid arthritis, motivation of patient for the treatment, timeframe between the onset of symptoms and getting proper and timely treatment, and medical prowess of the physician. The manifestations of pulmonary granulomas (rheumatoid nodules), keratitis, pericarditis, slight vasculitis of vessel, and the other extra-articular markers are the risks related to poorly controlled or severe disease and might develop in patients.

Rheumatoid arthritis has different types. One factor that can help decide the course of treatment is understanding which type of rheumatoid arthritis one is facing with. The kind of rheumatoid arthritis patients have is determined by the symptoms as well as the clinical results of x-rays and laboratory investigations. Different forms of rheumatoid arthritis are characterized through the existence or diminish of rheumatoid factor (RF) an autoantibody or protein that the body produces when its immune system is being attacked. It is very much possible to develop rheumatoid arthritis without having a positive RF test. Although its existence makes it easier to identify the kind of illness existing in the body. According to research, rheumatoid factor is found in more

than 80% of patients with rheumatoid arthritis, this condition is known seropositive or positive rheumatoid arthritis. Negative (or seronegative) RA is when rheumatoid arthritis patients' tests come negative regularly for rheumatoid factor. It is a milder kind of rheumatoid arthritis (Dörner et al., 2004).

The human body is said to be initiating an immune response against healthy tissues if a protein known as rheumatoid factor (RF) is found in the blood. Mostly, the RF is expected to be present in the places where there are other antibodies already present. Anti-cyclic citrullinated peptides (anti-CCPs) or anti-citrullinated protein antibodies (ACPAs) in the body, along with clinical signs and symptoms, confirm a patient's RA diagnosis. The existence of Anti-CCPs is caused by a change in the molecular framework of proteins in the body. The presence of these antibodies may be a prelude to the onset of the disease in 60 to 80 percent of people who are thought to have RA. There is a chance of antibodies showing up in blood testing 5 to 10 years before any clinical evidence can be seen. The anti-CCP test is very particular for RA as there can be a presence of RF antibodies in other medical conditions like Infection. In a person whose immediate relatives are positive for RF, there is a very high probability that he/she can develop rheumatoid arthritis (Choi, 2018).

Seronegative individuals are those who have tested negative for antibodies or RF in their blood. They are, however, nonetheless at risk of developing rheumatoid arthritis. While making a diagnosis, clinically presented indicators, lab x-rays, and various lab tests are generally taken under consideration. However, nothing can be said with certainty because people who test negative for RF are at high risk to develop a less severe form of rheumatoid arthritis compare to those whose tests are positive (Wilson, 2006).

Other differences can be detected in people with seropositive and seronegative rheumatoid arthritis. Patients, who are seropositive or anti-CCP positive, share an amino acid sequence encoded in the HLA genetic region, known as a common epitope. This human leukocyte antigen locus is responsible for the production of proteins that regulate immunological responses. However, recent research by Myasoedova (2020) focused on establishing the contribution of amino acid sequence to rheumatoid arthritis. It does so by allowing it to connect to citrullinated peptides, which promotes the formation of anti-CCP antibodies (Myasoedova, 2020). The studies have found that the patients of the common amino acid epitope, are in the habit of smoking which ultimately leads to the development of rheumatoid arthritis. Due to smoking, people, who have the same epitope and are genetically vulnerable, end up developing protein citrullination in the lungs, which results in the production of anti-CCP.

2.2. Overlapping Conditions

Autoimmune disorders have a lot of symptoms in common, which makes diagnosing them difficult. People who have been diagnosed with an autoimmune disease are more likely to develop another in the future. There are symptoms that overlap with lupus, fibromyalgia, Lyme disease, chronic fatigue syndrome, neuropathy, sciatica, anemia, hypothyroidism, and depression. Rheumatoid arthritis is often mistaken with osteoarthritis. Although, osteoarthritis is not an inflammatory disease but rather the result of daily joint wear and tear (Simon, 2017).

2.3. Psychological Approaches Toward Rheumatoid Arthritis Patients

Numerous approaches have been trialed for the management of pain. For determining which psychological approaches are being supported by past literature, a recent systematic review has been attempted (Dissanayake, 2010). 31 studies included in a review by Dissanayake (2010) he found that his findings had strong evidence for

communicative writing and cognitive behavior therapy for the duration of six weeks at least. However, the weak evidence were found for effectiveness of counseling sessions, psychotherapies, and cognitive behavior therapy for short duration. The basis of mostly reviewed mostly reviews. Individual studies were also analyzed comparatively along with relatively few studies in which there was a direct comparison of modality for more than one psychological and social treatment.

Zautra and colleagues (2008) compared a cognitive behavior therapy program that was designed using mindfulness-based stress-reduction intervention to focus on pain reduction and an education-alone condition. The result was that education alone was less efficacious than both the cognitive behavior therapy program and the mindfulness program. However, for the whole sample (n=144) the superiority of cognitive behavior therapy on pain outcomes and inflammation was very evident. Notably, there were differences in the subgroup. Yet, in a relatively fresh test, the three different conditions were compared. The same team reported that cognitive behavior therapy and mindfulness were differentially effective on different outcomes (Davis, 2015). A total of 143 people participated in the trial. Among those participants who completed daily diaries, mindfulness brought about extensive conclusions in producing a significant drop in pain which is recorded daily, and a chain of negative thoughts, stress, fatigue, perception of control, and unable to feel fresh in the morning due to stiffness. More confidence was obtained from these well-controlled and large studies that the patients suffering from rheumatoid arthritis can have an effective alternative treatment using mindfulness-based interventions. It corresponds with the recently reported systematic review for the management of pain which can arise due to conditions other than rheumatoid arthritis (Veehof, 2015). However, the available systematic reviews are insufficient to draw a comparison between cognitive behavioral

therapy and mindfulness. This is due to the fact that the number of studies on mindfulness in rheumatoid arthritis is relatively low. However, certainly promise is shown by mindfulness-based interventions and under some circumstances may even be a preferred intervention.

Over the past few years, there has been a urge in research choosing fatigue as a primary outcome. Despite that, these above-mentioned results are interesting because the prospect of psychosocial intervention targeting fatigue is very low. However, in other individual randomized controlled trials, an optimistic side of cognitive-behavioral interventions that target stress in rheumatoid arthritis patients (Hewlett and al, 2011) has also been found. In addition to fatigue that is closely associated with joint disease, rheumatoid arthritis, Hewlett and his colleagues (2011) were successful in coming up with benefits on rheumatoid arthritis pain also. The individualized approach developed by Evers and all (2002) can be considered a valuable breakthrough to help clinicians target the most worrying symptoms in rheumatoid arthritis patients, given fatigue is the most common indicator. However, there were no comparisons made by authors on the individualized approach of cognitive behavior therapy with the set procedure. It has caused difficulty in confirming whether these set standards or protocol increases its efficiency or not. Yet, these trial results were positive.

Nonetheless, this trial is an effective way to develop and evaluate interventions targeting symptoms other than pain. The recognized and useful interventions which focus on pain should be used in conjunction with these interventions. By the last few decade, many patients have undergone controlled trials of psychosocial interventions. The number of patients with rheumatoid arthritis was way more than those with osteoarthritis. The studies have considered many arguments that question the efficiency of the treatment.

Radojevic, Nicassio, and Weisman (1992) conducted a test to see if the element of family support enhances the efficiency of cognitive behavior therapy intervention to control rheumatoid arthritis symptoms. A sample of 65 patients with rheumatoid arthritis was chosen for random behavioral therapy in different settings like alone, with friends and family, awareness on arthritis with the support of family, or a condition with no offer for treatment. This sort of treatment was conducted in a form of groups of patients who would meet on weekly basis for 6 weeks straight. According to data analyses, the comparison of the results with the controlled situations showed substantial long- and short-term improvements on the part of both behavioral interventions. The improvements were manifested in the form of a decrease in swollen joints and severity of swelling. The 2-month follow-up also showed a decrease in pain during direct examination. Cognitive-behavioral interventions have proven to be very effective in handling rheumatoid arthritis disease-related symptoms. It also highlighted the significance of involving the members of family in sessions of cognitive-behavioral treatments for rheumatoid arthritis. Therefore, Radojevic and all concluded that cognitive-behavioral interventions can play a vital role in curing rheumatoid arthritis disease-related symptoms.

Greater importance has been given recently to the characteristics lining the diagnosis of rheumatoid arthritis pain. Specific focus is on the coping or managing methods and also on their potential for alteration to enhance results (National Collaborating Centre, 2009). Medication adherence is poor in chronic conditions. It was seen that half of the patients that were chronically ill, did not adhere to the instructions given to them and did not take their medicines as directed and also the consequences of these patients not adhering to the instructions are severe, they include less effectiveness of treatment and higher expenditures of the healthcare (Osterberg, 2005). Multiple

morbidity, comorbidity, and polypharmacy exacerbate the problem of medication adherence (Williams, 2008). A serious issue that has been reported in rheumatoid arthritis (RA) community is poor adherence to medication. Only 30 to 80 percent of patients take their medicine as prescribed (Zwikker, 2010). Societal consequence of joint disease like rheumatoid arthritis medication non-adherence includes lost output due to recurrence of sickness and increased healthcare costs (Ziegler, 2010). It has been seen that the patients who stick to their treatment plan have better control over their illness, their remission rates are high, their physical function is better, their likelihood of escalation of therapy to treatments that are more aggressive are less and their progression of the disease is slow (Morgan, 2015).

Poor drug adherence is multifaceted, and there is a variety of issues to consider. Psychological aspects have been taken into account in addition to demographic and clinical criteria. Risk factors are described in a variety of ways in the literature. Many other factors that have been proved to have an impact on medical adherence are race, age, and marital status. There are different clinical, social, and psychological aspects that have been approved to directly influence the patient's adherence to treatment. These factors include a rating of pain by the individual, the level of self-esteem, illness beliefs, functional ability, adverse medication effects, the duration of disease, the degree of support from the society he/she is living in, and the beliefs he is holding regarding medication (Carolin, 2019).

Rheumatoid arthritis causes a wide range of physical symptoms, including fever, weight loss, persistent pain, exhaustion, joint deformity, and degeneration. Aside from them, the patient must deal with issues that are psychological in nature and most of them have negative effects such as depression, loss of emotions, social difficulties due to change in social roles, anxiety (Edwards, 2009).

The research suggests that the point of view of a person regarding the quality of his life might provide more information that is meaningful about their emotional, physical, and social well-being rather than the variables of medical status and other objective measures of symptomatology (Angst, 2003). The subjective experience of pain can be shaped by physiological variables. Yet it in healthy individuals, the relation between these factors and nociceptive stimuli's central neural processing. Pain catastrophizing is an example of a psychological nature measure that can affect a patient's experience of pain (Sullivan et al., 2005), make it difficult to think about anything other than pain (Damme et al., 2004), or a person experiences an increase in the intensity of pain, and shows a maladaptive response (Sullivan et al., 2001). Pain catastrophizing has a significant impact on the pain experienced by physically fit people (Sullivan et al., 1995) as well as chronic pain patients (Goubert et al., 2004). It also shows a link between neuroticism, a personality attribute, and the pain effect.

It is interesting to study catastrophizing in the context of pinning down a negative reaction even before it actually occurs. It is established that distance from logic and commonly established practices cause' distress and negative emotions with catastrophizing playing an instrumental role in curating the series of events that eventually cause emotional dysfunction.

After Ellis had initiated his work on the augmentation of emotional distress, Beck (1976) (the father of cognitive therapy) carried it forward by utilizing the basics of the concept. Beck's eventually compounded the ideas of Ellis to present a problem-solving approach to patients with various psychological disorders. To elaborate on maladaptive cognitive behaviors faced by patients. Ellis's findings were used by him in his depression and anxiety cognitive theoretical models. A model of cognitive distortions introduced by Beck (1976) and in 2005, Beck with his colleagues, includes

initiation about automatic thoughts played very important role. In light of this modeling, catastrophizing can be understood as a self-starting error closely associated with cognition. As discussed, someone going through catastrophizing can develop the patterns of envisaging potential disasters in most exaggerating forms. In addition, due to fixation with irrational beliefs, patients more often think about negative consequences than probable positive ones (Beck et al., 2005).

2.4 Pain Catastrophizing

Some individuals, in the above-mentioned context, when they encounter uncomfortable/difficult circumstances, automatically are forced into catastrophic cognitions. The minds of such individuals weave the loops of overthinking almost only focusing on negative outcomes that arise the imaginary probability of a catastrophic outcome (Beck et al., 2005).

According to psychology, the perception of a threat or an unpleasant outcome triggers the anxiety response. There are some unavoidable situations that initiate or detect a threat that automatically requires a problem-solving approach. The cognitive activity becomes an extremely important means to deal with such issues. For some individuals, worrying remains the only response against a potential threat (Ruscio et al., 2001). So it can be deducted that worrying is an automatic intellectual response to deal with any futuristic threat. Individuals, who have anxiety issues, often use the negative lens to analyze the events around them specially those, which contain uncertainty. Such individuals largely shut down the opportunity to positively deal with a negative situation and patterns of negative thinking keep remerging in their behavioral responses. In the psychological literature, worry is defined as an unbreakable chain of negative thoughts that are relatively uncontrollable (Borkovec et al., 1983).Whereas, the process that augments and enhances the negative effects of pathological worry is

called catastrophizing. Conclusively, acute worrying is closely connected with catastrophizing and the individuals make the situation worse for them and keep going into the loop thinking mainly consists of possible negative outcomes. Questions like what if dominate the thinking process of those who tend to worry more than it is required (Kendall, 1987).

Catastrophizing cannot be considered as an effective method as it leads to conception of continues negative outcomes instead of solving the situation that can lessen the worrying signs and attitudes (Hazlett & Craske, 2003). The famous researchers, Davey and Levy (1998) tried to explain this idea through the catastrophic worry term, that indicates toward personal incapacity and perseverative iterative style (repetitive thought process of negative outcomes) because of halfhearted, tries to mitigate the emerging risk. Vasey and Borkovec (1992) concluded that worries that are chronic lead to imaging the negative outcomes in situations (as compared they can actually occur) than those who deal with the situations rationally and that the process of catastrophizing was attached with an enhanced unpleasant effect.

For instance, take chronic pain as an indication, and upon closer study, one can find that it can't be considered a separate phenomenon as there are many other contributing factors. In the case of people that are dependent on others, there are enough examples that related chronic pain with comorbidities, including mood disorders (anxiety and/or depression) and negative sleep patterns. In this scenario, an individual's mental ability/state becomes the defining factor in coping with of various uncomfortable situations (Forgeron, 2013). There are several brain images pointing towards cognitive and emotional modulations of pain related to changes in specific regions of the brain (Kashikar, 2008). In clinical terms, disorders like anxiety, catastrophizing and depression can be found in patients going through acute pain

(Eccleston, 2014). In general, pain catastrophizing is an important phenomenon to understand if one wishes to see a correlation between recurrent feelings like loneliness, overgeneralized thoughts, and chronic pain (Tran, 2015).

Recent breakthroughs in the theory about pain cognitive-behavioral and research tell us that cognitions of pain are actually the way an individual understands and perceives his pain, which may prove to be significant while explaining the variations in process of pain and the disability that occurs in arthritis patients. Past research on arthritis patients indicated that there may be two different cognition related to the pain that can predict the pain and fear related to pain, disability, and catastrophizing about pain. Pain catastrophizing refers to the tendency to exaggerate pain sensations and make the patient feel helpless when confronted with pain (Sullivan, et al., 2001). Pain catastrophizing has been observed in patients with osteoarthritis and rheumatoid arthritis (Keefe, 2000). According to studies on arthritis samples, patients who experience pain catastrophizing not only have higher levels of pain, but also higher levels of psychological disability (France, et ., 2004). Patients with arthritis who catastrophize about pain have higher levels of physical disability, though these findings are not as consistent as those indicating a link between catastrophizing about pain and psychological disability. These observations regarding catastrophizing useful is that they have been gathered even after controlling for demographic variables and medical status variables that are significant in elaborating pain and disability.

2.5. Pain Anxiety

Pain, chronic in nature, can visibly impact their quality of life and health (Merlijn et al., 2006). The pain can affect psychological, somatic, and societal processing and may lead to adverse psychological and physiological distress (Konijnenberg et al., 2006). In the longer run, there can be a possibility that the pain

complaints started in adulthood (Brattberg, 2004). Due to this unclear concept, long-lasting pain in adolescents and children is known as a health problem which is quite complex in nature and requires diverse plans regarding the treatment of disability due to pain (Odell, 2013). Moreover, adolescents with musculoskeletal chronic pain have high chance of disability, for this, there is a recommendation required for different disciplinary treatments (Scheper, 2013).

Pain-related anxiety is a significant aspect while explaining the level of complaints regarding pain and disability related to pain in adolescents (Caes, 2015). If pain is viewed as a sign of injury or threat, it can initiate a preventive response to fear, negative thoughts, and avoidant-protective behavior. If these behaviors get prolonged, they can lead to unpredictable effects which can be sustained by disability and sensitivity related to pain (Vlaeyen and Linton, 2012).

Pain is a multifaceted concept that is involved in deep physical and psychological dysfunctions, particularly in people who are in a lot of pain. The psychological variables that affect how expediently a patient deals with pain, and resilience is among the most imperative factors. That also tells us the psychological possessions the individual is capable of implementing to sustain efficient life and mental health (Huang et al., 2019). Anxiety related to pain is not always related to avoidance behavior. The way pain-related anxiety and avoidance behavior are expressed depends on the situation. In an environment where there are many conflicting aims, the goal of avoiding pain is the only one that can be followed (Crombez et al., 2012). When the value of another life objective surpasses the value of pain and is given precedence, anxiety-related protective actions are repressed. Positive affect and optimism may encourage people to prioritize important life objectives, on the other hand negative affect and damage representations may promote pain control

involvement (Hanssen et al., 2013). This proves that when persons are in pain or hurt, they will continue to be autonomous without negative thoughts about the uneasiness they are feeling, helping them to take that they are in pain and, consequently, heal faster. In distinction, if the pain is misconstrued in a catastrophizing way, a cycle might start. Pain-related anxiety and measures related to safety-seeking have been noted because of these views.

2.6. Resilience

With the beginning of positive psychology, academics are gradually increasing the understanding of the effects of positive psychological concepts on health consequences for the patients facing chronic issues (Bao, 2020). Positive psychological potentials are not only connected with worthy physical and mental consequences in specific patients but also play a vibrant role in re-imagining their conditions to advance (Schiavon, 2017). In clinical practice, many integrating positive psychological capacities have presented positive health consequences; resilience is a focus in this area among these positive psychological (Park, 2014).

Resilience can be taken as the ability to rebound or spring back, or recoil. According to Haase et al., (2017), the process of resilience seeks various resources, both external and internal, to deal with illness. Competency, flexibility (Kimura et al., 2019), and positive flexibility in difficult situations summarize actions taken in an unexpected life direction (Alizadeh et al., 2018). Diverse research tells us that resilience starts with adversity. Perpetual factors of risk are bullying poverty (Brown, 2006), homelessness, and PTSD (Zarzaur et al., 2017), all of which can be thought of as adversarial to the individual.

Similarly, Rutter considered an improvement in resilience is minor. As an initial psychologist, the researchers tested diverse responses to strain skilled with the aid of

using youth and the assisting function that the family, friends, the genetic makeup, and environment, have to steer danger aspects (Rutter, 2012).

Greene (2003), a social worker, gives a detailed analysis about resilience by reporting that it is a biopsychosocial and religious concept related to the transactional dynamic method of character-surroundings exchanges. Greene was of the view works through by adapting a procedure encompassing the goodness-of-suit and takes place throughout an existence path with people, families, and groups experiencing an accurate way of improvement.

In order to comprehend resilience as both a state and a process, a strength-based conceptual analysis is critical. A strength-based notion is a sociological and psychological construct that indicates the client's intrinsic, positive strengths. An illness, or a new diagnosis of illness in a loved one, presents a unique set of challenges. In the patient's experience, a strength-based consideration intertwines exclusive internal traits and physical inadequacies, resulting in resilience (Greene et al., 2004). According to Bonanno et al. (2006), there are many undiscovered pathways to resilience that indicate an individual's strengths, and they identify procedures that can highlight this internal characteristic.

Rutter (2012) proposed viable mechanisms of resilience: decreasing the effect of hazard elements, together with modifications in people' cognition approximately hazard elements, and fending off or decreasing touch with them; decreasing the terrible chain response of terrible existence events; enhancing the degrees of shallowness and self-efficacy and assisting people to get right be successful. In view of the outcomes of preceding research, resilience can immediately imply decreased degrees of perceived misery, higher adjustment, and fitness effects amongst sufferers with persistent

illnesses, which include rheumatoid arthritis, cancer, diabetes, and psychiatric disorders (Lee, 2017).

Psychologists believe that resilience is the primary motive that promotes high positive emotions in patients and higher resilience can assist sufferers to reply fast to the bodily and mental adjustment in the face of disorder. Studies have recommended that resilience, as a dynamic method, isn't always perpetually innate and can be found in positive circumstances (Lim & Shon, 2014). Furthermore, received surroundings, which include schooling and intervention training, potentially have an enhanced effect on people's resilience than congenital genetics. For instance, good intervention can sell the progress of resilience and contribute to a character's augmentation. Increasingly, researchers have studied that resilience, contributed as a protection mechanism or defensive thing, is related to emotional adjustment and will save sufferers from going through misery or at the least lessen it. In addition, resilience is related to fatigue in unique disorder populations (Losoi & Waljas, 2015).

Three-Dimensional Version of Resilience

A three-dimensional version of resilience has been visualized and made out of recovery, sustainability, and growth (Sturgeon & Zautra, 2013). The quantity to which someone continues involvement in nice sports regardless of experiencing ache is sustainability. Recovery is how fast and effectively someone returns to baseline functioning, emotionally and cognitively, physiologically after an ache flare-up. Growth is referred back to the improvement of recent skills, knowledge, or strengths on account of enjoying the handling of ache. Resilient ache variation entails each resilience asset and mechanism. Resilience assets are rather static elements, which include character traits like optimism and extroversion (Boselie et al., 2014). Dynamic elements like emotional states, cognition, and behaviors are resilience mechanisms that

sell greater powerful coping while confronted with ache, which includes social involvement and nice reappraisal of cognition (Garland et al., 2011). Measures of resilience by trait were related to an assembly of positive effects during persistent ache together with accelerated existence satisfaction and accelerated functions of the body (Torma et al., 2013), reduced incapacity (Elliott et al., 2014), and extra emotional nicely-being and nice emotion.

Physical restriction of limb and joint movement of high levels along with sufficient joint pain, stiffness of joint and fatigability has been reported by many patients with rheumatic conditions. Functional impairment results from these problems, limiting practically every aspect of everyday living (work, social and family life, and leisure activities) (Heidari, 2011). Moreover, it has been reported that patients having rheumatoid conditions deal with more distress emotionally than the general population. Nevertheless, individual patients and diagnostic groups vary on the level of distress emotionally for example anxiety & depression, and it varies over time too. Patients of fibromyalgia for example, regularly report higher levels of disturbance psychologically and worse life quality as compared to those having other joint diseases. Patients having fibromyalgia, rheumatoid arthritis or osteoarthritis experience higher levels of discomfort psychologically than the general population. Moreover, 20–40% of these patients are identified as individuals at risk of being diagnosed with clinical anxiety or depression (Evers, 2002). Furthermore, preliminary studies in patients with fibromyalgia & rheumatoid arthritis revealed that psychological therapies help patient subgroups with sufferings the f highest levels (Evers, 2002).

Permanent elements determining functioning, which are necessary for the advancement of various treatment techniques, include knowledge of possible resilience,

as well as risk factors that consider long-term psychological and physical functioning among patients with joint illnesses.

Most studies use the stress–vulnerability and resilience model, which assumes that an individual's long-term processing is determined by a combination of internal risk and resilience characteristics as well as external stress and protective factors in response to an uncontrollable, long-term stressor (such as a chronic rheumatic condition). Internal aspects include personality and genetic predispositions, whereas external factors include acute life stressors and long-term societal strains (Quaedflieg, 2013). In this approach, cognitive-behavioral and physiological elements work together to answer the relationship between internal and outer factors, as well as the repercussions of psychological and physical processing.

There is a shorter research tradition about the resilience effecting the course of disease and psychological and physical functioning in rheumatoid arthritis patients as compared to the effects of risk factors. Identification of the strengths within a person is handled by the resilience approach that allow efficacious adaptation in his or her social world. Although it may appear natural to believe that the risk's existence indicates the nonexistence of resilience, conceptual progress in this area can be made by looking at risk or resilience features separately. This was meant to recognize the efforts of patient, his/her family and friends and even the social circle where they interact and engage cannot be comprehended. Risk and resilience have independent realms of effect when it comes to adaptive capacity, and both must be examined in order to fully comprehend the possibility of healing and the risk of a diminished ability to cope (Smith, 2002).

Briefing patients on how to handle the repercussions of their sickness is largely intended to improve patients' understanding of how to care for their self-management capacities as well as the disease. Most of the time, this strategy is used by giving

chronically ill patients relatively short-term treatment processes with home based projects and different exercises without involving a therapist or by involving a group of various health professionals (Paterick, 2017).

2.7 Social Support and Rheumatoid Arthritis

In addition to resilience, which is a personal protective factor, social support is another factor that can play a significant role in protecting rheumatoid arthritis patients against pain catastrophizing and pain anxiety.

Another thing that shows interest in sufferers of rheumatoid arthritis is their social support circle. Social support is explained as a psychosocial strategy including certain factors that considers the manner in which it provides the values and meanings ascribed to this support; additionally, it may most effectively be conceptualized primarily based on a particular socio-ancient realm (Guzman et al., 2015). According to Cohen (2004), social support indicates toward informational, material, and mental assets that are extracted from the social community the character can anticipate to address strain. Feldman et al. (2008) verify that social support may be given thru all the ones surrounding the character and the assets they offer, which encompass emotional tangible assistance, the possibility to a percentage, not unusual place pastimes and instances for which they sense respected and understood. Andrade and Vaitsman (2002) recognize social support as a relationship through which exchange is generated that is a challenge to responsibilities and mutual dependence bonds for developing a need towards consistency of existence. On the opposite hand, Gonzalez and Restrepo (2010) state that social support in difficult conditions can direct patients to conquer such conditions.

Explicit and Implicit Social Support

Kim et al., (2008) are notable among those defining explicit and implicit social support in a recent review. Cultural differences, they claimed, influenced the use of social support. Eliciting and receiving guidance, emotional consolation, and significant assistance from others is referred to as explicit support (behavioral elements of social support). This viewpoint is mostly based on a Western interpretation of social support (Kim et al., 2008). Implicit support is the consolation that a character obtains either by being reminded that they are important to others (the cognitive aspect of social support) or by having the organization of another character close by without verbally expressing the concerns or anxieties (Taylor et al., 2007).

Social support is a beneficial useful resource that could meet a character's pressing wishes and is furnished via way of means of a community of others, which include own circle of relatives contributors, buddies, colleagues, and different groups (kostove, 2015). Social support can be categorized into two groups: social support (PSS), the subjective support that people may appreciate by focusing on the character's self-information and by perceiving emotions of social support from unique sources; and enacted social support (ESS). This refers back to the objective, realistic, and seen support, together with direct bodily help and help from a social community (Lakey, 2010). It has been recommended that PSS can play an extra position in bodily fitness than ESS (Smith, 2015). Social support without delay can reasonably exerts useful consequences at the fitness-associated with physical health in rheumatoid sufferers. One study discovered that about one-fifth of the rheumatoid sufferers were on horrific phrases with their own circle of relatives and friends because of fatigue (McInnes, 2013). Another research concluded that rheumatoid arthritis sufferers generally brief themselves about enough social support, which determines its effect on fatigue signs

and symptoms. As per the current organized review, numerous outcomes have validated that greater social support certainly had a great impact on fatigue's effects in rheumatoid arthritis (Matcham, 2015).

The general advantages of social support on patient were well diagnosed and documented by widespread populace in addition to humans with diverse persistent illnesses (Krokavcova, 2008). Furthermore, a crucial difference must be made in instances in which social support may be addressed both as a shape reflecting one's rootedness inside the social device or from a useful factor of view (Demange, 2004). It is important while exploring social support that the form of the support displays the wishes of the scenario. Successful variation to a persistent disorder like rheumatoid calls for support from unique assets, amongst which support from others may be very crucial. Functional incapacity impacts the overall performance of day-by-day sports, and a loss of outside assistance may also threaten the independence of sufferers. Thus, a hit variation is carefully related to the supply of social support (Dirik, 2018).

There are peoples' own circle of relatives' support, friend's support, and other significant's support. In social research, low social support has been related to physiological and neuroendocrine indices of heightened strain activity, Together with accelerated coronary heart rate, accelerated blood pressure, and enhanced cardiovascular and neuroendocrine reactions to laboratory stressors (Steptoe, 1996). Social isolation and limited social support were proven to be related to accelerated morbidity and mortality in a bunch of scientific illnesses. For example, in the famous Alameda County Studies, women and men without ties to others had been reported to die from an ischemic coronary heart disorder, cerebral vascular disorder, cancer, or a bunch of different illnesses inside a nine-yr. length as in comparison to people with greater social contacts. The impact of social support on life expectancy seems to be as

substantial as compared to the impact of the consequences of obesity, cigarette smoking, hypertension, or degree of bodily activity (Sapolsky, 2007).

The study material on cognitive sets such as catastrophizing often fails to differentiate between trait and state components of these states of mind. There might be diversity in the tendencies to catastrophize regarding pain in individuals with persistent pain, and observation of people's average response to painful instances that show the consistent features of various component of thinking. Pain catastrophizing has a state factor, which is suggested by significant changes of pain catastrophizing within-person across periods (Artana, 2009).

In the pain field, Chaves and Brown noted tendencies to enhance or exaggerate the negative sides of pain in patients who experienced a painful dental procedure (Chaves & Brown, 1987). In this observation, catastrophizing was constructed as a spontaneous cognitive strategy to reduce stress or pain, the most consistently reported by the patients. Spanos and colleagues (1979) continued to view catastrophizing as a cognitive strategy, but focused the influence of pain-related worry, apparent inability to deal with difficulties in diverting focus from pain (Spanos et al., 1979). Rosentiel and Keefe (2003) also highlighted the incapacity to deal and linked this to feelings of helplessness while elaborating the concept (Rosenstiel & Keefe, 1983). Combining, the term catastrophizing has been utilized in the pain field for many years and academicians have disagreed in what features they view as significant. Despite visible differences in the conceptualization, recurrent features contain attention to negative aspects, continuous negative thinking, and apparent inability to deal with the situation.

Furthermore, changes in pain intensity accurately predict changes in pain catastrophizing, not relying on average pain catastrophizing levels, and in pain-focused psychological therapies, early decreases in pain catastrophizing levels predict more

significant reductions in pain intensity, disability, and despair. An important factor to consider is variation between permanent and less-frequent catastrophizes on the basis of the impact of catastrophizing; the unregulated emotional state can be worsened by the consequences of momentary pain catastrophizing, intensified by more frequent catastrophizing (Turner & Mancl, 2004).

In solving these pain-related problems, catastrophizing can be understood as a maladaptive strategy. Continues upgrading of maladaptive strategies must be priority of over compassing pain rehabilitation initiatives. For potent rehabilitation consequences, it is imperative to take multi-dimensional factors of a person in the account rather than only focusing on biomedical factors (Rachman, 2000).

According to Lazarus and Folkman (1984) for successful development in chronic pain treatments, the process of analyzing a stressful condition consisting of primary and secondary appraisal and responding to a stressor with high spirit is required. In medical conditions, illness perceptions of a patient can influence coping in that particular form. Furthermore, another factor that can impact the patient's ability is an emotional reaction to the perceived medical threat by the individual. (Lazarus, 1984). People's natural coping procedures may have the capacity to impact the consequence of their condition. The number of cross-sectional studies (Leventhal, 1980) shows that there is a relation between surviving techniques and pain and disability, especially for joint pain patients. Catastrophizing defined as concentrating on the magnitude of a stressful situation (Rapp, 2000), in various diverse studies, has shown that it is related to negative outcomes (Perrot, 2008). Enhanced pain and disability in adults with osteoarthritis have also been proven to correlate with passive mitigating procedures such as leaving control of the situation (Somers, 2009).

Systematic evaluations of longitudinal studies have been carried to determine whether managing strategies are predictive of long-term outcomes (Pincus, 2002). These researches have shown that various coping mechanisms, such as catastrophizing and passive coping, are related to poor consequences in individuals dealing with back pain. A study carried out by Martinez, and his co-workers in 2019 shows that the most permanent psychosocial indicator that predicts adjustment to chronic pain is pain catastrophizing (PC) and it can also contribute to the progress and long-term preservation of chronic pain. In a study published in 2020 by Sánchez, pain catastrophizing was found to be contrariwise related to physical processes, overall health perception, energy, emotional role, mental health, and so on, and the global index of health-related quality of life explained 9 to 18 percent of variance explained (Carmen, 2020). Pain catastrophizing indicate towards   negative attitude and creates painful stimuli, which engages incapability to handle pain, worry about the negative consequences of pain increases, as has the perception of a lack of control over symptoms. As suggested by Eccleston et al., 2012, some aspects of pain catastrophizing in children are developmentally typical (rather than harmful), as is usually assumed; higher levels of pain catastrophizing, on the other hand, have consistently been related with lowfer results in pediatric chronic pain.

Over the last 3 decades, pain catastrophizing has gained a lot of attention and has been researched many studies as a major predictor of the outcome of pain and disability related to pain outcome (after surgery and cornification). Pain catastrophizing has been related to a variety of health-related consequences, including pain severity, intrusion of pain in patients' life, physical impairment, and mental health (King, et. al., 2011). Previous work in the field have found that episodic enhancement in chronic pain predicts lower level of positive feelings and high level of negative emotion in

individuals with rheumatoid arthritis. The relation between pain and the use of ineffective pain management measures has been linked to mental suffering such as catastrophizing.

According to another estimate from a comparable organization, chronic pain affects over 20% of the world's population and accounts for roughly 15% to 20% of all physician visits (Häuser et al., 2014). Chronic pain brings problematic experience for patients that is why in most of the cases, it is considered as a disabling experience. It affects people on many stages including their interactions with the circumstances, that's why they often question their own existence (Ojala et al., 2015). Chronic pain is often connected with psychological disorders such as PTSD (post-traumatic stress disorder (Kind & Otis, 2019); chronic stress syndrome (Abdallah & Geha, 2017; Ahmad & Zakaria, 2015); depression and anxiety (Woo, 2010). Above mentioned disorders can be observed in the conventional sense (Shalaby et al., 2018). New research and studies on the issue focuses on linkages between chronic pain and anxiety are in progress (Bilevicius et al., 2020; Rogers et al., 2020; Zale et al., 2019).

Pain anxiety is a new phrase that refers to a quick and negative cognitive, behavioral, and bodily response to pain (Stein et al., 2019). It's similar to the tripartite model of anxiety in that it includes physical, cognitive, and behavioral components (Aiyegbusi et al., 2018; Shanbehzadeh et al., 2017). Pain anxiety is an emotional response of the autonomic nervous system that occurs in response to the anticipation of pain. The sympathetic nervous system in the septo-hippocampal brain areas is activated by fear and anticipation of pain. This is why pain anxiety has been linked to all above mentioned three fact (Asmundson et al., 2004; McCracken, 2013).

Perquin et al., 2000 conducted a study that found that children and adolescents experience pain on a regular basis. Around a quarter of young people have pain that

lasts longer than three months, and 8% of young people say their pain is severe. Chronic pain can have a negative impact on a child's or teenager's ability to cope with emotions and function socially. It's usually linked to anxiety and despair in general. Children and adolescents are also severely handicapped by chronic pain. Furthermore, patients with chronic pain usually lose interest in physical activities and exhibit difficulties in daily activities such as walking and playing sports (Palermo et al,. 2008). Pain, despair, and anxiety are all seen in pediatric fear-avoidance models (Asmundson, et al., 2012; Simons & Kaczynski, 2012).

Catastrophizing and pain anxiety are linked on many basis. Despite the expanding body of evidence, few attempts have been made to place the growing pattern of discoveries into a larger theoretical framework. The is based on earlier work by Waddell et al. (1993). When acute pain is viewed as non-threatening and functional recovery is encouraged, patients are more likely to continue participating in daily activities. When suffering is tragically misinterpreted, on the other hand, a vicious spiral might form. Pain-related anxiety and safety-seeking indicators such as escape and hypervigilance may be triggered as a result of these dysfunctional interpretations, which can be adaptive in the acute pain stage but paradoxically worsen the situation in the long-term pain stage (Becker, 2018). The threshold for further discomfort, such as incapacity and disuse, may be lowered as a result of the long-term results. The fear route in the anticipation of pain is connected to the fear pathway in the presence of pain through an anxiety channel (Simons, 2012).

The concept of pain catastrophizing, as well as general theories of pain anxiety and pain-related fear, are important. These conceptions have ideas that overlap and differ. Anxiety about pain shows that apprehensions and concerns about pain are expected (Huguet et al., 2011). Pain catastrophizing is defined as increased pain

prediction that includes rumination, amplification, and desperation. Fear is a natural uncomfortable emotional response to impending danger (Rachman, 2013). Fear of pain becomes distressing when people begin to anticipate the magnitude and intensity of the pain, which is usually induced by irrational thinking. In paediatric fear-avoidance models (Simons & Kaczynski, 2012), the constructs used to quantify intensity are distinct, yet there are tangible parallels in their history and contemporary understanding. Catastrophizing, for example, is thought to be cognitive in origin, whereas fear is thought to be emotive. However, some people think of catastrophizing as a multidimensional component of the more automatic fear response. Furthermore, some conceptualizations consider fear and catastrophizing to be separate components of a larger pain anxiety response characterized by frightening anticipation of future suffering (Fisher et al., 2018).

Anxiety in response to pain has been identified as a crucial component contributing to enhanced perception of pain and actions. In chronic pain sufferers, pain anxiety is more severe than depression in terms of predicting nonspecific somatic complaints (McCracken et al., 1998). Pain anxiety, as a relatively new model developed by McCracken, certainly gives more information that is essential in understanding patterns of chronic pain. Pain anxiety is a recurrent emotion related to pain. There are instances that patients often cannot differentiate between anxiety and pain because of the overlapping and frequency. Pain catastrophizing, anxiety, and response expectancies are three of the most studied variables in this regard (Farin, 2015).

When investigating a link between crucial cognitions that are related to pain emotions as well as acts and the BIS–BAS model of pain, many researchers have begun to demonstrate promising results (Jensen et al., 2016; Sun et al., 2020).

Pain catastrophizing, BIS-related characteristics have been suggested to be signs of anxiety and depression and behaviors of pain-related avoidance (Day et al., 2019). A trait inclination toward BIS emotion has been linked to pain catastrophizing. (Muris et al., 2007), and in patients of fibromyalgia lower BAS feeling is found. Moreover, in chronic pain patients reward responsiveness has been reduced (Elvemo et al., 2015). Emotional reactions appear to be controlled solely by whether the system of BIS or BAS is more active or not. Individuals exhibit trait changes during the action of the two systems (De Pascalis et al., 2013), which can tell changes in the tendency to catastrophize and in emotional balance. BIS action encompasses negative behavioral patterns, including introspection, anxiety, pain, and depression (Merchan et al., 2019). A study of psychophysiological was conducted some years ago (Jensen et al., 2015) that discovered relation among frontal alpha irregularity and pain catastrophizing susceptibility as an indicator of BIS action in patients with injury related to spinal cord and continuing pain. This shows a relation among emotional regulatory disruptions and BIS–BAS activity.

After the BIS–BAS context, it can be understood that BIS-related cognitive gratifications and processes could be reflected by catastrophizing. The BIS system is understood to be underlying psychological characteristics such as catastrophizing and be a neurophysiological system. Therefore, when facing pain the BIS system initiates these kinds of cognitive answers (Jensen et al., 2015).

It is of interest that the role of physiologic processes was focused exclusively by early theories of pain. Descartes' notion of pain specificity, for example, treated pain solely in mechanical terms, positing that pain drive was a direct correlate of tissue injury severity (Descartes, 1989). However, a purely physiologic perspective of pain could not account for the wide and varied range of reactions experienced in response to

painful stimulation, as scientific experiments and anecdotal reports have demonstrated. In recent years, it has become increasingly obvious that psychological variables play a role in pain.

The relation between pain and anxiety is also very important, as depression and anxiety appear together most of the time. Pain can cause uncomfortable traces of anxiety, which consequently can increase pain sensitivity, with the continuation of the pain experience. Moreover, anxiety disorders and chronic pain overlap when it comes to underlying cognitive and behavioral processes, such as increased anticipation of threat and anxious escaping of physical exertion (Asmundso, 2009).

The neural pathways of rheumatoid arthritis patient's initiate pain-related anxiety are still under exploration, but in emotional-affective behavior and anxiety disorders, the amygdala can play a key role. The amygdala is an important component of the brain network that is purely responsible for the emotional-affective component of pain (Pedersen, 2007). The amygdala is also thought to play a role in the reciprocal relationship between pain and emotional states and disorders like anxiety.

It was regarded one of the primary disciplines of positive psychology research in the second part of the twentieth century. This idea relates to a person's ability to regain homeostasis and avoid developing a psychopathological consequence after experiencing significant stress (Margrita, 2011). As a result, resilience is one of the most important characteristics among people with chronic illnesses like autoimmune rheumatic disorders (ARDs). In patients with ARDs, disease activity, severe health conditions, and loss of cognitive capacity all contribute to a high level of stress (Quiceno, 2013). As a result, patient resilience in these categories may be essential to the disease's outcome, as the stronger the patient's resilience, the lesser the vulnerability and negative effects of the condition. Optimistic approach, active and positive coping,

social support, happiness, determination, are all factors that can help you be more resilient (Alex, 2010). Rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) are two of the most common ARDs, both of which are associated with mental symptoms and varying levels of resilience (Liu, 2017).

According to a study led by Yomei Shaw in 2019, rheumatoid arthritis patients develop resilience through a dynamic process of learning in response to new challenges. Patients utilize a combination of behavioral and emotion management methods to increase resilience. These activities can assist patients, health care providers, and researchers working on behavioral therapy and social support programs for rheumatoid arthritis and other chronic diseases.

Numerous studies have shown that emotion and cognitive processes have a role in the feeling of chronic pain. (Brown et al., 1989; Keefe et al., 1992). Chronic pain is frequently related with depressive mood in studies on emotion and chronic pain. (Brown et al., 1989; Sullivan et al., 1992). Similarly, anxiety has been shown to influence pain, despite the fact that the majority of pain and anxiety research has concentrated on acute pain. Lately, attention has been shifted to anxiety concerning chronic pain (McCracken, 1992). A scale to measure pain-related anxiety has been developed by McCracken and colleagues. These scientists reasoned that pain-induced anxiety is similar to phobic responses that are out of proportion to the real threat (McCracken, 1995). Awareness how chronic pain sufferers deal with or adjust to their condition requires an understanding of the wide range of patients' abilities to cope with their illness while maintaining a high quality of life. There are different perspectives on how to cope with illness and discomfort. Brown and Nicassio define coping as passive pain-relieving techniques such as bed rest and activity restriction (1987). These techniques are frequently connected to poorer overall adjustment, greater depression,

and functional impairment. (Evers and colleagues, 1998).On the other hand, it has been hypothesized that active coping (e.g., despite suffering, striving to maintain activities) is linked with a better proclivity for dealing with sickness. Although there is some evidence for this viewpoint, (Brown et al., 1989) but this hypothesized association has not been consistently supported by studies. (Evers et al., 1998).

Excessive anxiety and passive-avoidance behavior are widespread in practically all rheumatic illnesses, according to evidence from experimental and prospective research, and have consistently predicted patients' deterioration in long-term functioning (Vlaeyen, 2000). Furthermore, mental images and beliefs about the condition, such as a sense of helplessness, can influence physical symptoms not just in terms of their presence and severity, but also in terms of their impact on everyday life (Evers et al, 2001). External stressors and internal stress vulnerability variables, in addition to internal processes, influence disease progression, particularly in disorders like rheumatoid arthritis, which is characterized by a weakened immune system and persistent inflammatory processes. According to multiple research, stresses such as persistent daily impairment and how people respond to them, such as by worrying excessively, affect physical functionality and disease development in rheumatoid arthritis (Brouwer et al., 2010). Psychological and physical functioning are thought to be protected by external and internal resilience elements. Extraversion and a sense of purpose in life have been associated to successful adaptation required during arthritic flare-ups, while resources such as the presence of positive emotional states have been found to help with adaptation (Zautra. et al., 2005). Furthermore, data suggests that resilient cognitions about the disease have a role in resilience, such as acceptance, which can guard against a depressed mood and worsening physical symptoms. Designing screening instruments to detect patients at risk of poor adaptation, as well as

customizing medicines to specific risk profiles, requires knowledge of general and illness-specific risk and resilience factors that influence long-term disease prognosis (Boden, 2018).

Several physiological pathways have been hypothesized to mediate stress–resilience reactions in patients with rheumatic illnesses. The hypothalamic–pituitary–adrenal (HPA) axis is activated in response to stress, and because this relationship has an impact on the immune system, stress-related factors may have an impact on immunological-mediated illnesses like RA. External stressors, for example, cause the release of hormones such as cortisol, which is known to modulate the secretion of pro-inflammatory cytokines, potentially altering the progression of inflammatory illnesses such as RA (Brouwer. et al, 2010). The most consistent evidence of the stress response's involvement in inflammatory rheumatic diseases is the findings of inflammatory responses and altered HPA-axis activity in patients with RA after exposure to stress or stress-management interventions (in comparison to baseline responses or control conditions without such exposures) (Yadav et al., 2012).

Several treatment approaches, such as cognitive–behavioral therapy and self-management training, have been introduced to help patients with rheumatic conditions improve their self-management abilities, improve their psychological and physical functioning in the long run, and reduce the risk of a poor disease outcome (Dixon, 2007). Such approaches range between illnesses, particularly in terms of the major goals and intensity of treatments, as well as contact with the active participation of therapists. Nonetheless, they all share a common goal: to enhance patients' long-term psychological and physical functioning using a relatively short-term strategy (often including evidence-based cognitive-behavioral concepts). In general, the treatment can be divided into two distinct techniques that differ from one another.

Several studies, meta-analyses, and systematic reviews of studies in patients with fibromyalgia, osteoarthritis, and rheumatoid arthritis have found that multimodal cognitive behavior treatments are more effective than interventions based primarily on patient education in reducing disability, pain, and psychological distress (Leeuw. et al., 2008). Furthermore, therapy studies in patients with rheumatoid arthritis revealed that, for example, stress management and resilience interventions that reduce cortisol or IL6 levels alter the psychophysiological stress and immune systems (Pradhan. et al., 2007).

The previous researcher by Shaw & Bradley (2019) suggests that sufferers with autoimmune illnesses may also broaden more potent resilience as an adaptive reaction to the chronicity in their circumstance and be consequently geared up with greater powerful coping techniques to cope with sudden worrying. Resilience additionally seems to buffer melancholy and strain, which in flip not directly reduces ache, in preference to documented mechanisms for a right pathway to ache in step with notably, in a single populace-primarily based totally examine of older adults. Considerable ache accelerated the chance of depressive signs and symptoms via way of means of a thing of 4; meanwhile, resilience moderated the affiliation via way of means of approximately 12% (Bauer & Emeny 2016).

In people with persistent pain, resilience elements (i.e., pain acceptance, and adaptive pain strategies) are higher predictors of psychosocial components of pain tolerance (i.e., self-efficacy, and worldwide intellectual fitness) in comparison to hazard elements (Alschuler et al., 2016). In the context of the broaden-and-construct theory, pain resilience is a dynamic method that may be strengthened to fight the sick consequences of unfavorable pain effects, enhance functioning, and facilitate higher variation to control pain (Hassett & Finan, 2016).

While the value of resilience in treating chronic pain patients cannot be overstated, the existence of social support in patients' lives also cannot be overlooked. Theoretical models for pain catastrophizing and social support, including cognitive evaluation and attention-bias models have been developed (Severeijns et al., 2004; Michael, 2004). Intrapersonal processes are a common emphasis for these models. Catastrophic cognitive assessments and information processing biases toward the most dangerous aspects of pain are examples of these processes. According to Sullivan and fellows, people's suffering emotions elicit aid or compassionate responses from others, which is known as pain catastrophizing. The interpersonal processes and the social environment in which pain and pain behavior have been rooted, are highlighted in the communal coping model of pain catastrophizing (Sullivan et al., 2001).

A number of research demonstrate that pain catastrophizing is linked to other people's reactions to those who are in pain. Patient-reported spouse solicitude and social support are linked to patient pain catastrophizing (Keefe et al., 2003) and positive responses are also associated with pain catastrophizing. Some researches, however, imply that patient pain catastrophizing is related to spouse punishment and negative reactions (Waxman et al., 2008).

Pain catastrophizing cognitions must create identifiable indications of pain in order to be communicative, according to the communal coping model. In a study with healthy subjects, Keefe et al. (2003) investigated whether cancer patients' pain catastrophizing was associated to their spouses' own reactions to patients. They discovered that spouse assessments of high caregiver burden and critical sentiments toward patients, as well as spouse ratings of patient's pain magnitude and duration of pain behaviours, were all connected to patient pain catastrophizing. Cano et al. (2012) ran an experiment with couples to see how chronic pain affected their lives. They

discovered increased patient pain catastrophizing was connected with more extreme emotional disclosures regarding pain towards the spouse, but that these disclosures were also associated with even more frequently invalidating reactions from the spouse. Pain catastrophizing is associated with apparent signs of pain – both physically and verbally – as well as responses from others, that are often not pleasant and helpful (Cano et al., 2012).

Social support, socioeconomic background, patient–caregiver, and patient–spouse connections are three topics that have gotten a lot of attention in studies. The results of a study on social support. Social support is described as the process by which interpersonal relationships enhance well-being and safeguard people from health decreases, especially when they are confronted with difficult life circumstances (Lanza & Revenson, 1993).

Many researches have looked into the link between social support and health and psychological outcomes in people with arthritis. In a study of 54 people with rheumatoid arthritis, Doeglas et al. (1994) discovered that those who received more daily emotional support had significantly greater levels of psychological well-being than those who did not. Those who had a higher level of social connection were less melancholy as well. Evers et al., (1998) discovered that those with smaller social networks were substantially more likely to have a decline in mobility in a study of participants with rheumatoid arthritis who sought care in the early stages of the disease. Penninx et al. (1997) studied 1,690 adults aged 55 to 85 years, of whom 719 had no chronic disease, 612 had mild arthritis, and 359 had severe arthritis in a community-based sample. The findings demonstrated that emotional support reduced the impact of arthritis on depressed symptoms, demonstrating the buffering effect of social support in this situation (Penninx et al., 1997).

The Colombian National Mental Health Survey (Ministerio de Salud y Protección Social [MSPA], 2015) highlights the significance of analyzing social support that is known as exchanges among contributors of a community, or for the duration of relationships. In both case, what is exchanged is known as transfers or supports, which can be of diverse types: material (money, accommodation, food, clothing, and charge for services), instrumental (care, transportation, and housework), emotional (affection, organization, reputation, and listening) or cognitive (stories, information, and advice) type. A survey assessing social support in suffering youth found out that 36% of them continually locate a few diploma of support, 18.1% nearly continually locate a few diploma of support, 37% from time to time locate it, and 8.nine% in no way do. Among youth who requested for support, 94.4% went to own circle of relatives contributors, and 19.1% to friends. Although an excessive percent of youth locate social support, a crucial percent of them do now no longer continually get it regardless of the want for it, given the method of individuation skilled via way of means of youth, and that is characterized via way of means of a battle for autonomy and private identity.

By 2014, Colombia's populace handed forty seven million, 22% of which had been boys and girls (Unicef, 2014). In current years, the theory of formative years and the point of interest has shifted closer to its nice elements, and to reveal it as a length of evolution for the duration of which the adolescent faces an extensive variety of needs, conflicts and opportunities. However, this doesn't suggest that formative years isn't always a hard level (each for the adolescent and people round them) wherein own circle of relatives conflicts, temper modifications, and publicity to hazard behaviors may also boom (Arnett, 2008).

Social support can be obtain from own circle of relatives, friends, coworkers, fitness-care professionals, or contributors of a community (Shumaker & Brownell, 2010). It covers instrumental and informational wishes (Sjolander & Ahlstrom, 2012) and mitigates worrying existence events. The current definition of social support specifically emphasizes the significance of belief. For instance, Meadows (2007) defines social support as ideals and/or perceptions that imply that a character is part of an interpersonal courting that consists of mother and father and peers. Social support assesses people' self-assurance with inside the availability of good enough assist while needed (Roohafza et al., 2014). Social support appears to be very crucial to the character perceiving support, because it promotes shallowness, which in flip has a nice impact on intellectual fitness (Veselska et al., 2010).

Individuals who had desirable relationships with own circle of relatives and friends had been greater resilient while confronted with issues and had been probable to address issues greater effectively, in addition to enjoy a nice adjustment and intellectual fitness effects. Moreover, the term "social community" refers to linkages among people that could or might not offer social assist and that could serve features apart from offering assist (Heaney & Israel, 2008).

The literature has paid much focus on the importance of social support as a coping strategy (Lazarus, 1991). In different words, while someone encounters a sturdy stressor, better degrees of social support may also support him/her lessen the chance of appraising the scenario as threatening (Rzeszutek et al,. 2017). A sturdy perceived availability of social support is beneficial for handling strain. Individuals with such support are much less at risk of strain and greater a hit in different coping techniques (Narayanan et al,. 2016), may also research coping mechanisms from others of their social group, understand greater to be had support from friends and own circle of

relatives, and are looking for greater social support in reaction to strain (Wu & Yang, 2012).

Social support has been conceptualized as a crucial thing in bodily and mental nicely being. Literature has additionally proven its significance with inside the manner people cope with rheumatoid arthritis due to the fact similarly to lack of functionality, a persistent disorder which include rheumatoid arthritis magnifies the strain of ordinary existence and creates new stresses for all own circle of relatives contributors. This accelerated strain may also sell patient's wishes for social support however can also have an effect on people who are greater capable of offer them assist. The behavioral and emotional effect of social support on melancholy manifests itself through numerous strategies (Cohen, 2004).

On one hand, social support could have a right away impact selling a powerful, open and non-managed touch with the existing second reducing character's tendency to ruminate approximately ache and bodily limitation. On the opposite hand, social support also can sell the upkeep of the character's huge sports and reinforces valued existence sports. Connecting with the existing second willingly demanding situations rheumatoid arthritis people to do not forget what they need their existence to face for in unique existence domains (Hayes & Strosahl, 2004). A persistent ache disorder which include rheumatoid arthritis may also offers the victim with many activities wherein their responses to ache may also flow them far from fitness existence functioning. They may also examine their ache in a distressing manner and take those reviews to be true. They can also regard ache and different emotions as company motives to disengage from crucial valued elements in their existence, and act to govern or keep away from painful stories regardless of the shortage of nice consequences those behaviors produce (McCracken, 2003).

Established upon earlier work (Lethem et al., 1983; Philips, 1987; Waddell et al., 1993), Vlaeyen et al. (1995) and Vlaeyen and Linton (2000) projected a cognitive behavior model that has become famous as the model of fear & avoidance. The mode in which pain is construed could lead to two unlike paths is the basic precept of this model (Fig. 1). While perception of acute pain is taken as non-threatening, affected persons are likely to continue commitment in daily events and in this way their functional recovery is promoted. When suffering is tragically misinterpreted, on the other hand, a vicious spiral might emerge. Pain-associated anxiety nowadays could be the outcome of functional understandings and related wellbeing pursuing actions such as hypervigilance and avoidance/escape, which may be adaptive in the critical pain phase but surprisingly exacerbate the problem in the event of chronic pain. Long-term issues, such as disuse and incapacity, may lower the threshold at which subsequent pain may be recognized. In the presence of pain, an anxiety path is added to the fear path in the anticipation of pain.

Individuals will continue the road of surviving their freedom without negative feelings of the pain from which they experience, thus leading them to accept that they are suffering from a pain that gradually aggregates to a faster retrieval, as shown in the following model. Contrary to popular belief, a cycle might start if pain is misread in a catastrophizing manner. It has been recognized that such sensations might rise to pain-associated anxiety and related well-being seeking behaviors such as avoidance. On the other hand, because of the incapacity and lack of use, the pain may worsen and enter a long-term phase.

Figure 2

The fear-avoidance model of chronic pain
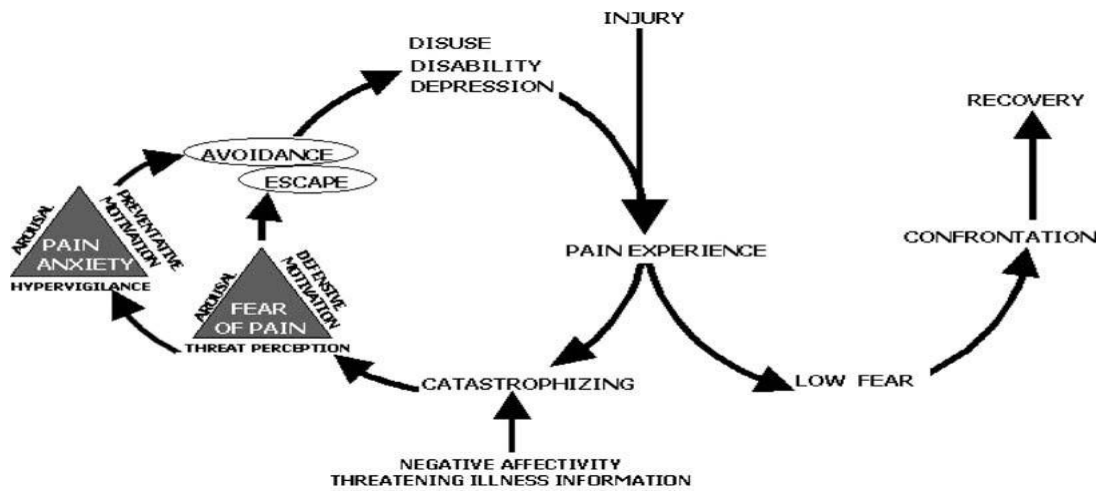
Note. This model is based on the fear-avoidance model of Vlaeyen and Linton (2000) and the fear-anxiety-avoidance model of Asmundson *et al.* (2004).

The basis of the fear- avoidance model is on the work of a number of people who identified the relevance of patients' pain beliefs and their function in developing debilitating fear and avoidance (Fordyce, 1967). Malec et al. (1977), for example, consolidated some of these patient views into fables about pain. The majority of these fables are based on the incorrect assumptions that pain is the first and an unmistakable marker of tissue injury that necessarily leads to incapacity and second that the pain-related misery can only be cured therapeutically. Fear and avoidance, as per Philips (1987), result in a behavior configuration that is disharmonious with the primary biological disease, leading to an increased anxiety about pain. Kori et al (1990) highlighted the anxious character of pain fear and avoidance. Patients have 'kinesiophobia,' which is an unreasonable and agonizing fear of (re)grievance and movement, according to these researchers. This particular model of chronic pain which was first proposed by Vlaeyen et al. (1995) and has since been revised and improved,

is the most important model in this area. The model uses the sensation of a pain episode as its preliminary point but leaves the sources of this initial affair unresolved. As a result, the approach avoids the potentially fatal trap of psychological suffering. It is a typical scientific blunder to go to quasi-psychological explanations when biological antecedents cannot be found (Merskey, 2009). Pain triggers a series of cognitive, emotional, and behavioral reactions in the FA model, which may or may not increase pain and impairment.

To support in chronic pain populations, the legitimacy of the FA model now there is ample evidence and several have summarized the current state of evidence reviews (Gheldof, 2010). Although the significant association was not always found between changes in cognitive features (catastrophizing) with fluctuations in pain strength (Woby, 2004), repeatedly their relationship with a disability has been shown. The intensity of pain in patients with high scores on pain related fear is tended to be over predicted, which they practice during physical inspections (Trost, 20080. They achieve poorly such as lifting an arm weight or involving in trunk extension and flexion compared to the patients who score low on pain-related fear and on physical tasks. Pain-linked fear is a risk aspect for the development of chronic low back pain through reduced participation in activities of daily life, bigger work loss, for greater perceived incapacity and more recurrent sick leave and for lesser treatment performance for low back pain patients (Asmundson, 1999). The conversion from severe to long-lasting low back pain and associated consequences such as disability and sick leave as recommended by several prospective studies may be influenced by beliefs of this model (Jensen, 2010). On the contrary, this model specifies that by reducing pain-related fear participation in daily life activities may be amplified. In detail, enhancements in functioning, pain reduced emotional distress, and interfering with daily activity is

foreseen by reductions in pain-related nervousness (Wideman, 2011). Decreases in these beliefs about work and physical activity have been clarified by the conclusions of one study joined together with increased insights of regulator over pain with 71% of the variance in declines in pain-related incapacity (Woby, 2004).

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

The current followed the cross sectional research design to find out the role of pain catastrophizing and pain anxiety in the patients of rheumatoid arthritis and to see the moderating effect of resilience and social support.

3.2 Research Design

The study followed cross-sectional research design and has two stages:

Phase 1: Pilot study

Pilot testing of the study measures and the main study. The urdu versions of Pain Catstrophizing Scale (McCracken et al., 2002), Pain Anxiety Symptom Scale (Sullivan et al, 1995), Connor-davidson Resilience Scale (Connor & Davidson, 2003) and Multidimensional Scale of Social support (MSPSS) (Zimet, et al., 1988) were used. This phase was carried out to investigate the trend of relationship among variables of research and to see the psychometric properties of the study scales. Main study was conducted after the analysis of pilot study.

Phase –II: Main Study

The results of pilot study assured that the study measures are appropriate to use with the Pakistani rheumatoid population. The main study was conducted in different government hospitals of Islamabad and Rawalpindi.

3.3 Research Instruments

The following instruments have been used in the study.

Scale of Pain Anxiety Symptoms

McCracken LM and Dhingra L. constructed PASS-20 in 2002. The purpose was to assess pain-related anxiety and was conducted by removing 20 items from its unique 40-item parent measure i.e. PASS. There are four subscales in PASS i.e., cognitive anxiety responses (1 to 5), fearful thinking (6 to 10), escape and avoidance (11 to 15) and physiological anxiety responses (16 to 20). A 6 points Likert scale is used to rate items and range from 0 (never) to 5 (always). Satisfactory internal consistency (α=.81), test-retest reliability (r=.95) and validity is shown by PASS according to McCracken & Dhingra, 2002.

Pain Catastrophizing Scale

This scale was developed in 1995 by Sullivan et al. at the University Centre for Research on Disability and Pain. The purpose was to facilitate the studies focusing on effect of catastrophizing on pain experience and its mechanisms. There are 13 items in PCS and focus is on thoughts and feelings. With a three-factor solution, a reliable and valid measure of catastrophizing is determined to be the original PCS. 3 factors are as; rumination (item 8, 9, 10, 11), ruminative thoughts, worry and incapability to constrain pain-related views; intensification (item 6, 7, 13), intensification of the nastiness of pain and expectancies for negative outcomes and weakness (1, 2, 3, 4, 5, 12), incapability to deal with painful circumstances. 13 items are scored on a Likert scale which is 5-point. Range is from zero (not at all) to four (all the time), linking the matters to the previous traumatic event. Internal consistency of the PCS has been demonstrated to be adequate to outstanding. (Constant alphas: total PCS = .87, cogitation = .87, intensification = .66, and weakness = .78 (Sullivan et al., 1995).

The Connor-Davidson Resilience Scale

To measure resilience, the Urdu version of the 25-item CD-RISC was used. Original version of this scale was developed by Connor & Davidson in 2003. Five-point response scale (0=*'not true at all'* to 4=*'true nearly all the time'*) is used in CD-RISC to respond to items. The scale is assessed according to how respondents felt in the previous month and how much they agreed with each item.. Items are like: 'I can deal with whatever comes my way'. Higher scores

indicate higher resilience and total scores range within 0-100. CD-RISC showed high internal consistency (Cronbach's alpha of 0.89), high test-retest reliability, and correlation with measures such as the Sheehan Social Support Scale ($r = 0.36$, $p < 0.0001$) as per previous studies.

Multidimensional Scale of Social support (MSPSS)

Zimet, Dahlem, Zimet & Farley in 1988 constructed the 12-item MSPSS to measures participants social support utilizing three informal sources: Family (3, 4, 8, 11), Friends (6, 7, 9, 12), and Significant Others (1, 2, 5, 10). A seven-point Likert response format (1 = 'very strongly disagree' to 7 = 'very strongly agree') is used to take response from participants. Higher scores of the participants indicates greater social support from all three sources and score ranges within 12-84. High internal consistency of 0.88 was reported after evaluation by Zimet et al. After completing the questionnaire, test-retest reliability of 0.85 was obtained across a 2 to 3 month period.

3.4 Verification of tools - Pilot Study

Objectives

Following are the objectives of the pilot study:

- To establish the psychometric characteristics i.e. item-total correlations, reliability coefficients of the scales.

- To explore the relationship trends between different study variables.

Sample

Sample of pilot study comprised 50 patients (male = 10, female = 40) with an age ranged from 22 to 60 years (M= 45.66, SD= 14.66). A purposive convenient sampling method was used and sample was collected from different Government hospitals of Islamabad.

Table 1

Details of the features of the Pilot Study (N=50) Sample

Sample Characteristics	Features	Total Sample
		$(N = 50)$ $f\%$
Gender	Males	10 (20%)
	Females	40 (80%)
Age	Early adults	30 (50)
	Late adults	30 (50)

Procedure

The sample was approached with the formalpermission of concerned authorities of the hospitals and the participants themselves. The hospital authorities were briefed on the research's objectives and nature, as well as the expected timeframe for data collection. Other aspects of the research's ethics were also considered, such as the participants' complete freedom to stop participating in the study at any time and withdraw from the study. The participants were assured of their right to privacy and secrecy, as well as the assurance that their disease information would be kept completely confidential and utilized only for this study. The Researcher approached each participant personally and gave them a brief explanation of the study's purpose and objectives. The instruments were administered on an individual basis. On each day of data collection, each participant took roughly 35 minutes to complete the questionnaire. Following the collection of data, the relevant statistical analysis was carried out in order to extract the result.

Results

Results of the pilot study are included in this section of the study counting the reliability, item-total correlations and descriptive statistics of the study variables

Table 2

Inter-scale correlation, alpha coefficients, and descriptive statistics of the study variables (N=50)

	1	2	3	4	5	6	7	8	9	10	11
1. PCS-Rum	-	.85**	.69**	.65**	.60**	.70**	.35	-.40**	-.31*	-.38**	-.48*
2. PCS-Mag	-	-	.72**	.69**	.56**	.76**	.31*	-.39**	-.39*	-.35*	-.40*
3. PCS-Helpless	-	-	-	.91**	.69**	.85**	.50**	-.52**	-.48*	-.49**	-.44*
4. PAS-Cog	-	-	-		-.68**	.77**	.54**	-.53**	-.45*	-.46**	-.45*
5. PAS-Fear	-	-	-	--		.62**	.43**	-.47**	-.29*	-.48**	-36*
6. PAS-Escp	-	-	-	--	-		.43**	-.40**	-.27*	-.42**	-.43*
7. PAS-Physio	-	-	-	--	-	-		-.39**	-.14	-.30*	-.55
8. Resilience	-	-	-	--	-	-	-		.45**	.60**	.59**
9. MSPSS-fam	-	-	-	--	-	-	-	-		.66**	.76**
10. MSPSS-frien	-	-	-	--	-	-	-	-	-		.78**
11. MSPSS-OS	-	-	-	--	-	-	-	-	-	-	-
α	.84	.81	.94	.92	.84	.88	.58	.94	.71	.91	.92
Skewness	-.14	-.60	-.63	-.57	-.15	-.93	-.23	-.22	-.38	.12	-.38
Kurtosis	-.90	.33	.23	.31	-.70	.05	-.14	-.64	-.68	-1.10	-.73

p<.01, p<.05

Note: PCS-Rum = Pain catastrophizing scale rumination subscale; PCS-Mag = Pain catastrophizing scale magnification subscale; PCS Helples = Pain catastrophizing scale helplessness subscale; PAS-Cog = Pain Anxiety Symptom Scale cognition subscale; PAS-Fear = Pain Anxiety Symptom Scale fear subscale; PAS-Escp = Pain Anxiety Symptom Scale escape subscale; PAS- Physio = Pain Anxiety Symptom Scale physiological subscale; Resilience = The Connor-Davidson Resilience Scale (CD-RISC-25); MSPSS_OS = Multidimensional scale of social support other significant subscale; MSPSS_Fam = Multidimensional scale of social support family subscale; MSPSS_Frien = Multidimensional scale of social support friends subscale.

Table 2 shows the descriptive analysis in order to estimate the trends of data. According to the mean value and standard deviation, normal deviations from the means on all variables are observed. The data is normally distributed as indicated by the Skewness.

Furthermore, Table no. 2 demonstrates linear relationship among all the variables of the study. According to table, all the sub-scales of pain catastrophizing scale are positively correlated with all the sub-scales of pain anxiety symptom scale. all the sub-scales of pain catastrophizing scale ($p< .01$) and pain anxiety symptom scale ($p<.01$) show a substantial negative linear relationship with the Connor-Davidson resilience scale. The cognitive anxiety sub-scale of pain anxiety scale ($p< .01$), fearful appraisal sub-scale of pain anxiety scale ($p< .01$), escape avoidance sub-scale of pain anxiety scale ($p< .01$) and physiological anxiety subscale of pain anxiety symptom scale shows a negative significant correlation with all sub-scales of multidimensional scale of social support. Similarly, same table indicates the significant level of correlation among all the subscales of multidimensional scale of social support ($p< .01$) which indicates the importance of social support for patient of rheumatoid arthritis. The Connor-Davidson resilience scale shows a significant positive correlation ($p< .01$) with all sub-scales of multidimensional scale of social support. The rumination sub-scale of pain catastrophizing scale shows a significant negative correlation ($p<.01$) with all sub-scales of multidimensional scale of social support. magnification sub- scale of pain catastrophizing scale shows a significant negative correlation ($p< .01$ with all the sub- scales of multidimensional scale of social support. Helplessness sub-scale of pain catastrophizing scale shows a significant negative correlation ($p< .01$) with all the sub-scales of multidimensional scale of social support.

Only physiological subscale of pin anxiety did not show significance relation with rumination, subscale of pain catastrophizing and others; significant, subscale of social support scale.

Table 3

Item Total Correlation and Corrected Item Total Correlation of Pain Catastrophizing

Scale with its Sub-Scales (N=50)

Item	Item-Total-Correlation	Corrected Item-Total-Correlation
	Rumination	
8	.67**	.51
9	.84**	.71
10	.86**	.74
11	.87**	.73
	Magnification	
1	.86**	.67
2	.77**	.53
3	.90**	.77
	Avoidance	
1	.68**	.86
2	.71**	.80
3	.61**	.76
4	.83**	.90
5	.70**	.80
6	.67**	.76

**p<.01

The table 3 shows the item correlation and corrected-item correlation of all 11 items of Pain Catastrophizing Scale divided in to 3 sub-scales i.e. rumination sub-scale, magnification sub-scale and Avoidance subscale. . All of the 11 items show a significant positive correlation ranging between minimum r= .61** and maximum r=.90**. The good level of reliability of items indicate that the scale can be use in the current study.

Table 4

Item Total Correlation and Corrected Item Total Correlation of Pain Anxiety

Symptom Scale with Its Sub-Scales (N=50)

Item	Item -Total Correlation	Corrected Item-Total Correlation	Item	Item-Total Correlation	Corrected Item-Total Correlation
	Cognition Anxiety			Escape Avoidance	
1	.85**	.88	11	.82**	.74
2	.90**	.79	12	.89**	.81
3	.88**	.74	13	.90**	.84
4	.86**	.91	14	.81**	.70
5	.82**	.79	15	.73**	.55
	Fearful Appraisal			Physiological Anxiety	
6	.85**	.75	16	.73**	.49
7	.89**	.53	17	.78**	.59
8	.66**	.49	18	.69**	.47
9	.76**	.72	19	.53**	.30
10	.75**	.80	20	.58*	.36

* $p < .005$, **$p < .01$

The table 4 shows item-correlation and corrected item correlated of four sub-domains of pain anxiety scale. All the items have been observed to have a significant positive correlation ($p < .01$)($p < .005$) with the total of their domain indicating that all the domains of pain anxiety scale are internally consistent.

Table 5

Item Total Correlation and Corrected Item Total Correlation the Connor-Davidson Resilience Scale (N=50)

Item#	Item-Total-Correlation	Corrected Item-Total-Correlation
1	.69**	.66
2	.68**	.64
3	.52**	.28
4	.74**	.71
5	.83**	.80
6	.74**	.77
7	.83**	.72
8	.79**	.66
9	.75**	.49
10	.69**	.58
11	.53**	.69
12	.62**	.70
13	.72**	.78
14	.73**	.75
15	.80**	.34
16	.77**	.74
17	.71**	.68
18	.51**	.47
19	.31*	.24
20	.32*	.28
21	.59**	.54
22	.64**	.60
23	.61**	.56
24	.76**	.73
25	.78**	.75

**p<.01

The table 5 shows the item correlation and corrected-item correlation of all 25 items of the Connor-Davidson resilience scale. All items of the scale show a significant positive correlation ranging between minimum r= .31** and maximum r=.83**. The good level of reliability of items indicate that the scale can be use in the current study.

Table 6

Item Total Correlation and Corrected Item Total Correlation of Multidimensional Scale of Social support with its sub-scales (n=50)

Item	Item-Total-Correlation	Corrected Item-Total-Correlation
Significant others		
1	.91**	.83
2	.89**	.81
3	.90**	.83
4	.89**	.81
Family		
7	.81**	.67
8	.83**	.70
9	.65**	.43
10	.85**	.75
Friends		
13	.97**	.95
14	.96**	.93
15	.98**	.96
16	.97**	.95

**p<.01

The table 6 shows item-correlation and corrected item correlated of three sub-domains of multidimensional scale of social support. All the items have been observed to have a significant positive correlation (p<.01) with the total of their domain indicating that all the domains of social support scale are internally consistent.

Discussion

To determine the psychometric properties of the scales was the main purpose of the pilot study i.e. Multidimensional Scale of Social support, The Connor-Davidson Resilience Scale (CD-RISC-25), Pain catastrophizing scale, and Pain Anxiety Symptom Scale. The sample consists of mix sample of 50 participant (N=50).

Table 2 shows that the estimated tendencies of data i.e. the descriptive analysis and the values of mean. Standard deviation indicates the normal deviations of data on all variables from the means. Normal distribution of the data is also indicated by the skewness.

The alpha coefficient reliability of the scales used to measure different variables in the sample are also visible in Table 2. The scale used to measure the pain catastrophizing in participants of the current study is the pain catastrophizing scale with three subscales i.e. rumination sub-scale having (α=.84), magnification sub-scale having (α=.81) and helplessness sub-scale having (α=.94) alpha reliabilities. Pain anxiety in patients is measured through the short version of the pain anxiety scale. This scale has four sub-scales i.e. cognitive anxiety with (α= .92), fearful appraisal having (α= .84), escape avoidance having (α= .88) and physiological anxiety having (α= .58).

An important factor that helps patient to fight against their disease is resilience and it is measured through resilience scale (CD-RISC-25) and has an alpha reliability of (α= .94). Another scale is the multidimensional scale of social support, that is used to measure the support from family, friends and significant others of rheumatoid arthritis patients. The multidimensional scale of social support has three sub-scales i.e. family sub-scale shows (α=.71) alpha reliability, friends sub-scale shows (α=.91) alpha reliability, and significant others sub-scale shows (α=.92) alpha reliability.

The consistency between independent measurements of the same thing is the reliability. For internal consistency point of view, the total scale and subscales were reliable. The correlation coefficient of item analysis was used to determine the degree to which an instrument's items are associated with the

entire instrument (Tezbasaran, 1997; Sencan, 2005). By obtaining, a high correlation coefficient for each item establishes that the item is highly associated with the theoretical hypothesis being measured or that the item is significant and suitable to measure the targeted behavior. The reliabilities and correlation coefficient of all the variables and items lie within the acceptable range in the current study.

Furthermore, the Table 2 shows the significant linear relationship either positive or negative between all the variables of the study. The results of the pilot study are well supported by the previous literature available. The results of the study conducted by Marija Pejičić in 2018 indicates that the seeming support of the friends, family and others is a significant predictive factor for resilience. The more the presence of these components, the stronger the resilience. Patients with rheumatoid arthritis build resilience through a dynamic learning process in response to new challenges. Patients create resilience using a combination of behavioral and emotion management methods. Patients, health care providers, and researchers designing behavioral mediations and social support programs may benefit from being aware of these tactics in the context of rheumatoid arthritis and other chronic conditions.

Changes in the sufferer's emotional life, which are regarded a result of pain and developing injury, are among the psychological problems of rheumatoid arthritis in the spotlight, according to the literature. Rheumatoid arthritis patients had more anxiety and depressed symptoms than the general population (Mojs, 2011). The steady deterioration of joint function leads to emotions of reliance, powerlessness, and insignificance, all of which contribute to the emergence and persistence of psychological symptoms, as claimed by the psychological approach. According to study conducted by Khajavi Zeinab, in 2019, pain catastrophizing and pain anxiety can increase chronic pain in women with rheumatoid arthritis by increasing their pain intensity. Therefore, these factors need to be considered in the management and treatment of these patients. The current study also shows a significant relation between these two variables in Table 2. The pain catastrophizing scale's subscales are all positively connected with the pain anxiety scale's subscales. Anxiety and

pain catastrophizing are theoretically distinct in general, and there is some evidence to suggest that anxiety and pain catastrophizing play distinct roles in chronic pain, as demonstrated by research by Benore et al., 2015.

Apart from resilience, other research have highlighted the relevance of social support in preserving and protecting well-being (Rodakowski, 2012). In individuals with rheumatoid arthritis, for example, social communication and affective support can help to alleviate psychological issues. The research that looked into the relationship among resilience and social support discovered not just a link between strong resilience and hopefulness among chronic pain patients, but also a favorable influence of family social support on the patients' adjustment and lifespan.

The table 3, 4, 5 & 6 showed that the item correlation and adjusted item correlation among all the scales and sub scales used in the study. Good level of alpha reliability is shown by the items and therefore it can be considered to be used in the further study as the studies display that the reliability is reasonable satisfactory.

3.5 Population, Sample and sample characteristics

Total population was 200 from different government hospitals of Islamabad and Rawalpindi. A sample of 200 (N=200) rheumatoid arthritis patients adolescents (male = 51, female = 149) attending a routine rheumatology clinic was evaluated (N=200) by using convenient sampling technique is collected from different hospitals of Islamabad and Rawalpindi with an age range from 22 to 85years ($M = 44.96$, $SD = 12.74$). The minimum time duration of illness was 6 months and treatment is 6 months and above. Other demographical information e.g. education, family system, marital status, other illnesses, was also obtained through demographic sheet.

Table 7

Detail of the *Sample Characteristics of the Main Study (N=200)*

Sample Characteristics	Features	Total Sample
		(*N* = 200)
		f %
Gender	Males	51 (25.4%)
	Females	146 (74.1%)
Age	Early adults	94 (46.8)
	Late adults	106 (52.7)

Inclusion and exclusion criteria

All participants in the study had to be at least 22 years old, have no loss of consciousness, and have had rheumatoid arthritis for at least six months, as determined by a doctor or consultant. Patients with positive anti-CC antibodies and positive rheumatoid arthritis factor were also included in the study. Patients with a psychological illness that impairs their memory or ability to respond, women who are pregnant and lactating women, patients with serious illnesses such as cancer or stroke that impair quality of life, patients with any physical impairment (amputation of any limb), and patients reluctant to cooperate were all excluded from the study.

3.6 Sampling Technique

The sample for Phase II for this research was collect by using purposive sampling technique.

3.7 Data Collection

Each participant was approached individually by the researcher and delivered them a brief outline about the objectives and nature of the study after taking the consent of the hospital authority and patients. Instructions were given to fill out the questionnaires.

3.8 Statistically Analysis Plan

SPSS-24 was used for statistical analysis according to the objectives and hypotheses of the study. After checking the normality of data, mean, standard deviation, skewness and kurtosis were calculated to for the psychometric properties of the data. Cronbach's alpha was checked by applying reliability analysis and correlation was carried out to investigate the possible relationship among variables of the study. Multiple and linear regression was performed before moderation and mod graphs. T-test was conducted on the basis of demographic history.

3.9 Research Ethics

The consent form was taken from each participant. The research assured them the information taken from them and the data produced will only be used for study purposes. The aim of the study was briefed to them in detail.

3.10 Delimitations of the Research Study

At this phase, the only delimitation was to ensure the medical team of the hospital about the safety and security of the data taken from their patients.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF THE DATA

4.1 Descriptive Analysis of Study Variables

This portion consists of the main analysis and results based on the main objectives and hypothesis of the present study.

Table 8

Inter-scale correlation, alpha coefficients, and descriptive statistics of the study variables (N=200)

	1	2	3	4	5	6	7	8	9	10	11	12
1. PCRum	-	.81**		.66**	.63**	.49**	.70**	.34**	-.41**	-.32**	-.43**	-.29**	-.38**
2. PC-Mag	-	-		.70**	.66**	.61**	.76**	.36**	-.55**	-.43**	-.45*	-.39**	-.46**
3. PCHelpl	-	-	-	.94**	.71**	.80**	.48**	-.59**	-.44**	-.42**	-.43**	-.47**
4. PA-Cog	-	-	-	-	.69**	.73**	.48**	-.56**	-.41**	-.39**	-.41**	-.43**
5. PA-Fear	-	-	-	-	-	.67**	.54**	-.52**	-.40**	-.34**	-34**	-.39**
6. PA-Escp	-	-	-	-	-	-	.44**	-.57**	-45**	-.48**	-.41**	-.49**
7. PA-Phys	-	-	-	-	-	-	-	-.37**	-.20**	-.23**	-.29**	-.26**
8. Resilience	-	-	-	-	-	-	-	-	.60**	.58**	.63**	.66**
9. MSP-fam	-	-	-	-	-	-	-	-	-	.72**	.81**	.93**
10. MSP-frie	-	-	-	-	-	-	-	-	-	-	.67**	.89**
11. MSP-OS	-	-	-	-	-	-	-	-	-	-	-	.90**
12. TPSS	-	-	-	-	-	-	-	-	-	-	-	-
α	.84	.81		.94	.92	.84	.88	.58	.94	.71	.91	.92	.95
Skewness	-.52	-.38		-1.14	-1.21	-.85	-.95	-.21	-.16	-.51	-.17	-.58	-.48
Kurtosis	-.08	.44		1.15	1.75	.76	.39	.58	-.49	-.67	-1.02	-.43	-.74

p<.01, p<.05

Note: PCS-Rum = Pain catastrophizing scale rumination subscale; PCS-Mag = Pain catastrophizing scale magnification subscale; PCS Helples = Pain catastrophizing scale helplessness subscale; PAS-Cog = Pain Anxiety Symptom Scale cognition subscale; PAS-Fear = Pain Anxiety Symptom Scale fear subscale; PAS-Escp = Pain Anxiety Symptom Scale escape subscale; PAS- Physio = Pain Anxiety Symptom Scale physiological subscale; Resilience = The Connor-Davidson Resilience Scale (CD-RISC-25); MSPSS_OS = Multidimensional scale of social support other significant subscale; MSPSS_Fam = Multidimensional scale of social support family subscale; MSPSS_Frien = Multidimensional scale of social support friends subscale; TPSS = Multidimensional scale of social support.

Table 8 shows the descriptive analysis in order to estimate the trends of data. According to the mean value and standard deviation, normal deviations from the means on all variables are observed. The data is normally distributed as indicated by the Skewness.

Furthermore, Table no. 8 demonstrates linear relationship among all the variables of the study. According to table, all the sub-scales of pain catastrophizing scale are positively correlated with all the sub-scales of pain anxiety symptom scale. All the sub-scales of pain catastrophizing scale ($p<$ .01) and pain anxiety symptom scale ($p<.01$) show a substantial negative linear relationship with the Connor-Davidson resilience scale. The cognitive anxiety sub-scale of pain anxiety scale ($p<$ .01), fearful appraisal sub-scale of pain anxiety scale ($p<$ .01), escape avoidance sub-scale of pain anxiety scale ($p<$ .01) and physiological anxiety subscale of pain anxiety symptom scale shows a negative significant correlation with all sub-scales of multidimensional scale of social support. Similarly, same table indicates the significant level of correlation among all the subscales of multidimensional scale of social support ($p<$ .01) which indicates the importance of social support for patient of rheumatoid arthritis. The Connor-Davidson resilience scale shows a significant positive correlation ($p<$ .01) with all sub-scales of multidimensional scale of social support. The rumination sub-scale of pain catastrophizing scale shows a significant negative correlation ($p<.01$) with all sub-scales of multidimensional scale of social support. Magnification sub- scale of pain catastrophizing scale shows a significant negative correlation ($p<$ .01 with all the sub- scales of multidimensional scale of social support. Helplessness sub-scale of pain catastrophizing scale shows a significant negative correlation ($p<$ .01) with all the sub-scales of multidimensional scale of social support.

Table 9

Multiple Regression Analysis on Pain Anxiety by Pain Catastrophizing (N=200)

	Cognitive Anxiety					Fearful				
				95% CI					95% CI	
P-C	*B*	*SE B*	*β*	*LL*	*UL*	*B*	*SE B*	*β*	*LL*	*UL*
RUM	-.03	.02	-.02	-.09	.01	.27	.11	.20*	.51	.04
MAG	.06	.03	.04**	.13	.00	.59	.14	.37**	.30	.87
HELP	.86	.01	1.0**	.83	.88	.45	.05	.58**	.34	.56
$R = .98, R^2 = .97, \Delta R^2 = .97 (F = 2702.40**)$						$R = .73, R^2 = 53, \Delta R^2 = .53 (F = 72.46***)$				
	Escape					Physiological				
RUM	.15	.11	.09	.06	.36	.06	.13	.05	-.19	.31
MAG	.65	.13	.34**	.39	.92	.03	.16	.02*	.34	.27
HELP	.46	.06	.49**	.36	.56	.31	.06	.46**	.19	.43
$R = .85, R^2 = .72, \Delta R^2 = .72 (F = 162.62***)$						$R = .48, R^2 = .23, \Delta R^2 = .22 (F = 18.95***)$				

$***p<.001, **p<.01, *p<.05$

Note: P-C=Pain Catastrophizing Scale; RUM = Rumination; MAG= Magnification; HELP= Helplessness

Results in table show the impacts of pain catastrophizing on each of the subscale of pain anxiety. Findings indicate that pain catastrophizing jointly accounted for 98% of variance in the cognitive anxiety dimension of pain anxiety among patients of rheumatoid arthritis with a significant F ratio ($\Delta R^2 = .97, F = 2702.40, p < .01$). Rumination was found to be a non-significant predictor of cognitive anxiety ($B = -.03, β = -.02$). Magnification was found to be a positive predictor ($B = .06, β = .04, p < .01$), implying that every unit increase in magnification corresponds to a.06 unit increase in cognitive anxiety. Similarly a unit increase in helplessness ($B = .86, β = 1.0, p < .001$) will contribute in increasing

cognitive anxiety by .86 units. To predict fearful thinking among RA patients, the size of the model fit ($\Delta R^2 = .53$), demonstrate a significant overall association ($F = 72.46$, $p < .001$) through contributing 53% of variance in fearful thinking. Beta values indicate that rumination was the positive predictor ($B = .27$, $\beta = .20$, $p < .05$) of fearful thinking. Magnification appeared as another significant predictor ($B = .59$, $\beta = .37$, $p < .001$) suggesting that one unit increase in magnification will increase fearful by .59 units. Helplessness is yet another strong predictor ($B = .45$, $\beta = .58$, $p < .001$) indicating that one unit increase in helplessness will increase fearful by .45 unit. For escape, pain catastrophizing collectively explained up to 72% of variance ($\Delta R^2 = .72$, $F = 162.62$, $p < .001$). Again rumination was non-significant predictor ($B = .15$, $\beta = .09$) of escape. Magnification ($B = .65$, $\beta = .34$, $p < .001$) and helplessness ($B = .46$, $\beta = .49$, $p < .001$) were discovered to be significant predictors of escape.. The value of Adjusted R^2 for physiological subscale indicates that pain catastrophizing jointly accounted for up to 72% of variance ($\Delta R^2 = .72$, $F = 18.95$, $p < .001$). Findings show that rumination is again non-significant ($B = .06$, $\beta = .05$). Magnification and helplessness were the positive predictors of physiological subscale of pain anxiety. Beta weights for magnification ($B = .03$, $\beta = .02$ $< .05$) reveal that by increasing a unit in the magnification, will increase physiological state by .03 units. Whereas a rise in helplessness by one unit will result in an increase in physiological state of by.31 units ($B = .31$, $\beta = .46$, $p < .001$).

Table 10

Regression Analysis on Pain Anxiety by Social support (N=200)

				95% CI	
PSS	*B*	*SE B*	*B*	*LL*	*UL*
		Pain anxiety			
	-.49	.059	-.63***	-.59	-.35

$R = .49, R^2 = .24, \varDelta R^2 = .24\ (F = 63.37^{***})$

Table 10 shows the impact of social support on pain anxiety among the patients of rheumatoid arthritis. According to the results, presence of social support explained 24% of variability with significant F ratio ($\Delta R^2 = .24$, F = 63.37, $p < .000$). According to beta weights, increasing the availability of social support by one unit reduces pain anxiety by .49 units (B = -.49, β = -.63, $p < .000$).

Table 10

Regression Analysis on Pain Anxiety by Resilience (N=200)

Resilience	B	$SE\ B$	B	95% CI LL	95% CI UL
Cognitive anxiety					
	-.17	.01	-.54**	-.21	-.13
$R = .54, R^2= .29, \Delta R^2= .29\ (F = 80.19***)$					
Fearful thinking					
	-.14	.01	-.49**	-.18	-.11
$R = .49, R^2= .24, \Delta R^2= .24\ (F = 61.54***)$					
Escape and avoidance					
	-.19	.02	-.54**	-.23	-.15
$R = .54, R^2= .30, \Delta R^2= .29\ (F = 81.24***)$					
Physiological anxiety					
	- .09	.01	-.38**	-.12	-.06
$R = .38, R^2= .14, \Delta R^2= .14\ (F = 32.05***)$					

***p<.001

    For cognitive anxiety, resilience explained 29% of variability with a significant F ratio ($\Delta R^2 = .29$, $F = 80.19$, $p < .001$). According to beta weights, a one-unit increase in resilience reduces cognitive anxiety by .17 units ($B = -.17$, $\beta = -.54$, $p < .001$). The adjusted R^2 value ($\Delta R^2 = .24$) for fearful subscale of pain anxiety indicate that resilience explained up to 24% variability with significant F ratio ($F = 61.54$, $p < .001$). Beta values represents a unit increase in resilience, will lead to .14 units decrease in fearful thinking ($B = -.14$, β

= -.49, $p < .001$). For escape, 29% of variance ($\Delta R^2 = .29$, $F = 81.24$, $p < .001$) and for physiological, 14% of variance ($\Delta R^2 = .14$, $F = 65.09$, $p < .001$) was clarified by resilience. Assessing beta weights demonstrates that when resilience is increased by one unit, it will decrease escape by .19 units (B = -.19, β = -.54, p < .000). Similarly, one unit increase in the resilience will decrease physiological state of rheumatoid arthritis patients by .09 units (B = -.09, β = -.38, p < .000).

Table 12

Moderating Effect of Social support between Pain Catastrophizing (Rumination, Magnification and Helplessness) and Cognitive anxiety among RA patients (N = 200)

Variable		*B*	*SE B*	*t*	*p*	*95%CI*
					Cognitive anxiety	
Constant		20.61	3.93	5.24	.000	[12.85, 28.37]
RUM		.08	.31	.26	.79	[-.53, .70]
PSS		-.21	.06	-3.36	.00	[-.33,-.09]
RUM × PSS		-.01	.01	-2.31	.02	[.00, .02]
R^2	.46					
F	54.02				.000	
Constant		18.69	3.02	6.18	.000	[12.73, 24.66]
MAG		.27	.33	.80	.42	[-.39, -.92]
PSS		-.15	.05	-3.28	.00	[-.24, -.06]
MAG × PSS		-.01	.01	-2.34	.02	[.08, .02]
R^2	.48					
F	60.82				.000	
Constant		.96	.96	1.00	.32	[-.94, 2.86]
HELP		.77	.04	19.07	.00	[.69, .85]
PSS		-.02	-.01	-.85	-.00	[-.41, -.19]
HELP × PSS		-.05	-.03	-1.49	.01	[-.11, .-09]
R^2	.98					
F	2785.96				.000	

p>.05, p < .001

Note: PSS = Social support; RUM = Rumination, MAG = Magnification, HELP = Helplessness,

Figure 3

Moderating Effect of Social support between Rumination and Cognitive anxeen among RA patients (N = 200)
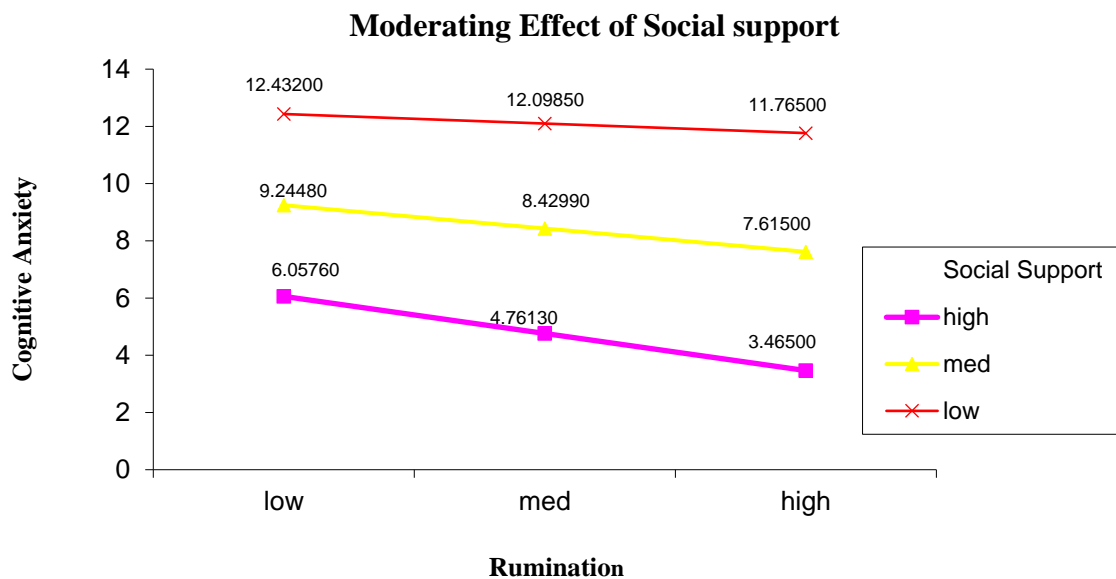
Figure 4

Moderating Effect of Social support between Magnification and Cognitive anxiety among RA patients (N = 200)
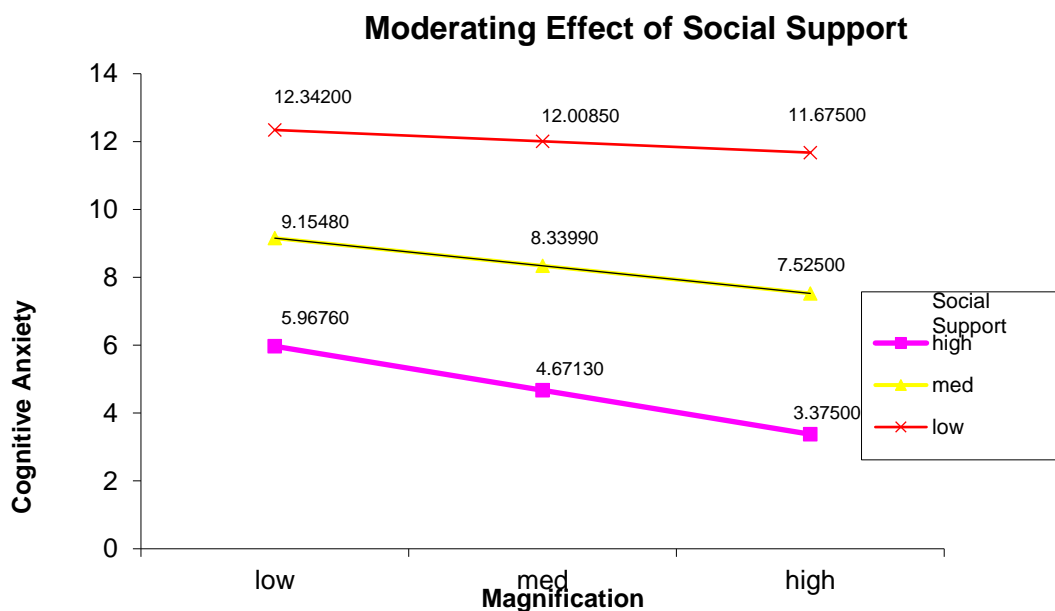
Figure 5

Moderating Effect of Social support between Helplessness and Cognitive anxiety among RA patients (N = 200)

Moderating Effect of Social support
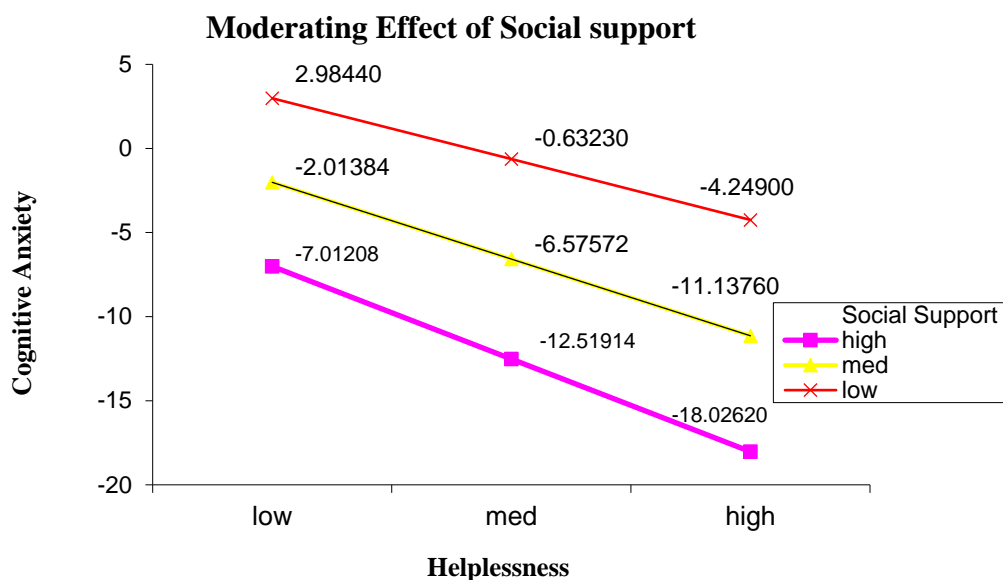
Table 12 shows results for moderating role of social support in relationship between pain catastrophizing and cognitive anxiety among patients of rheumatoid arthritis. Model 1 of table 12 shows social support as significant moderator ($B = -.01$, $t = -2.34$, $p < .01$) and collectively, with rumination, explained 46% variance ($\Delta R^2 = .46$, F (54.02) =, $p < .001$) in cognitive anxiety. The mod graph (Figure 3) demonstrates these findings further, indicating that social support decreased the link between rumination and cognitive anxiety in rheumatoid arthritis patients. Slopes indicate that an increase in the level of social support decreased the effect of rumination.

Magnification and social support have a significant interaction term ($B = -.01$, t = -2.24, $p < .001$) which reveals social support was found to be a significant moderator, accounting for 46% of the variance. ($\Delta R^2 = .48$, F (60.82), p < .001) in cognitive anxiety. This effect is further illustrated by the Mod graph (Figure 4) which shows high, medium,

and low levels of social support. Increases in social support lessened the effect of magnification, according to the slopes.

Model 3 of table 12 shows social support as significant moderator (B = -.05, t = -1.49, p < .01) and collectively, with helplessness, explained 98% variance (ΔR^2 = .98, F (2785.96). Mod graph (Figure 5) illustrates that social support attenuated the link between helplessness and cognitive anxiety, further extending the findings. Increases in social support decreased the effect of helplessness on cognitive anxiety, as indicated by the slopes.

Table 13

Moderating Effect of Social support between Pain Catastrophizing (Rumination, Magnification and Helplessness) and Fearful Thinking among Rheumatoid Patients (N = 200)

Variable		B	SE B	t	Fearful thinking	
					P	*95%CI*
Constant		20.55	4.24	4.83	.000	[12.20, 28.91]
RUM		.10	.33	.31	.76	[-.56, .76]
PSS		-.15	.07	-2.33	.02	[-.28,-.02]
RUM × PSS		-.00	.00	1.34	1.8	[-.03, .01]
R^2	.29					
F	26.85				.000	
Constant		17.43	3.09	5.14	.000	[11.33, 23.53]
MAG		.39	.34	1.16	.25	[-.27, 1.06]
PSS		-.12	.05	-2.26	.03	[-.20, -.01]
MAG × PSS		-.11	.04	-1.50	.00	[-.00, -.02]
R^2	.40					
F	42.45				.000	
Constant		5.42	4.22	1.28	.20	[-2.90, 13.74]
HELP		.64	.18	3.60	.00	[.29, .99]
PSS		-.02	.06	-.25	.00	[-.11, -.14]
HELP × PSS		-.09	.05	-.64	.00	[-.05, -.03]
R^2	.51					
F	68.25				.000	

*p>.05= Non-significant, ***p < .001*
Note: PSS = Social support; RUM = Rumination, MAG = Magnification, HELP = Helplessness,

Figure 6

Moderating effect of Social support between Magnification and Fearful Thinking among
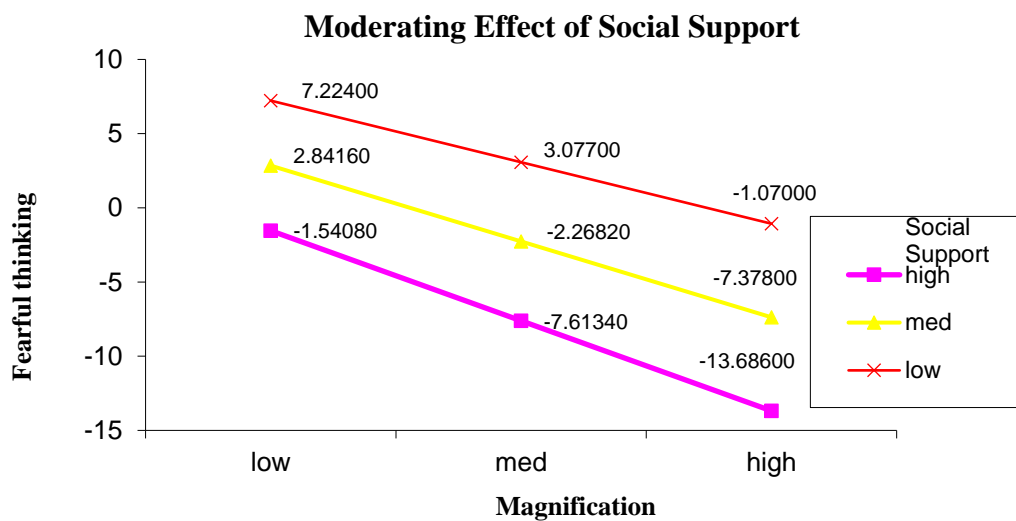
RA Patients.

Figure 7

Moderating effect of Social support between Helplessness and Fearful Thinking among

RA Patients.
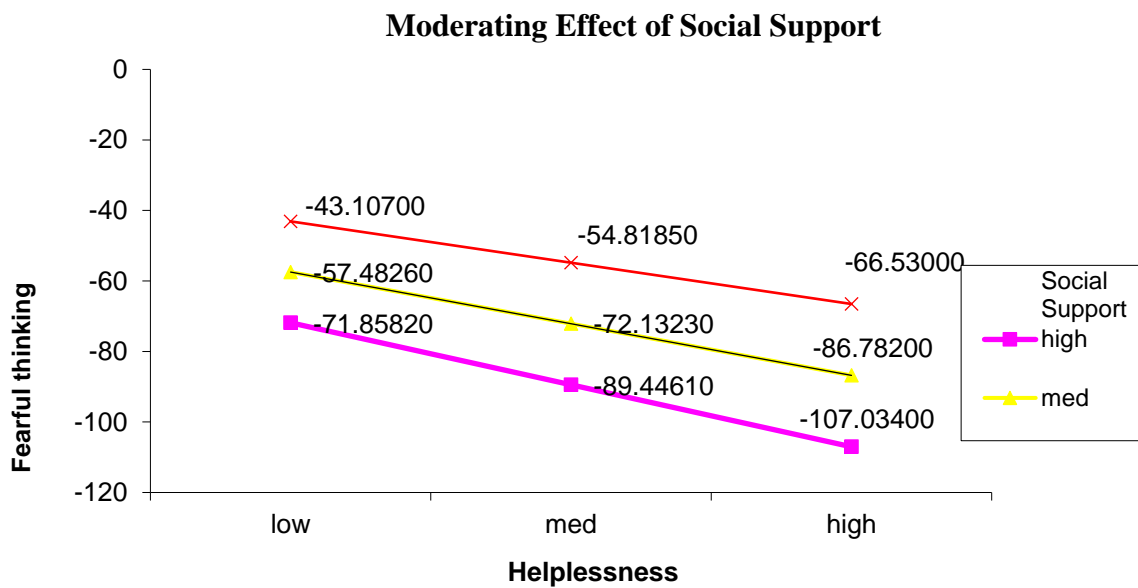
. The moderation effect of social support is highlighted in Model 1 of the table. The results for rumination show that it did not explain for considerable moderation (B = -.01, p = 1.8) in the connection between rumination and cognitive anxiety in individuals with rheumatoid arthritis

Model 2 in the above table revealed that unstandardized beta (B) is significantly linked to magnification x social support (B= -.02, p = <.00). The discrimination occurs by association is 40%. Social support has a great impact on the connection between the predictor and outcome variables. The negative interaction value shows an increase in perceived social dwindles the relation between fearful thinking and magnification. Mod graph (Figure 6) elaborates the effect by suggesting that social support declines the relationship between magnification and fearful thinking. Slopes indicate that increase in the level of social support decreased the effect of magnification.

Social support was also found to be a major significant moderator (B = -.04, t = -.64, p < .001) that moderates the effect of helplessness along contributing 51% of variance (ΔR^2 = .51, F (68.25), p < .001) in fearful thinking. Social support buffered the effect of helplessness on fearful thinking, as shown by the interaction plot (Figure 7). The slopes show that high and medium levels of social support reduce the effect of helplessness more than low levels.

Table 14

Moderating effect of social support between Pain Catastrophizing (Rumination, Magnification and Helplessness) and Escape and Avoidance among RA patients (N = 200)

Variable		*B*	*SE B*	*t*	Escape and avoidance	
					p	*95%CI*
Constant		17.86	3.97	4.50	.000	[10.03, 25.69]
RUM		.37	.31	1.18	.24	[-.25, .99]
PSS		-.21	.06	-3.31	.00	[-.33,-.08]
RUM × PSS		.03	.05	-2.00	.79	[-.06, .02]
R^2	.56					
F	81.59				.000	
Constant		18.26	2.86	6.38	.000	[12.62, 23.90]
MAG		-.36	.31	1.16	.25	[-.25, .98]
SS		-.19	.04	-4.28	.00	[-.27, -.01]
MAG × SS		-.02	.01	-3.18	.00	[-.01, -.03]
R^2	.69					
F	111.25				.000	
Constant		2.02	4.16	.49	.63	[-6.19, 10.23]
HELP		-.83	.18	-4.75	.00	[-.49, -1.18]
SS		-.44	.06	-6.04	.00	[-.10, -.15]
HELP × SS		-.03	.01	-.87	.00	[-.05, -.01]
R^2	.66					
F	127.18				.000	

*p>.05= Non-significant, ***p < .001*
Note: SS = Social support; RUM = Rumination, MAG = Magnification, HELP = Helplessness,

Figure 8

Moderating Effect of Social support on Relation between Magnification and Escape and

Avoidance among RA patients (N = 200)
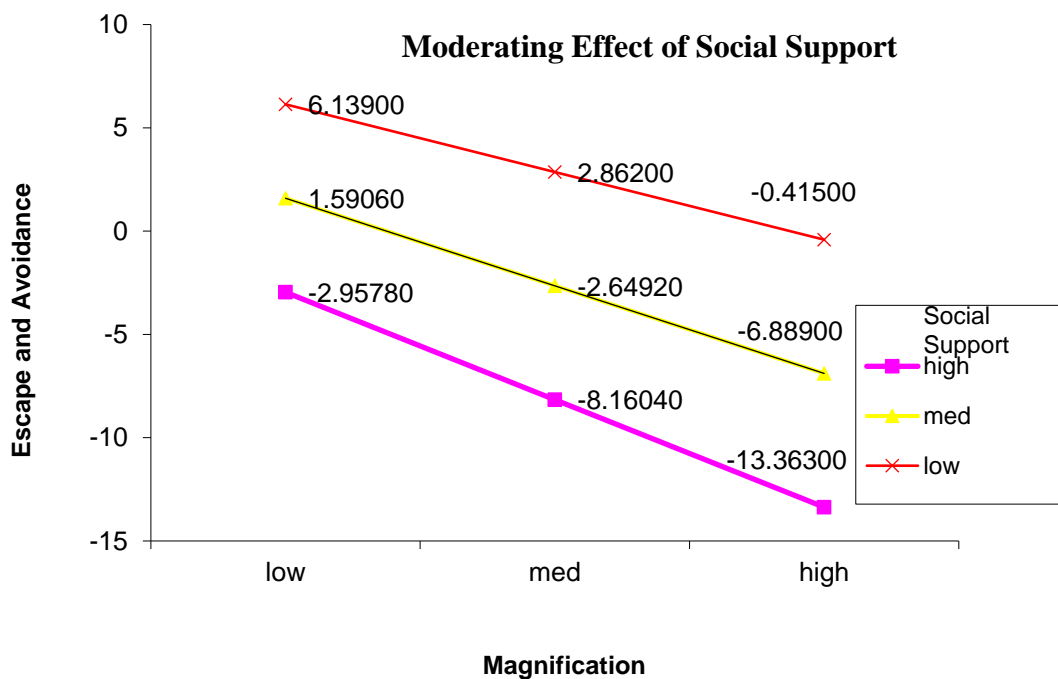
Figure 9

Moderating Effect of Social support between Helplessness and Escape and Avoidance

among RA patients (N = 200)
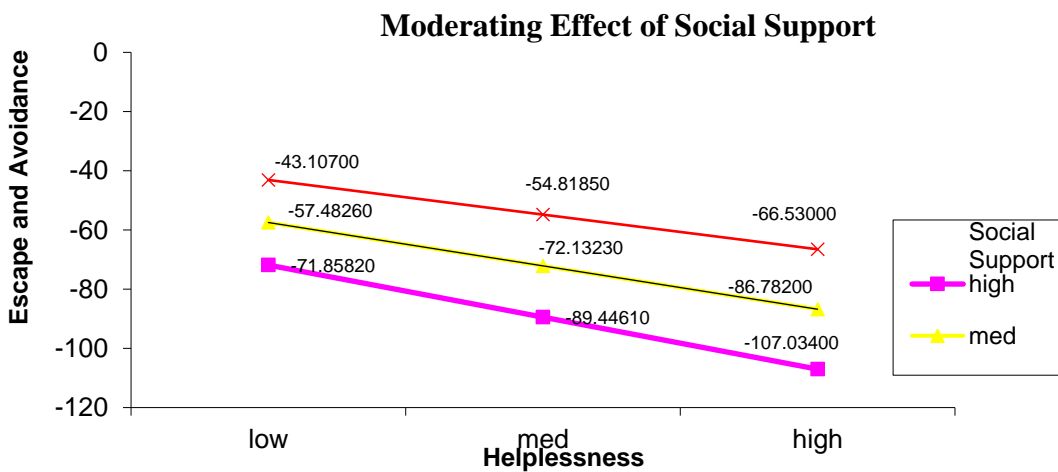
Results presented in model 1 of Table (14) demonstrate the moderating role of social support in the association between experience of rumination and escape and avoidance among patients of rheumatoid arthritis. Moderation effect model 1 reveals that social support did not account for a significant moderation effect (B = -.01, p = .79) in the relationship between rumination and escape and avoidance.

Model 2 also shows results for the moderating effect of social support. The interaction term revealed significant interaction effect (B = -.02, ΔR^2 = .69, F (111.25), p < .001) of social support and magnification. Extending these findings, mod graph (Figure 8) elaborates that social support buffered the relationship between magnification and escape and avoidance. Slopes indicate that as the level of social support increased, the effect of magnification on escape and avoidance minimized

Model 3 shows moderating role of social support in the association between helplessness and escape and avoidance among rheumatoid arthritis patients. Interaction term suggest that social support account for a significant effect (B = -.03, ΔR^2 = .66, F (127.18), p = .00) in explaining escape and avoidance. Mod graph (Figure 9) further explains that social support served as a protective factor and buffered the effect of helplessness on escape and avoidance among RA patients. The line graph shows that high and medium level of social support minimized the helplessness whereas low level of support made no big difference.

Table 15

Moderating Effect of Social support between Pain Catastrophizing (Rumination, Magnification and Helplessness) and Physiological Anxiety among RA patients (N = 200)

|					Physiological anxiety	
Variable		*B*	*SE B*	*t*	*P*	*95%CI*
Constant		20.58	3.91	5.52	.000	[13.87, 29.29]
RUM		.55	.31	-1.79	.07	[-1.16, .06]
PSS		-.21	.06	-3.47	.00	[-.33,-.09]
RUM × PSS		-.01	.01	-2.96	.00	[-04, -.02]
R^2	.18					
F	13.89				.000	
Constant		20.16	3.05	6.62	.000	[14.16, 26.17]
MAG		-.66	.33	-1.98	.05	[-1.32, .00]
PSS		-.18	.05	-3.88	.00	[-.27, -.09]
MAG × PSS		-.02	.01	-3.44	.00	[-.01, -.03]
R^2	.20					
F	16.12				.000	
Constant		16.18	4.46	3.63	.00	[7.39, 24.98]
HELP		-.10	.19	-.52	.60	[-.47, 27]
PSS		-.15	.07	-2.26	.02	[-.28, -.03]
HELP × PSS		-.01	.03	-2.24	.02	[-.07, -.01]
R^2	.26					
F	22.40				.000	

p>.05= Non-significant, ***p < .001
Note: PSS = Social support; RUM = Rumination, MAG = Magnification, HELP = Helplessness

Figure 10

Moderating Effect of Social support between Rumination and Physiological Anxiety among
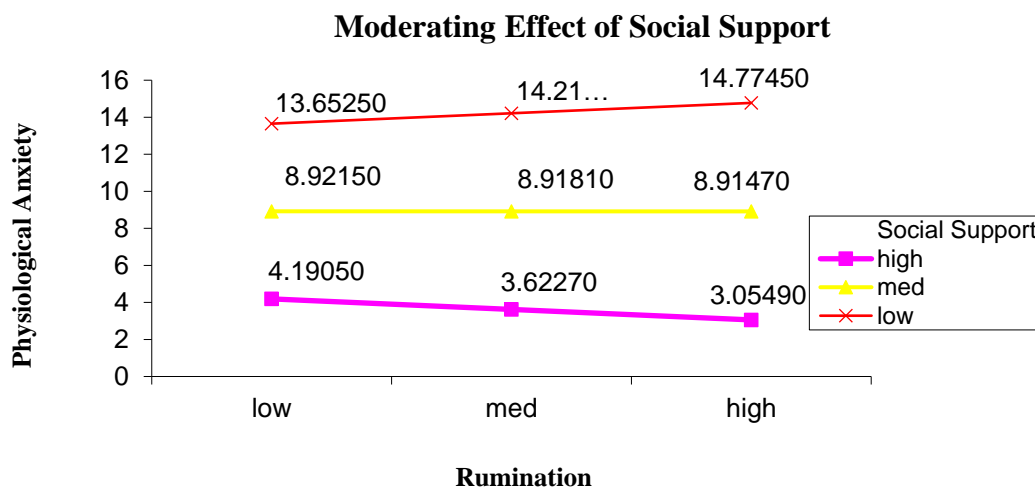
RA patients (N = 200)

Figure 11

Moderating Effect of Social support between Magnification and Physiological Anxiety

among RA patients (N = 200)
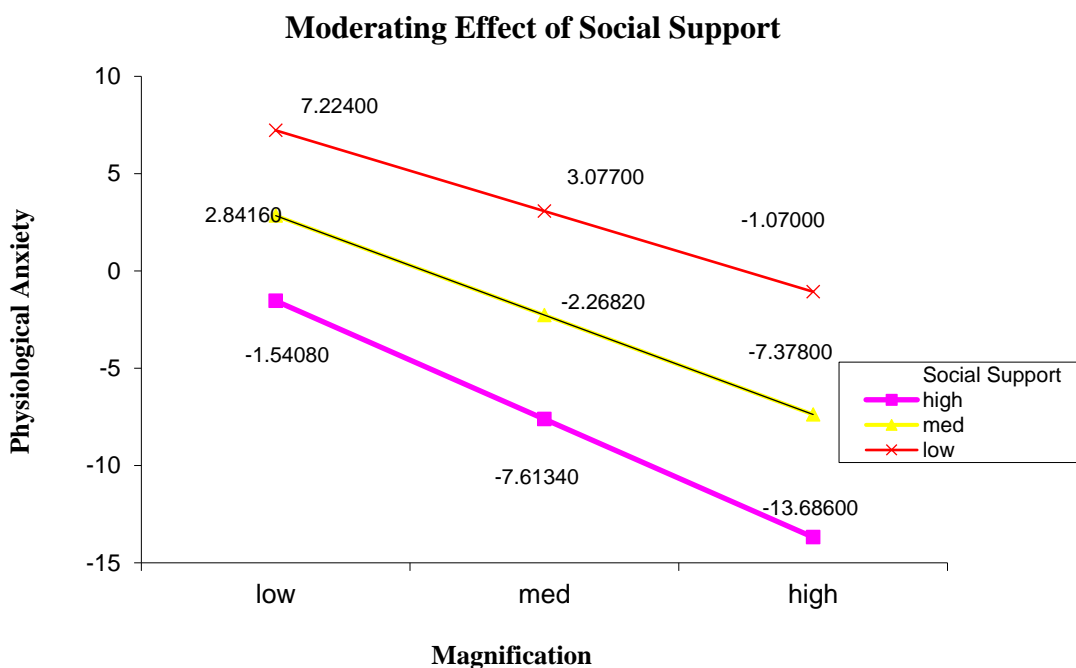
Figure 12

Moderating Effect of Social Support between Helplessness and Physiological Anxiety among RA patients (N = 200)
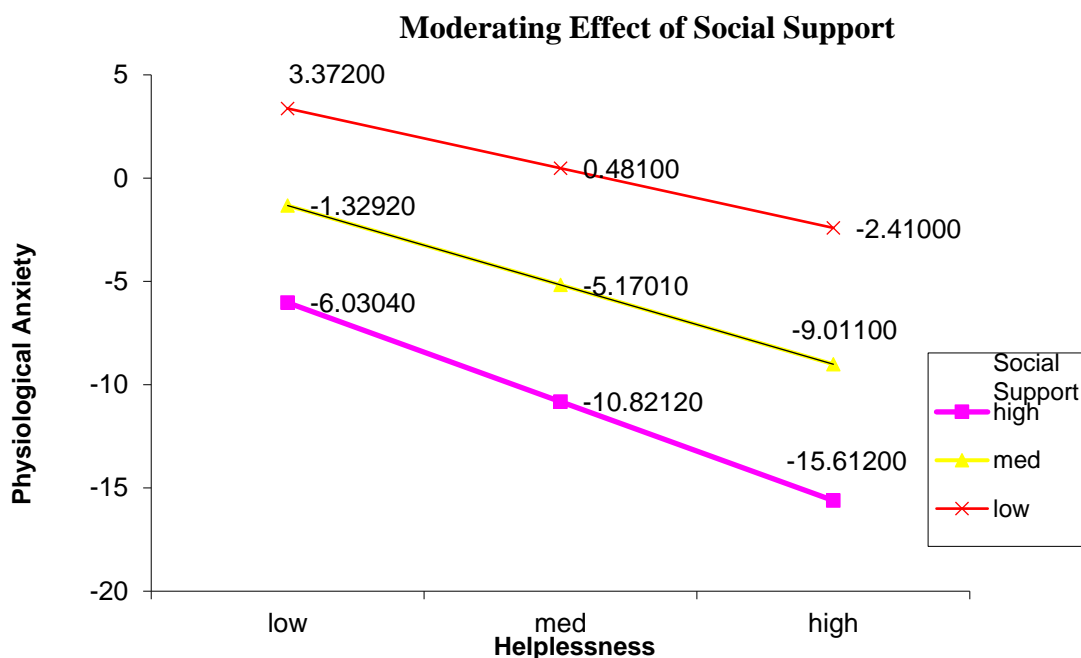
Model 1 shows significant moderating role of social support in the association between rumination and physiological anxiety among rheumatoid arthritis patients. . Social support significantly moderated (*B* = -.01, t = -2.96, *p* < .001) the effect of helplessness along with contributing 18% of variance (ΔR^2 = .18, F (13.89), *p* < .001) in physiological anxiety. Making this effect evident, interaction plot (Figure 10) indicates that social support buffered the effect of helplessness on physiological anxiety.

Results presented in model 2 of Table (15) demonstrate the moderating role of social support in the association between experience of magnification and physiological anxiety among patients of rheumatoid arthritis. Findings suggest that the interaction between moderator and magnification produced variance of 20% (F (16.12), ΔR^2 = .20, *p*

< .05) in explaining physiological anxiety. Social support, which is a protective factor, had the opposite impact in the model, buffering the effect of magnification on physiological anxiety in rheumatoid arthritis patients. The follow-up mod graph (Figure 11) elucidates this association at different levels of vocabulary (high, medium, and low). The line graph illustrates that the effect of magnification on physiological anxiety was reduced at all degrees of social support.

For helplessness, results show the moderating effect, which is significant, (B = -.01, t = -2.24, p < .001) along with variance of 26% (ΔR^2 = .26, F (22.40), p < .001) in physiological anxiety. The result of Mod graph in figure 12, explains these findings by implying that social support weakened the link between helplessness and physiological anxiety.

Table 16

Moderating effect of Resilience between Pain catastrophizing (Rumination, Magnification and Helplessness) and Cognitive anxiety among RA patients (N = 200)

Variable		B	SE B	t	Cognitive Anxiety	
					p	95%CI
Constant		24.66	4.06	6.07	.00	[16.64, 32.67]
RUM		.03	.31	-.10	.92	[-.57, .63]
RESI		-.24	.06	-4.12	.00	[-.39,-.12]
RUM × RESI		-.01	.04	-2.23	.02	[-.01, -.02]
R^2	.52					
F	71.55				.000	
Constant		20.19	3.26	6.42	.000	[14.48, 27.32]
MAG		-.30	.34	.89	.37	[-.37, .97]
RESI		-.16	.04	-3.49	.00	[-.24, -.07]
MAG × RESI		-.01	.00	-1.65	.01	[-.05, -.09]
R^2	.51					
F	67.10				.000	
Constant		.80	.97	.83	.41	[-1.10, 2.71]
HELP		-.78	.04	-20.00	.00	[-.70, -.86]
RESI		-.01	.01	-.71	.01	[-.03, -.02]
HELP × RESI		-.06	.02	-1.39	.00	[-.04, -.01]
R^2	.81					
F	2798.22				.000	

*p>.05= Non-significant, ***p < .001*
Note: RESI = Resilience; RUM = Rumination, MAG = Magnification, HELP = Helplessness

Figure 13

Moderating effect of Resilience between Rumination and Cognitive anxiety among RA
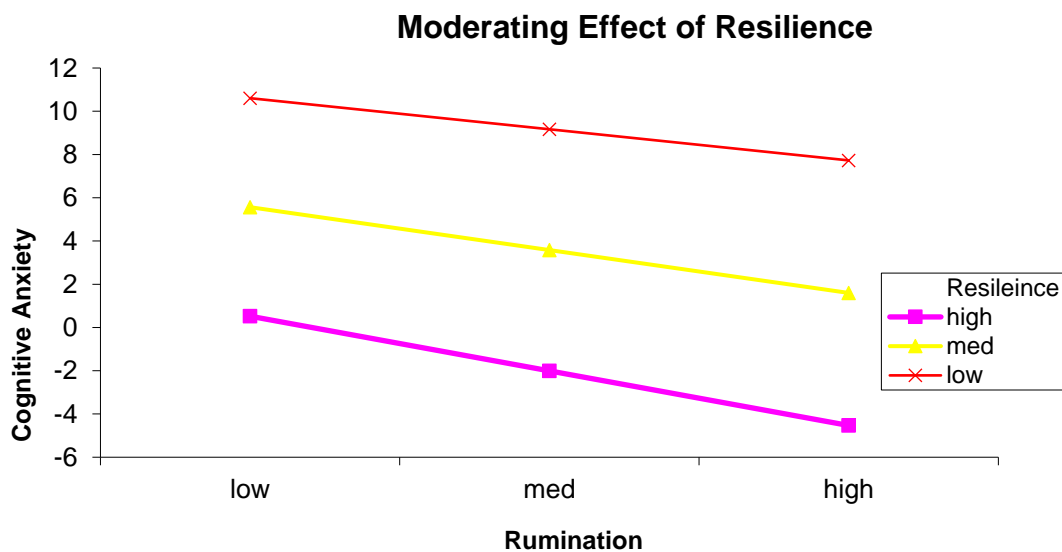
patients (N = 200)

Figure 14

Moderating effect of Resilience between Magnification and Cognitive anxiety among RA
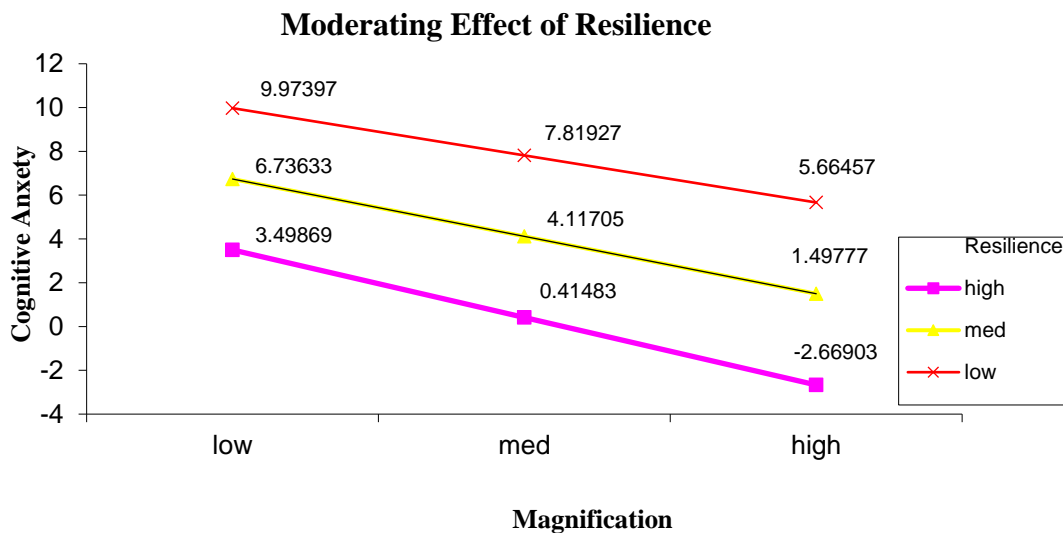
patients (N = 200)

Figure 15

Moderating effect of Resilience between Helplessness and Cognitive anxiety among RA patients (N = 200)
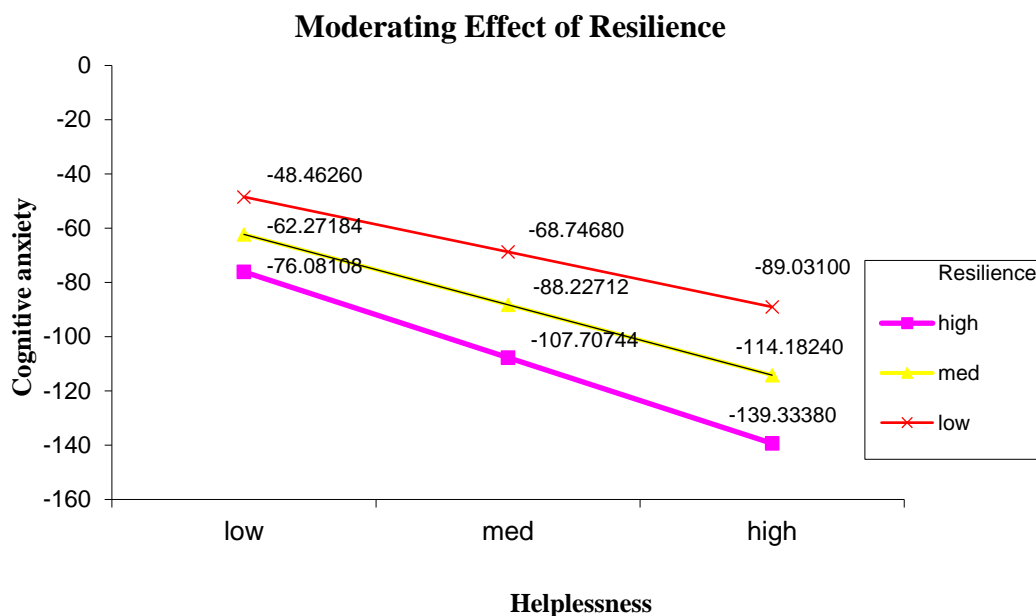
Model 1 reveals that social support has a substantial role in the relationship between rumination and physiological anxiety in rheumatoid arthritis patients. Social support significantly moderated ($B = -.01$, t $= -2.23$, $p < .001$) the effect of rumination by contributing variance of 18% ($\Delta R^2 = .52$, F (71.55), $p < .001$) in physiological anxiety. The interaction plot (Figure 13) shows that social support buffered the effect of rumination on physiological anxiety, demonstrating this effect.

The results in model 2 of Table show that resilience plays a moderating role in the relationship between magnification experience and cognitive anxiety in rheumatoid arthritis patients. Findings suggest that resilience and magnification interactively produced 51% (F 67.10, $\Delta R^2 = .51$, $p < .05$) of variance in explaining cognitive anxiety. Resilience, as a protective factor, had the opposite impact in the model, buffering the effect of magnification

on cognitive anxiety in rheumatoid arthritis patients. These findings are illustrated in a mod graph (Figure 14), which reveals that resilience mitigated the effect of magnification on cognitive anxiety. Increased resilience reduces the effect of magnification, as indicated by slopes.

Model 3 shows the moderating role of resilience in the relationship between helplessness and cognitive anxiety among rheumatoid arthritis patients. Interaction term suggest that resilience account for a significant effect (B = -.06, ΔR^2 = .81, F (2798.22), p = .00) in explaining cognitive anxiety. Mod graph (Figure 15) further illustrates these findings and suggests that resilience weakened the relationship between helplessness and cognitive anxiety. Slopes of the graph depict that as the level of resilience increased, the effect of helplessness got faded.

Table 16

Moderating effect of Resilience between Pain catastrophizing (Rumination, Magnification and Helplessness) and Fearful Thinking among RA patients (N = 200)

| Variable		B	SE B	t	Fearful Thinking	
					p	95%CI
Constant		19.34	4.44	4.36	.00	[10.59, 28.10]
RUM		.45	.33	1.36	.18	[-.21, 1.11]
RESI		-.11	.06	-1.80	.02	[-.24,-.01]
RUM × RESI		-.04	.001	-4.30	.00	[-.03, -.08]
R^2	.36					
F	37.49				.000	
Constant		18.23	3.33	5.47	.00	[11.66, 24.79]
MAG		-.58	.35	1.66	.10	[-.11, 1.26]
RESI		-.10	.05	-2.12	.02	[-.19, -.01]
MAG × RESI		-.01	.01	-5.47	.00	[-.01, -.03]
R^2	.42					
F	48.21				.000	
Constant		5.82	4.16	1.40	.16	[-2.38, 14.01]
HELP		-.68	.17	4.07	.00	[.35, 1.01]
RESI		-.02	.05	.30	-.77	[-.09, .12]
HELP × RESI		-.02	.04	-1.20	.02	[-.01, -.02]
R^2	.53					
F	73.70				.000	

p>.05= Non-significant, ***p < .001
Note: RESI = Resilience; RUM = Rumination, MAG = Magnification, HELP = Helplessness

Figure 17

*Moderating Effect of Resilience between Rumination and Fearful Thinking among RA patients (N = 200)*
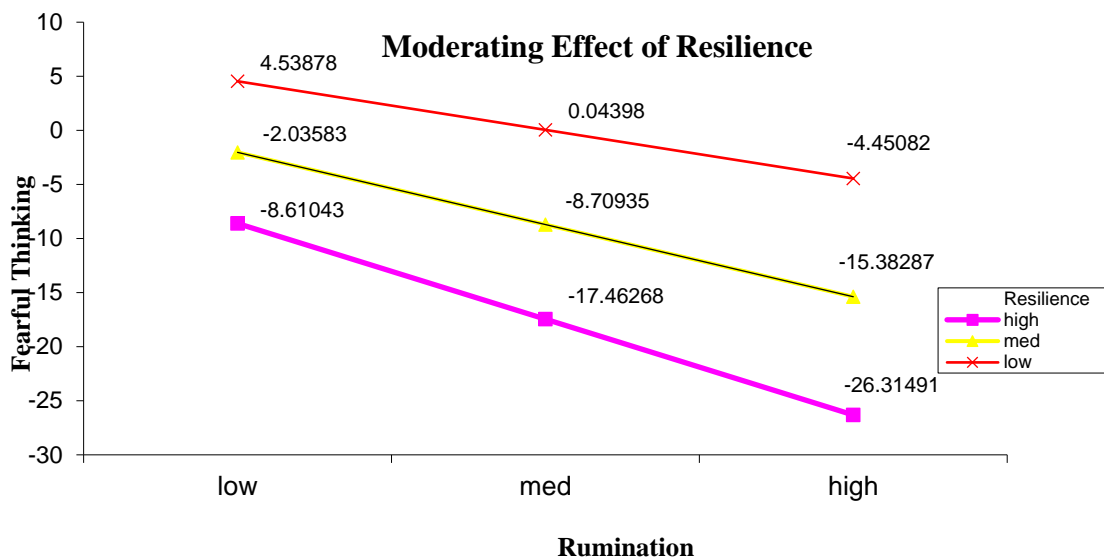
Figure 18

Moderating Effect of Resilience between Magnification and Fearful Thinking among RA patients (N = 200)
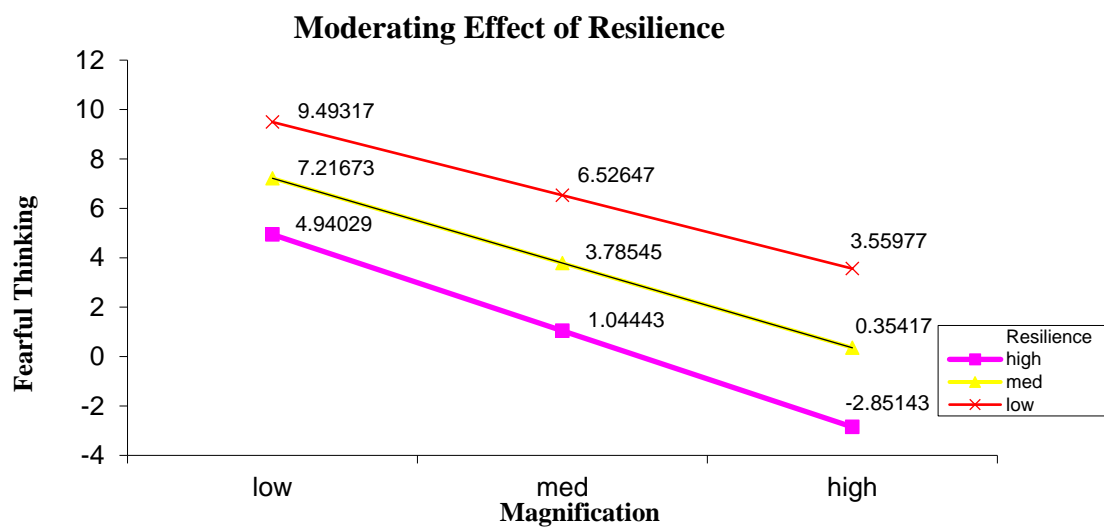
Figure 19

Moderating Effect of Resilience between Helplessness and Fearful Thinking among RA patients (N = 200)
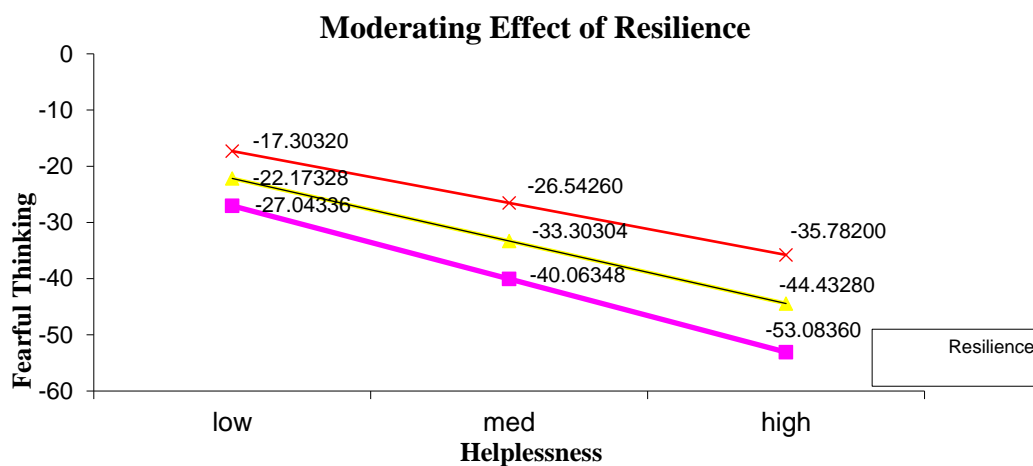
Moderation effect of resilience is shown in model 1 which reveals that resilience has a significant moderation effect ($B = -.04$, $t = -4.30$, $p = .00$) by explaining 36% of variance ($\Delta R^2 = .53$, F (37.49) in the relationship rumination and fearful thinking among patients of rheumatoid arthritis. Further supporting the findings, the mod graph (Figure 16) shows that resilience in RA patients decreases the link between rumination and fearful thinking. The slopes clearly show that increasing resilience reduced the effect of ruminating.

The results for the moderating power of resilience for predictor and outcome for model 2 are shown in the table above. The interaction effect ($B = -.01$, $t = -5.47$, $p < .001$) shows that resilience significant moderate the association between magnification and fearful thinking among patients of rheumatoid arthritis by explaining 42% of variance ($\Delta R^2 = .42$, F (48.21), $p < .001$). The interaction plot (Figure 17), which shows that resilience amplified the effect of magnification on fearful thinking, adds to the findings. An increase in resilience, hinted at the relationship between magnification and fearful thinking.

For helplessness, the table shows a significant moderation effect of resilience ($B =$ .005, $t = 4.50$, $p < .001$) by contributing 53% of variance ($\Delta R^2 = .53$, F (73.70), p < .05) in fearful thinking. Figure 18 adds to these findings by implying that resilience mitigated the impact of helplessness on fearful thinking. The patterns of slopes show that as resilience developed, the impact of helplessness decreased.

Table 18

Moderating effect of Resilience between Pain Catastrophizing (Rumination, Magnification and Helplessness) and Escape and Avoidance *among RA patients (N = 200)*

Variable	B	SE B	t	Escape and Avoidance p	95%CI
Constant	24.57	4.14	5.94	.00	[16.42,32.3]
RUM	.05	.31	.18	.86	[-.56, .67]
RESI	-.28	.06	-4.7	.00	[-.39,-.16]
RUM × RESI	-.05	.01	-2.8	.00	[-.07, -.02]
R^2 .61					
F 101.70				.000	
Constant	19.23	3.16	6.09	.00	[13.01,25.4]
MAG	-.41	.33	1.25	.21	[-.24, 1.06]
RESI	-.17	.04	-4.0	.00	[-.26, -.09]
MAG ×RE	-.01	.007	-2.5	.01	[-.07, -.02]
R^2 .63					
F 112.75				.000	
Constant	5.30	4.18	1.27	.21	[-2.95,13.5]
HELP	-.71	.17	-4.1	.00	[-.37, -1.04]
RESI	-.04	.05	-.73	.46	[-.15, .07]
HELP × RE	-.06	.02	-.24	.01	[-.01, -.05]
R^2 .66					
F 128.23				.000	

p>.05= Non-significant, ***p < .001
***Note:*** RESI = Resilience; RUM = Rumination, MAG = Magnification, HELP = Helplessness

Figure 19

Moderating Effect of Resilience on Relation between Rumination and Escape and Avoidance among RA Patients
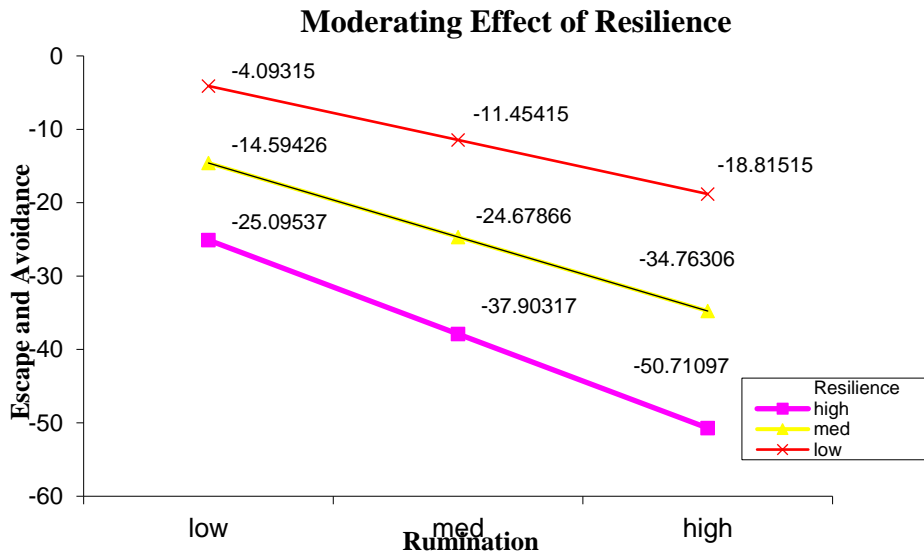
Figure 20

Moderating Effect of Resilience on Relation between Magnification and Escape and Avoidance among RA Patients
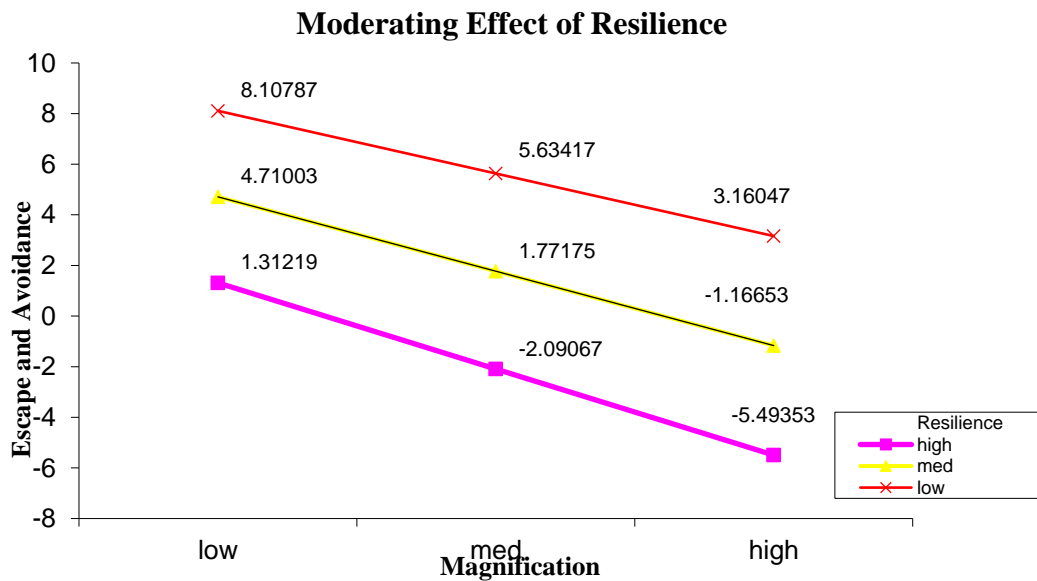
Figure 21

Moderating Effect of Resilience on Relation between Helplessness and Escape and

Avoidance among RA Patients
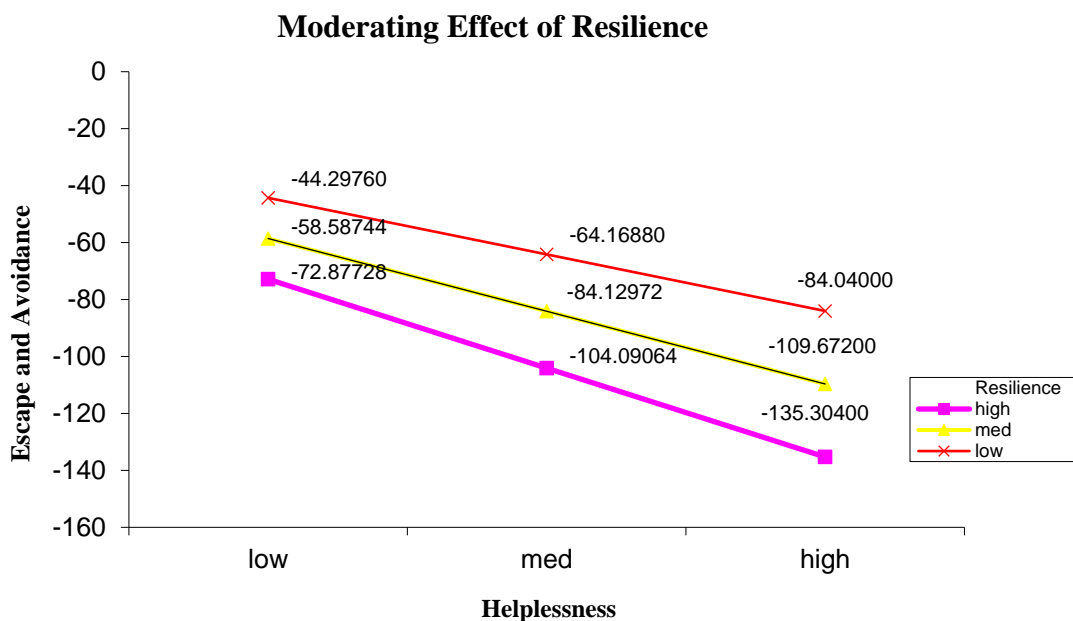
The results in model 1 of Table (18) show that resilience plays a role in the relationship between rumination experience and escape and avoidance in rheumatoid arthritis patients. Resilience serves as a significant moderator, as indicated by the interaction term, ($B = -.05$, $t = 2.86$, $p < .001$) by explaining variance of 61% ($\Delta R^2 = .61$, F (101.70), $p < .001$) in escape and avoidance. The mod graph (Figure 17) demonstrates that resilience reduces the effect of rumination on escape and avoidance in RA patients, highlighting this moderating effect. The graph's slopes show that the influence of ruminating decreased as the level of resilience increased.

The interaction term in model 2 revealed significant interaction effect ($B = -.05$, $\Delta R^2 = .63$, F (112.73), $p < .05$) of resilience and magnification. The resilience factor served as a protective factor, buffering the effect of magnification on escape and avoidance,

according to the mod graph (Figure 18). The line graph depicts how high resilience reduced the impact of magnification on escape and avoidance.

In rheumatoid arthritis patients, model 3 reveals that resilience has a moderating role in the relationship between helplessness, and escape and avoidance. Findings suggest that resilience and helplessness interactively produced 61% (F (101.70), $\Delta R^2 = .61$, $p < .001$) of variance in explaining escape and avoidance. Mod graph (Figure 19) reveals that resilience deteriorates the link between helplessness and escape, and avoidance, making the findings more extensive. Slopes clearly illustrate that as resilience increases; the impact of the helplessness weakens.

Table 19

Moderating effect of Resilience on Relation between Pain Catastrophizing (Rumination, Magnification and Helplessness) and Physiological Anxiety among RA patients (N = 200)

Variable		*B*	*SB*	*t*	Physiological anxiety	
					P	*95%CI*
Constant		27.3	4.1	6.5	.00	[19.1,35.5]
RUM		.81	.31	-2.5	.05	[-1.43, .19]
RESI		-.27	.06	-4.7	.00	[-.39,-.15]
RUM × RESI		-.02	.01	-3.5	.04	[-.01, .03]
R^2	.23					
F	19.58				.00	
Constant		24.1	3.2	7.3	.00	[17.66,30.6]
MAG		-.88	.34	-2.5	.01	[-1.55, -.02]
RESI		-.21	.04	-4.6	.00	[-.30, -.12]
MAG × RESI		-.02	.01	-3.6	.00	[-.01, -.03]
R^2	.22					
F	18.93				.00	
Constant		19.2	4.4	4.3	.00	[10.53,27.9]
HELP		-.17	.18	-.97	.33	[-.52, .18]
RESI		-.17	.06	-3.0	.00	[-.29, -.06]
HELP × RESI		-.01	.05	-2.6	.01	[-.06, -.01]
R^2	.27					
F	24.31				.00	

*p>.05= Non-significant, ***p < .001*
Note: RESI = Resilience; RUM = Rumination, MAG = Magnification, HELP = Helplessness

Figure 20

Moderating effect of Resilience on Relation between Magnification and Physiological Anxiety among RA patients (N = 200)

Moderating Effect of Resilience

Figure 21

Moderating effect of Resilience on Relation between Helplessness) and Physiological Anxiety among RA patients (N = 200)
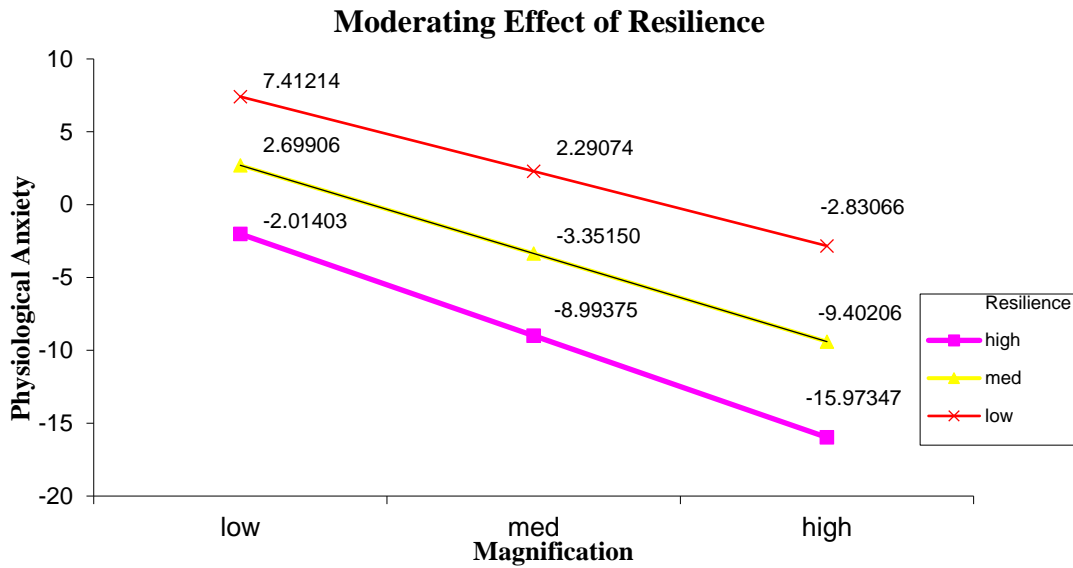
Moderating Effect of Resilience
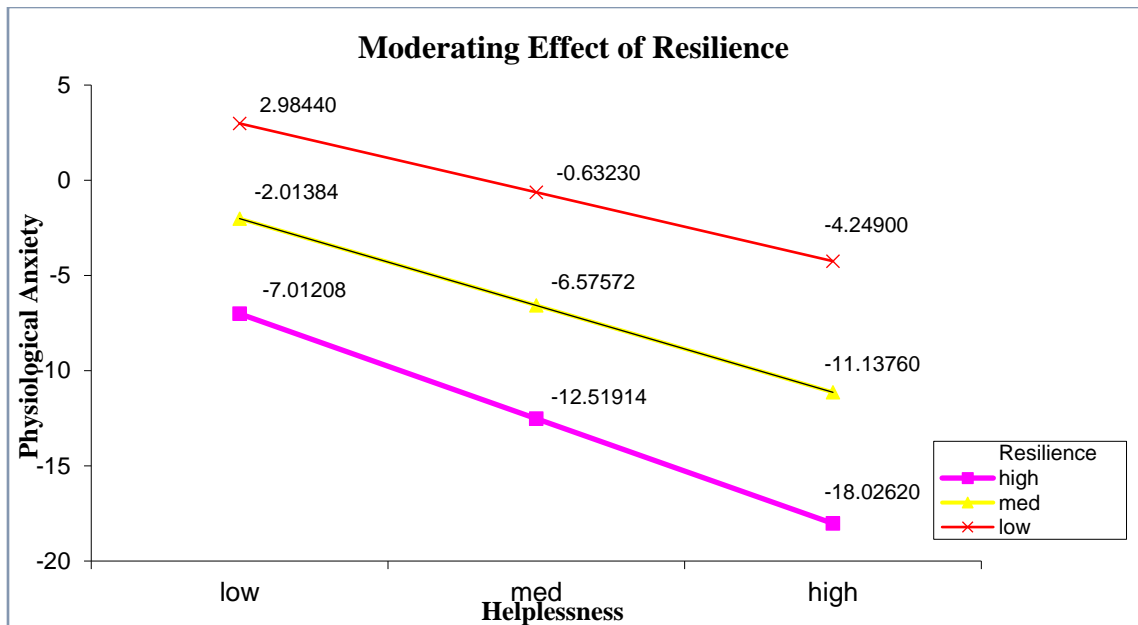
Model 1 shows non-significant moderating role of resilience in the association between rumination and physiological anxiety among rheumatoid arthritis patients. . The results for rumination show that this did not explain for considerable moderation ($B = -.02$, $p = .047$) in the association between rumination and physiological anxiety in rheumatoid arthritis patients.

Results presented in model 2 of Table (19) demonstrate the moderation effect of resilience between magnification and physiological anxiety among patients of rheumatoid arthritis. Findings suggest that resilience and magnification interactively produced 27% of variance (F 18.93, $\Delta R^2 = .27$, $p < .001$) in explaining physiological anxiety. Resilience, as a protective factor, had the opposite impact in the model, mitigating the impact of magnification on physiological anxiety in individuals with rheumatoid arthritis. The follow-up mod graph (Figure 20) elucidates this link at different levels of resilience (high, medium, and low). The line graph illustrates that the influence of magnification on physiological anxiety reduced as the level of resilience increased.

For helplessness, table demonstrates the moderating effect ($B = -.01$, $t = -2.62$, $p < .05$) by producing variance of 27% ($\Delta R^2 = .27$, F (22.40), $p < .05$) in physiological anxiety. The moderating ability of resilience is demonstrated by the slopes in the graph (Figure 21), which show that resilience greatly reduced the impact of helplessness on physiological anxiety. The slopes' trend indicates that increasing resilience reduced the effect of helplessness on physiological anxiety.

Table 20

Mean Difference with Gender in Resilience, Pain Catastrophizing, Pain Anxiety and Social

support among RA patients (N= 200)

Variables	men		women				95% CL		Cohen's d
	N=51		n=149						
	M	SD	M	SD	*t*	*p*	LL	UP	
Resilience	65.65	14.76	59.84	16.21	2.2	.02	.73	10.88	0.37
Rumination	9.84	3.36	11.28	3.36	-2.6	.00	-2.5	-.35	0.41
Magnification	6.16	3.30	7.44	2.97	-2.6	.00	-2.2	-.35	0.40
Helplessness	17.92	7.04	20.85	5.33	-3.0	.00	-4.7	-1.0	0.46
Cog. anxiety	15.06	5.97	17.44	4.39	-3.0	.00	-3.9	-.80	0.45
Fearful think	16.20	4.79	17.74	4.58	-2.0	.04	-3.0	-.06	0.32
Esc. & avoid.	13.92	6.23	17.28	5.02	-3.8	.00	-5.0	-1.6	0.59
Phy. anxiety	11.86	4.45	12.63	3.80	-1.1	.23	-2.0	.50	-
PSS	57.64	17.53	54.32	16.23	1.2	.00	-1.9	-8.6	0.19

p>.05, p < .001

Note, *cog. Anxiety= cognitive anxiety; fearful think= fearful thinking; esc. & avoid. = escape and avoidance;*
phy. Anxiety = physiological anxiety; PSS = social support.

In above table mean difference related to gender were presented. Results show that there
are significant differences in means of men and women on different scale and subscales of study
variables. Significant differences were observed on all the scales and subscales except
physiological anxiety, which shows a non-significant difference.

Table 21

Mean Difference with Age in Resilience, Pain Catastrophizing, Pain Anxiety and Social support

Variables	Early Adult N=94		Late Adult n=106		t	p	95% CL		Cohen's d
	M	SD	M	SD			LL	UP	
Resilience	65.34	14.62	57.75	16.43	3.4	.00	3.22	11.94	0.48
Rumination	10.38	3.41	11.38	3.36	-2.0	.04	-1.94	-.04	0.29
Magnification	6.66	2.78	7.51	3.09	-2.0	.04	-1.67	-.02	0.28
Helplessness	18.88	5.74	21.18	5.92	-2.7	.00	-3.92	-.66	0.39
Cog. Anxiety	15.95	4.77	17.62	4.97	-2.4	.01	-3.04	-.31	0.34
Fearful think	16.28	4.63	18.30	4.52	-3.1	.00	-3.30	-.74	0.44
Esc & avoid	15.23	5.85	17.48	5.07	-2.9	.00	-3.77	-.72	0.41
Phy. Anxiety	12.45	4.07	12.41	3.92	.07	.94	-1.07	1.15	-
PSS	58.21	16.04	52.44	16.69	2.4	.01	1.17	10.37	0.35

p>.05, p < .001

Note, cog. Anxiety= cognitive anxiety; fearful think= fearful thinking; esc. & avoid. = escape and avoidance; phy. Anxiety = physiological   anxiety; PSS = social support.

This table indicates that significant differences exist between early and late adulthood. Only physiological anxiety shows non-significant results. Rest of all variables show significant relation and have small to medium effect size.

Table 22

Mean Difference with the Duration of Illness in Resilience, Pain Catastrophizing, Pain

Anxiety, and Social support among RA patients (N= 200)

Variables	6m-5y		5y-18y				95% C		Cohen's d
	n=125		n=75				LL	UP	
	M	SD	M	SD	t	p			
Resilience	63.90	15.20	57.03	16.54	2.9	.003	2.34	11.39	0.43
Rumination	10.62	3.26	11.39	3.62	-1.5	.127	-1.74	-.21	-
Magnification	6.73	2.90	7.75	3.00	-2.3	.019	-1.86	-.17	0.34
Helplessness	19.19	6.00	21.16	5.55	-2.8	.005	-4.10	-.73	0.34
Cog. Anxiety	16.09	5.08	18.08	4.45	-2.8	.005	-3.39	-.59	0.41
Fearful think	16.51	4.76	18.75	4.20	-3.3	.001	-3.54	-.92	0.49
Esc & avoid	15.48	5.55	18.00	5.22	-3.1	.002	-4.08	-.95	0.46
Phy. Anxiety	12.44	4.07	12.41	3.84	.05	.953	-1.11	1.18	-
PSS	58.10	15.31	50.38	17.59	3.2	.001	3.03	12.40	0.46

p>.05, p < .001

Note, cog. Anxiety= cognitive anxiety; fearful think= fearful thinking; esc. & avoid. = escape and

avoidance; phy. Anxiety = physiological anxiety; PSS = social support.

In the above table, mean differences regarding the duration of illness were presented. According to the results, there are significant mean differences in duration of 6m to 5yrs and 6yrs to 18 yrs. Except for rumination and physiological anxiety, a significant difference was observed among all other variables.

Table 23

Mean Difference with the Duration of Treatment in Resilience, Pain Catastrophizing, Pain Anxiety, and Social support among RA patients (N= 200)

Variables	6m-5y		5y-16y				95%CL		Cohen's d
	n=131		n=69						
	M	SD	M	SD	*t*	*p*	LL	UP	
Resilience	63.60	15.03	56.99	16.98	2.8	.005	1.99	11.23	0.41
Rumination	10.74	3.34	11.23	3.55	-1.5	.003	-1.49	-.21	0.14
Magnification	6.90	2.91	7.51	3.06	-2.4	.001	-1.47	-.26	0.20
Helplessness	19.54	5.74	21.16	6.19	-2.6	.005	-3.35	-.11	0.27
Cog. Anxiety	16.35	4.88	17.75	4.95	-1.9	.005	-2.84	-.03	0.28
Fearful think	16.75	4.61	18.49	4.62	-2.5	.012	-3.09	-.39	0.37
Esc & avoid	15.77	5.46	17.66	5.55	-2.3	.021	-3.50	-.28	0.34
Phy. Anxiety	12.37	4.06	12.55	3.84	-.29	.766	-1.34	1.99	0.04
PSS	56.60	15.91	52.52	17.61	1.6	.001	3.77	12.39	0.24

p>.05, p < .001

Note, cog. Anxiety= cognitive anxiety; fearful think= fearful thinking; esc. & avoid. = escape and avoidance; phy. Anxiety = physiological anxiety; PSS = social support.

In above table, mean difference regarding duration of treatment were presented. According to results, there are significant mean differences in duration of 6m to 5years and 6 years to 16 years. Except physiological anxiety, significant difference was observed among all other variables.

Chapter 5

DISCUSSION

5.1 Summary

The current study was aimed to explore the effect of pain catastrophizing and pain anxiety in the patients of rheumatoid arthritis. RA, itself is quite a painful disease. So the researchers interest developed by observing the physical pain of the patients and introspecting the possible psychological outcomes. The potential moderating factors were resilience and social support from family members, friends and others. In order to explore all these factors in rheumatoid arthritis patients, data was collected from the different government hospitals of Islamabad and Rawalpindi. The data collection letter from university was presented to hospital's higher authority and after getting the official permission, data collection step was initiated. Due to covid 19 wave at its peak, OPD's were reduced to only 3 days of the week and timings were cut down to 4 hours of the day. The flow of the RA patients was effected, so it took bit longer for the researcher to collect data. The age range of the sample was 22 to 60 while duration of disease and duration of treatment were also considered as important part of information. Both, male and female patients were included in the research. This study consisted of two stages: pilot study was the phase one in which tools of the study were verified with sample size of 50. The psychometric properties of the scales show the accuracy and suitability of the translated versions to use in the Pakistani culture. In second phase, the results were compiled based on main objectives and hypotheses of the study.

5.2 Discussion

The purpose of the study was to assess the relationship between pain catastrophizing (magnification, rumination, and helplessness) and pain anxiety (i.e. fearful thinking, cognitive anxiety, escape, and physiological anxiety) among the patients suffering from rheumatoid arthritis. The study also aimed to know whether resilience and social support (friends, family, and significant others) have a moderating or non-moderating influence on the link between pain anxiety and pain catastrophizing

Linear and multiple regression and moderation analyses and t-tests were computed to verify the hypothesis of the study and to see the impact of pain anxiety, pain catastrophizing, resilience, and social support on the sample of 200 rheumatoid arthritis patients. Age was grouped as a dichotomous variable to compare age groups and in this study, participants were grouped in the younger age group vs older age group (18-45, 2= 46-85). Similarly gender was also dichotomized (1 = male, 2 = female).

Any form of arthritis, which includes rheumatoid arthritis (RA), osteoarthritis (OA), ankylosing spondylitis, psoriatic arthritis (PsA), lupus, fibromyalgia, or gout, can lead to the severe negative effect on patient's mental & physical health and in some patients, but it has been observed to work the other way around. Arthritis symptoms can worsen with mental health problems. Limitations that are more functional have been observed in patients with compromised mental health and arthritis they more likely don't adhere to the treatment regimens prescribed by their consultants, and this results in increasing the odds of developing other health problems. The course and management of your arthritis can be significantly affected by the vicious cycle of pain, negative mood, and poor health. So the importance of the psychological process cannot be denied in rheumatoid arthritis patients.

Table 8 shows the correlation between all of the study's variables. The table's results are consistent with the hypotheses. The findings of the study backed up the theory that there is a link

between pain anxiety and pain catastrophizing. The work of Kadimpati and colleagues (2015) also demonstrate that there is strong positive association between pain anxiety and pain catastrophizing. According to main study's second hypothesis, pain anxiety is negatively correlated with resilience. These findings were supported by the results and are in line with the researches done by Carmen et al., (2012) about resilience and pain anxiety. Similarly, results of table 7 support the third hypothesis that there is a negative relation between pain anxiety and social support, which is in line with the study of Kia et al., (2006).

Fourth hypothesis related to negative relation between pain catastrophizing and social support is verified by the results of table 8. These findings are relatable to the conclusion of the research done by Keskindag and his fellows in 2020. Fifth hypothesis assumes that there is negative relation between pain catastrophizing and resilience. Findings of the table 8 fully support this statement. Vesta and colleagues (2021) have concluded similar results in a study, where they found that increase in resilience, decreases pain catastrophizing among patients with total knee arthroplasty.

The main study's hypothesis six suggests that pain catastrophizing and pain anxiety have a significant association. Table (9)'s findings supported this hypothesis to some extent. Pain catastrophizing and pain anxiety are highly correlated. One of the most consistent findings has been the link between catastrophizing and increased pain. Catastrophizing and pain have been linked in rheumatoid arthritis, mixed severe back pain, low back pain, surgery, dental procedures, traumatic injuries, burn dressing changes, asymptomatic individuals participating in experimental pain procedures, and varsity athletes (Keefe, 1998).

Pain-related anxiety may be contributed by catastrophizing, which can then lead to avoidance of physical activity and subsequent disability (Vlaeyen, 1995). In a recent study by Turner et al. in 2000, it was found out that pain beliefs mediated the relationship between catastrophizing and disability, which suggests that disability may indirectly be influenced by

catastrophizing through other pain appraisals. One such appraisal may be pain-related anxiety. So these studies are also supporting the current hypothesis that the pain catastrophizing is a significant positive predictor of pain anxiety.

The sense of pain may be enhanced in the context of pain anxiety, according to Elliott et al., (2003). Anxiety about painful exacerbations owing to movements or the existence of catastrophizing (emotional maladjustment) leads to more severe pain and impairment, according to a study of people with chronic low back pain.

These findings of table 8 are also exactly in line with the studies of Turk and Okifuji, (2002) and Keefe et al., (2004) theorizing that high levels of pain catastrophizing result in increased pain anxiety and pain intensity. On subscales level, rumination didn't show significance with any of pain anxiety's subscale except fearful thinking. One reason could be that this is still an underexplored feature of pain (Schütze, 2016; Ziadni et al., 2018), which is a central aspect of perhaps the most widely studied psychological predictor– pain catastrophizing (PC) of adverse pain outcomes.

Schütze et al., 2017 explained another cause. Patients with chronic pain and a higher level of catastrophizing, according to them, believe that rumination can help them solve their problems cognitively and make them attentive to future hazards. Collecting pre- and post-intervention data, particularly during psychological or multimodal treatments aimed at reducing pain-related rumination and pain catastrophizing, can help to gain a better understanding of this process. While positive relation is significantly predicted by both magnification and helplessness with all the subscales of pain anxiety i.e. cognitive anxiety, fearful thinking, escape and avoidance, and physiological anxiety among patients suffering from rheumatoid arthritis. In a study done by Craner and colleagues (2016), magnification and helplessness showed unique discrepancies while predicting the pain-related anxiety and low mood while subscales rumination didn't show impact on any of the dependent measures.

Between pain anxiety and pain catastrophizing, a bidirectional interaction likely exists. Some shared characteristics of pain anxiety and pain catastrophizing included attention to impending threats and ruminating the likelihood of the negative outcomes (Sullivan, 1998). In the maintenance or the exacerbation of anxiety cognitive distortions, such as pain catastrophizing, are thought to play a pivotal role (Field, 2008). High correlations between pain anxiety and pain catastrophizing was indicated by another recent study (r = 0.45) (George, 2006).

The seventh hypothesis of the studies held that social support decreases pain anxiety among patients of rheumatoid arthritis. Findings of the table (10) supported this assumption and found that the presence of social support, attenuate pain anxiety. According to Arnold and his fellows (2008), patients with arthritis find it difficult to plan any social recreational activity with family, friends, or spouses because it is hard for them to predict how they are going to feel. This can result in an increase in social isolation, a decrease in social support, and subsequently, there is an increase in severity of pain-related anxiety, burnout, and depression. Zyrianova and his colleagues (2006) has described in their study that increasing the social support is important in the managing of any form of anxiety and depression in patients with rheumatoid arthritis.

The next hypothesis of the study states that resilience decreases pain anxiety in rheumatoid arthritis patients. The findings of the table (11) affirmed this assumption and found that resilience had a significant negative impact on pain anxiety subscales. These findings are quite similar to a study conducted by Carver et al., in 2010 which reveals that resilience is positively associated with quality of life and negatively with anxiety related to pain. Similarly, research by Pulvers & Hood, (2013) exhibit that by lowering pain-related anxiety, resilience plays an important role in enhancing the well-being of patients with chronic pain.

Results of assumption related to moderating role of social support are presented in Tables 12, 13, 14, and 15. According to these tables, social support plays a role of moderator in the relation of pain anxiety and pain catastrophizing. The findings are partially supported by the results. A study by Martínezt in 2008 revealed that there was a modest but statistically significant relationship between social support and pain catastrophizing, indicating that by adapting higher levels of social support could be related to less passive pain coping strategies. Therefore, an adaptation of a higher level of social support also plays a vital role in cushioning the relationship between pain anxiety (cognitive anxiety, fearful thinking, escape and avoidance, and physiological anxiety) and pain catastrophizing (rumination, magnification, and helplessness). However, the moderating impact of social support between rumination and cognitive anxiety was not significant. One of the reasons could be that after a stressful event, the amount of engagement of individuals in self-focus ruminative behavior determines the degree of distressful experience after that event (Moberly et al., 2008).

Individuals' social support resources reduce the incidence of physical and psychological disorders by preventing stressful life events from occurring (Moore, 2015). The most important role of social support is to act as a buffer, lowering or balancing the psychological harm produced by stressful life events and ongoing challenges. When people are faced with stressful life events, however, addressing basic social needs like love, compassion, and belonging to a community, as well as mental, material, and emotional consolation, has a direct impact on mental health (Terzi, 2008). Individuals' perceptions of social support from inside and beyond the family assist them regulate stressful situations

and their possible negative repercussions, as well as help them establish a positive outlook on the future by giving them the feeling of company (Karadag et al., 2019).

The next hypothesis states that resilience buffers the effect of pain catastrophizing and pain anxiety in patients with rheumatoid arthritis. Tables 16, 17, 18, and 19 displays the moderating role of resilience. According to the results of the above-mentioned tables, for all the subscales of pain anxiety and pain catastrophizing, resilience showed a high buffering effect. Empirical justification can be drawn from the previous work done by Palit et al., (2020). According to them, resilience act as a protective factor against negative psychological functions. Fredrickson's (2001) theory of broaden and build states that it is possible that patients with high resilience may go through high positive emotions and increased capability to convert their experience related to severe pain into low-intensity pain. Therefore, resilience can easily weaken the relation between catastrophic thoughts related to pain and anxiety related to pain. The current findings are also in line with present data of the important impact on pain by of variables of positive psychology.

Stressors in the environment, negative social factors, lack of social support, and work history (Gatchel, 2007) can influence a person's health. The resilience and maintained social support are key conceptual variables as suggested by resilience theories. The results of this study also supported this proposition. A study by Newton and John., (2014), found a statistically significant positive association between higher resilience and better social supports, and despite their pain, more resilient participants were also significantly more likely to be found working.

Mean differences related to gender and age are presented in table 20 and 21 respectively. According to the results of the following tables, except physiological anxiety,

all other variables have presented significant differences. With the increases of age, resilience and social support decrease, and pain anxiety and pain catastrophizing increase. The findings related to gender difference and resilience are in tandem with findings of previous research. Age and gender may be stated as two of the factors that contribute to resilience among traumatized individuals. According to Sambu and Mhongo (2019), males have a higher level of resilience as compared to females. Similarly, the young adults had stronger resilience the older adults. These findings were in accord with the work done by Gooding et al., (2012).

Despite the lack of statistical significance in multivariate analysis, female patients and patients with medical comorbidities and concomitant musculoskeletal pain had high pain catastrophizing. Female patients are more prone than male patients to high pain catastrophizing under chronic pain settings, according to Sjors et al., (2011). These findings are consistent with current research findings on gender and pain catastrophizing.

Unlike McLean and Hope (2010), the gender effect was not present for physiological anxiety in the current study. This difference in findings between the two studies could be explained by the modifications of our procedures. In McLean and Hope's (2010) study the participants were verbally informed and showed a video about the specifics of the behavior approach test, any such pre informed action providing a description of the details were not included in this study. Thus, participants' anxiety may have increased while anticipating the task by providing a visual of the anxiety-provoking stimulus. So no sign of physiological arousal was shown by the participants during their treatment.

Similarly, the social support mean scores in this study decrease as people get older. According to a recent study, as people get older, their social communication networks deteriorate,

and this, combined with family members leaving home, can lead to a low perception of family support (Karadag, 2019).

According to this study, as people get older, their resilience decreases. This is reinforced by Karadag and colleagues' (2019) research, which found an inverse relationship between age and resilience. According to the results of Khorshidi et al., (2017) and Kimura et al., (2019) in this study, the pain anxiety in female was significantly higher than male, that can be due to the difference in pain tolerance in male and female and the tendency of women to express their problems.

Duration of illness and duration of treatment are two other important demographic whose significant mean difference on all the study variables are presented in table 22 and 23. Pain catastrophizing is higher in the long-term duration of illness, which is supported by the result of the study done by Cano (2004). According to the respective study, the long-term illness increases pain catastrophizing in chronic pain patients, and with an increase in catastrophizing, anxiety related to fear also increases.

Patients with rheumatoid arthritis have significantly higher levels of resilience in early years of illness, early adulthood and treatment than in later years. Thus, we can speculate, according to our data, that the resilience development is a relatively fast adaptive response after a diagnosis of rheumatoid arthritis is made out (Ciaffi, 2020). Despite the fact that rehabilitation is a personal experience, cultural and social variables can influence how people react to illnesses. According to studies focusing on minority communities, spiritual and culturally significant activities led to resilience (Chan, 2006).

Duration of treatment has a great impact on all the variables of the study. Results reveal that resilience and social support decreases and pain catastrophizing and pain anxiety increases as the duration of treatment gets prolonged. Cano did a study on married

people with chronic pain in 2004 that found that pain duration is a characteristic with substantial implications for catastrophizing and support research. Spouses may increase catastrophizing by providing emotional and pain-specific support at shorter pain durations, assuming that people with chronic pain are making appropriate requests for help. Couples may retreat from or respond negatively to catastrophizing after failed and unsatisfactory help attempts. As a result, it is expected that pain catastrophizing will be positively linked with support in the early stages of a pain problem but negatively associated with support as the pain problem advances (Cano, 2004).

Physiological anxiety remains non-significant with all the demographics. There could be certain reasons. One of them can be that intensity of pain is the prime focus of attention as compared to physiological signs like headache, etc. another strong argument was given by Norton and Asmundson (2003). According to them, physiological being a significant component of pain anxiety, it seems to be overlooked greatly in empirical and theoretical studies of pain.

5.3 Limitations and Suggestion

The methodology used is not without limitations. First limitation was that patients were assessed only once. Second, inclusion in the study was limited to only patients. In further studies, caregiver can also be included. Third, no evaluation was done by the study on other protecting factors such as physical health, positive feelings and secluded prayer that too have shown to effect the association among pain anxiety and pain catastrophizing.

Apart from these above-mentioned limitations, this study appeals the consideration to the importance of the effect of resilience and social support on the relationship between pain anxiety and pain catastrophizing. To explore other potential study confounders, further research is needed. For instance, adequate diversity in a sample, like the inclusion criteria of patients with diverse

comorbid diseases can be studied. Socioeconomic status can also be considered in future studies. In addition, this would be appropriate to replicate longitudinal data with this study and to test the strength of social support and resilience as a mediator/moderator among the patients of rheumatoid arthritis.

5.4 Implications of the Study

A new mode of think has emancipated due to advances in psychological, medical, and physiological fields and there are new paradigms that are emerging about health and illness. Particularly, psychological science has the means and ideas to augment health outcomes through an efficient understanding of health-promoting and health-damaging behaviors and patterns. This study is related to physical illness and psychological detriments and has many scientific and tangible benefits. Furthermore, it will add up in the literature regarding the study's variables. Another potential impact of this study is that it tries to comprehend how behavioral and social factors impact health and illness. This study will also assist and provide guidance to clinical/health psychologists and medical professionals about the understanding of conservation of health associated behavior patterns and issues, the promotion, the improvement of the health care system along with analysis and prevention and treatment of illness from various professional and modern lenses.

5.5 Conclusion

Personality traits can play an important part in patient adjustment, thus doctors and psychologist should consider the positive path to capacity in order to gain a better understanding of the chronic pain experience. The current study found that social support and resilience moderated the association between pain catastrophizing and pain anxiety in rheumatoid arthritis patients, which is important for successful treatment. Our findings

have immediate practical implications and provide important insight into the link between social support, resilience, and psychological maladjustments in rheumatoid arthritis patients. Patients benefit from social support from family, friends, and significant others, which should be recognized and supported by healthcare professionals who interact with patients and their families on a regular basis. Furthermore, improving the quality of life of patients with rheumatoid arthritis should be a primary goal of treatment in order to help them become more self-reliant and better manage their disease.

REFERENCES

REFERENCES

Abdallah, C. G., & Geha, P. (2017). Chronic pain and chronic stress: two sides of the same coin?. *Chronic Stress*, *1*, 2470547017704763.

Ahmad, A. H., & Zakaria, R. (2015). Pain in times of stress. *The Malaysian journal of medical sciences: MJMS*, *22*(Spec Issue), 52.

Aiyegbusi, A. I., Ishola, T., & Akinbo, S. R. A. (2018). Pain coping strategies with functional disability and quality of life in patients with knee osteoarthritis in Lagos, Nigeria. *Journal of Applied Sciences and Environmental Management*, *22*(12), 1931-1936.

Aldebot, S., & de Mamani, A. G. (2009). Denial and acceptance coping styles and medication adherence in schizophrenia. *The Journal of nervous and mental disease*, *197*(8), 580–584. https://doi.org/10.1097/NMD.0b013e3181b05fbe

Aletaha, D., Eberl, G., Nell, V. P., Machold, K. P., & Smolen, J. S. (2002). Practical progress in realisation of early diagnosis and treatment of patients with suspected rheumatoid arthritis: results from two matched questionnaires within three years. *Annals of the rheumatic diseases*, *61*(7), 630–634. https://doi.org/10.1136/ard.61.7.630.

Aléx, L. (2010). Resilience among very old men and women. *Journal of Research in Nursing*, *15*(5), 419-431.

Alicia E., (2008, April) López Martínez RosaEsteve Zarazaga Carmen Ramírez Maestre, *The Journal of Pain, 9(4)*, 373-379.

Alizadeh, S., Khanahmadi, S., Vedadhir, A., & Barjasteh, S. (2018). The Relationship between Resilience with Self- Compassion, Social Support and Sense of Belonging in Women with Breast Cancer. *Asian Pacific journal of cancer prevention: APJCP*, *19*(9), 2469–2474. https://doi.org/10.22034/APJCP.2018.19.9.2469

Alschuler, K. N., Kratz, A. L., & Ehde, D. M. (2016). Resilience and vulnerability in individuals

 with chronic pain and physical disability. *Rehabilitation psychology*, *61*(1), 7–18.

 https://doi.org/10.1037/rep0000055

Andrade, G., & Vaitsman, J. (2002). Apoio social e redes: *conectando solidariedade e saúde.*

Angst, F. (2003). Quality of life assessment in osteoarthritis. *Expert review of pharmacoeconomics*

 & outcomes research, *3*(5), 623-636.

Arnett, J. J. (2008*). Adolescence and Emerging Adulthood* (4th ed.). Pearson.

Arnold, L. M., Crofford, L. J., Mease, P. J., Burgess, S. M., Palmer, S. C., Abetz, L., & Martin, S.

 A. (2008). Patient perspectives on the impact of fibromyalgia. *Patient education and*

 counseling, *73*(1), 114-120.

Artana, N. P. M. A. (2020, November). Brief Dialectical Behavior Therapy (DBT) to Reduce Emotional

 Dysregulation: A Single Case Study. In *3rd International Conference on Intervention and Applied*

 Psychology and the 4th Universitas Indonesia Psychology Symposium for Undergraduate Research

 (pp. 169-179). Atlantis Press.

Asmundson, G. J., & Katz, J. (2009). Understanding the co-occurrence of anxiety disorders and

 chronic pain: state-of-the-art. *Depression and anxiety*, *26*(10), 888-901.

Asmundson, G. J., Norton, P. J., & Norton, G. R. (1999). Beyond pain: the role of fear and

 avoidance in chronicity. *Clinical psychology review*, *19*(1), 97–119.

 https://doi.org/10.1016/s0272-7358(98)00034-8.

Asmundson, G., Vlaeyen, J., & Crombez, G. (Eds.). (2004). *Understanding and treating fear of*

 pain. Oxford University Press.

Bäckryd, E., Persson, E. B., Larsson, A. I., Fischer, M. R., & Gerdle, B. (2018). Chronic pain

 patients can be classified into four groups: Clustering-based discriminant analysis of

psychometric data from 4665 patients referred to a multidisciplinary pain centre (a SQRP study). *PLoS One*, *13*(2), e0192623.

Bao, Y., Li, L., Guan, Y., Wang, W., Liu, Y., Wang, P., & Wang, Y. (2017). Prevalence and associated positive psychological variables of anxiety and depression among patients with central nervous system tumors in China: a cross-sectional study. *Psycho-oncology*, *26*(2), 262-269.

Bauer, H., Emeny, R. T., Baumert, J., & Ladwig, K. H. (2016). Resilience moderates the association between chronic pain and depressive symptoms in the elderly. *European journal of pain*, *20*(8), 1253-1265.

Beck, A. T., Emery, G., and Greenberg, R. L. (2005). *Anxiety Disorders and Phobias: A Cognitive Perspective.* New York, NY: Basic Books.

Becker, S. (2018). Psychological processes in chronic pain: influences of reward and fear learning as key mechanisms–behavioral evidence, neural circuits, and maladaptive changes. *Neuroscience*, *387*, 72-84.

Benyon, K., Hill, S., Zadurian, N., & Mallen, C. (2010). Coping strategies and self-efficacy as predictors of outcome in osteoarthritis: a systematic review. *Musculoskeletal care*, *8*(4), 224–236. https://doi.org/10.1002/msc.187.

Berner, C., Erlacher, L., Fenzl, K. H., & Dorner, T. E. (2019). Medication adherence and coping strategies in patients with rheumatoid arthritis: a cross-sectional study. *International Journal of Rheumatology*, *2019*. https://doi.org/10.1155/2019/4709645

Bilevicius, E., Sommer, J. L., Keough, M. T., & El-Gabalawy, R. (2020). An examination of comorbid generalized anxiety disorder and chronic pain on substance misuse in a Canadian population-based survey. *The Canadian Journal of Psychiatry*, *65*(6), 418-425.

Birch, J. T., Jr, & Bhattacharya, S. (2010). Emerging trends in diagnosis and treatment of rheumatoid arthritis. *Primary care*, *37*(4), 779–vii. https://doi.org/10.1016/j.pop.2010.07.001

Boden, J. M. (2018). The same but different? Applicability of a general resilience model to understand a population of vulnerable youth. *Child Indicators Research*, *11*(1), 79-96.

Bonanno G. A. (2004). Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? *The American psychologist*, *59*(1), 20–28. https://doi.org/10.1037/0003-066X.59.1.20

Bonanno, G. A., Galea, S., Bucciarelli, A., & Vlahov, D. (2006). Psychological Resilience After Disaster: New York City in the Aftermath of the September 11th Terrorist Attack. Psychological Science, 17(3), 181–186. https://doi.org/10.1111/j.1467-9280.2006.01682.x

Borkovec, T. D., Robinson, E., Pruzinsky, T., & DePree, J. A. (1983). Preliminary exploration of worry: Some characteristics and processes. *Behaviour research and therapy*, *21*(1), 9-16.

Boselie, J., Vancleef, L., Smeets, T., & Peters, M. L. (2014). Increasing optimism abolishes pain-induced impairments in executive task performance. *Pain*, *155*(2), 334–340. https://doi.org/10.1016/j.pain.2013.10.014

Brown, B. (2006). Shame Resilience Theory: A Grounded Theory Study on Women and Shame. *Families in Society*, *87*(1), 43–52. https://doi.org/10.1606/1044-3894.3483

Brown, E. R., & Foo, K. Y. (1989). Evaluation of variability in resilient modulus test results (ASTM D4123).

Brattberg, G. (2004). Do pain problems in young school children persist into early adulthood? A 13-year follow-up. *European Journal of Pain*, *8*(3), 187-199.

Buer, N., & Linton, S. J. (2002). Fear-avoidance beliefs and catastrophizing: occurrence and risk

    factor in back pain and ADL in the general population. *Pain*, *99*(3), 485–491.

    https://doi.org/10.1016/S0304-3959(02)00265-8.

Caes, L. (2015). The role of pain-related anxiety in adolescents' disability and social impairment:

    ALSPAC data. *European journal of pain*, *19*(6), 842-851.

Campbell, C. M., Buenaver, L. F., Finan, P., Bounds, S. C., Redding, M., McCauley, L., & Smith,

    M. T. (2015). Sleep, pain catastrophizing, and central sensitization in knee osteoarthritis

    patients with and without insomnia. *Arthritis care & research*, *67*(10), 1387-1396.

Cano, A. (2004). Pain catastrophizing and social support in married individuals with chronic pain:

    the moderating role of pain duration. *Pain*, *110*(3), 656-664.

Cano, A., Leong, L. E., Williams, A. M., May, D. K., & Lutz, J. R. (2012). Correlates and

    consequences of the disclosure of pain-related distress to one's spouse. *PAIN®*, *153*(12),

    2441-2447.

Carmen M. Galvez-Sánchez, Casandra I. Montoro, Stefan Duschek & Gustavo A. Reyes del

    Paso,(2020). *Quality of Life Research 29*, 1871–1881.

Carolin, B. (2019). Medication adherence and coping strategies in patients with rheumatoid

    arthritis: a cross-sectional study. *International Journal of Rheumatology*, *2019*.

Carver, C. S., & Connor-Smith, J. (2010). Personality and coping.

Chan, C. L. (2006). Turning curses into blessings: an Eastern approach to psychosocial

    oncology. *Journal of Psychosocial Oncology*, *24*(4), 15-32.

Chaves, J. F., & Brown, J. M. (1987). Spontaneous cognitive strategies for the control of clinical

    pain and stress. *Journal of behavioral medicine*, *10*(3), 263-276.

Cho, S. K., Kim, D., Won, S., Lee, J., Choi, C. B., Choe, J. Y., Hong, S. J., Jun, J. B., Kim, T. H., Koh, E., Lee, H. S., Lee, J., Yoo, D. H., Yoon, B. Y., Bae, S. C., & Sung, Y. K. (2017). Factors associated with time to diagnosis from symptom onset in patients with early rheumatoid arthritis. *The Korean journal of internal medicine*, *34*(4), 910–916. https://doi.org/10.3904/kjim.2017.113

Choi S, Lee K-H. (2018). Correction: Clinical management of seronegative and seropositive rheumatoid arthritis: A comparative study. *Plos One*. 13(6): e0199468. doi: 10.1371/journal.pone.e0199468

Ciaffi, J. (2020). Living with arthritis: a "training camp" for coping with stressful events? A survey on resilience of arthritis patients following the COVID-19 pandemic. *Clinical rheumatology*, *39*(11), 3163–3170. https://doi.org/10.1007/s10067-020-05411-x

Ciência & Saúde Coletiva, 7(4), 925-934.

Cohen, S. (2004). Social relationships and health. *American Psychology, 59(8)*, 676-684.

Combe B. (2009). Progression in early rheumatoid arthritis. *Best practice & research. Clinical rheumatology*, *23*(1), 59–69. https://doi.org/10.1016/j.berh.2008.11.006

Craner, J. R., Sperry, J. A., & Evans, M. M. (2016). The relationship between pain catastrophizing and outcomes of a 3-week comprehensive pain rehabilitation program. *Pain Medicine*, *17*(11), 2026-2035.

Cranney A,(2009). Holroyd-Leduc JM. Acute monoarthritis: what is the cause of my patient's painful swollen joint? *CMAJ.180(1),*59-65.

Crombez, G., Eccleston, C., Van Damme, S., Vlaeyen, J. W., & Karoly, P. (2012). Fear-avoidance model of chronic pain: the next generation. *The Clinical journal of pain*, *28*(6), 475–483.

https://doi.org/10.1097/AJP.0b013e3182385392*Curr Pain Headache Rep. 2016 Jun; 20(6):39*

D'Agostino M. A. (2010). Ultrasound imaging in spondyloarthropathies. *Best practice & research. Clinical rheumatology*, *24*(5), 693–700. https://doi.org/10.1016/j.berh.2010.05.003

D'Agostino M. A. (2012). Role of ultrasound in the diagnostic work-up of spondylarthritis. *Current opinion in rheumatology*, *24*(4), 375–379. https://doi.org/10.1097/BOR.0b013e328354612f.

Dalbeth, N., & Doyle, A. J. (2012). Imaging of gout–An overview. *Best Practice & Research Clinical Rheumatology*, *26*(6), 823-838.

Davis, M. C. (2015). Mindfulness and cognitive–behavioral interventions for chronic pain: Differential effects on daily pain reactivity and stress reactivity. Journal of Consulting and Clinical Psychology, 83(1), 24–35. https://doi.org/10.1037/a0038200

Davey, G. C., & Levy, S. (1998). Catastrophic worrying: personal inadequacy and a perseverative iterative style as features of the catastrophizing process. *Journal of Abnormal Psychology*, *107*(4), 576.

Day, M. A., Matthews, N., Newman, A., Mattingley, J. B., & Jensen, M. P. (2019). An evaluation of the behavioral inhibition and behavioral activation system (BIS-BAS) model of pain. *Rehabilitation Psychology*, *64*(3), 279.

de Brouwer, S. J., Kraaimaat, F. W., Sweep, F. C., Creemers, M. C., Radstake, T. R., van Laarhoven, A. I., van Riel, P. L., & Evers, A. W. (2010). Experimental stress in inflammatory rheumatic diseases: a review of psychophysiological stress responses. *Arthritis research & therapy*, *12*(3), R89. https://doi.org/10.1186/ar3016

DE COLOMBIA, R. (2015). Ministerio de Salud y Protección Social. *Encuesta Nacional de la Situación Nutricional ENSIN [Internet].*

De Pascalis, V., & Scacchia, P. (2019). The influence of reward sensitivity, heart rate dynamics and EEG-delta activity on placebo analgesia. *Behavioural brain research*, *359*, 320–332. https://doi.org/10.1016/j.bbr.2018.11.014

De Pascalis, V., Cozzuto, G., Caprara, G. V., & Alessandri, G. (2013). Relations among EEG-alpha asymmetry, BIS/BAS, and dispositional optimism. *Biological psychology*, *94*(1), 198-209.

Demange, V., Guillemin, F., Baumann, M., Suurmeijer, T. P., Moum, T., Doeglas, D., Briançon, S., & van den Heuvel, W. J. (2004). Are there more than cross-sectional relationships of social support and support networks with functional limitations and psychological distress in early rheumatoid arthritis? the European Research on Incapacitating Diseases and Social Support Longitudinal Study. *Arthritis and rheumatism*, *51*(5), 782–791. https://doi.org/10.1002/art.20694

Descartes, R. (2009). The passions of the soul (1649). In B. F. Gentile & B. O. Miller, Foundations of psychological thought: A history of psychology (pp. 5–21). Sage Publications, Inc.

Dijkstra, A., Vlaeyen, J. W., Rijnen, H., & Nielson, W. (2001). Readiness to adopt the self-management approach to cope with chronic pain in fibromyalgic patients. *Pain*, *90*(1-2), 37–45. https://doi.org/10.1016/s0304-3959(00)00384-5

Ding, J., Strachan, M. W., Reynolds, R. M., Frier, B. M., Deary, I. J., Fowkes, F. G., Lee, A. J., McKnight, J., Halpin, P., Swa, K., Price, J. F., & Edinburgh Type 2 Diabetes Study Investigators (2010). Diabetic retinopathy and cognitive decline in older people with type 2

diabetes: the Edinburgh Type 2 Diabetes Study. *Diabetes*, *59*(11), 2883–2889. https://doi.org/10.2337/db10-0752.

Dirik G, Karanci AN. (2010). Psychological distress in rheumatoid arthritis patients: an evaluation within the conservation of resources theory. *Psychology Health, 25(5,)*617–632.

Dixon, K. E. (2007). Psychological interventions for arthritis pain management in adults: a meta-analysis. *Health Psychology. 26(3),* 241–250.

Dixon, W. G., & Symmons, D. P. (2005). Does early rheumatoid arthritis exist? *Best Practice & Research Clinical Rheumatology*, *19*(1), 37-53.

Dissanayake, R. K. (2010). Psychosocial interventions as adjunct therapy for patients with rheumatoid arthritis: a systematic review. *International journal of rheumatic diseases*, *13*(4), 324-334.

Doeglas, D., Suurmeijer, T., Krol, B., Sanderman, R., van Rijswijk, M., & van Leeuwen, M. (1994). Social support, social disability, and psychological well-being in rheumatoid arthritis. *Arthritis & Rheumatism: Official Journal of the American College of Rheumatology*, *7*(1), 10-15.

Dörner, T., Egerer, K., Feist, E., & Burmester, G. R. (2004). Rheumatoid factor revisited. *Current opinion in rheumatology*, *16*(3), 246-253.

Dryden, W, (1994). Reason and emotion in psychotherapy: Thirty years on. *J Rational-Emototive Cognitive-Behaviour Therapy* 12, 83–99 (1994). https://doi.org/10.1007/BF02354606.

Eccleston, (2014).Systematic Review and Meta-Analysis of Psychological Therapies for Children With Chronic Pain, Journal of Pediatric Psychology, 39(8), Pages 763–782, https://doi.org/10.1093/jpepsy/jsu008.

Eccleston, Christopher[a,*]; Fisher, Emma Alice; Vervoort, Tine; Crombez,(2012). Geert Worry and
    catastrophizing about pain in youth: A reappraisal, Pain: *153(8)*), 1560-1562 doi:
    10.1016/j.pain.2012.02.039

Edwards, R. R. (2009). Catastrophizing and depressive symptoms as prospective predictors of
    outcomes following total knee replacement. *Pain Research and Management*, *14*(4), 307-
    311.

El Miedany, Y., Youssef, S., Mehanna, A. N., & El Gaafary, M. (2008). Development of a scoring
    system for assessment of outcome of early undifferentiated inflammatory synovitis. *Joint*
    bone spine, *75*(2), 155–162.

El Miedany. (2010). Incorporating patient reported outcome measures in clinical practice:
    development and validation of a questionnaire for inflammatory arthritis. *Clinical &*
    Experimental Rheumatology, *28*(5), 734.

Ellingson, L. D., Stegner, A. J., Schwabacher, I. J., Lindheimer, J. B., & Cook, D. B. (2018).
    Catastrophizing interferes with cognitive modulation of pain in women with
    fibromyalgia. *Pain medicine*, *19*(12), 2408-2422.

Ellingson, L. D., Stegner, A. J., Schwabacher, I. J., Lindheimer, J. B., & Cook, D. B. (2018).
    Catastrophizing interferes with cognitive modulation of pain in women with
    fibromyalgia. *Pain medicine*, *19*(12), 2408-2422.

Elliott, A. M., Burton, C. D., & Hannaford, P. C. (2014). Resilience does matter evidence from a
    10-year cohort record linkage study. *BMJ open*, *4*(1), e003917.
    https://doi.org/10.1136/bmjopen-2013-003917

Ellis, A. (1962). Reason and emotion in psychotherapy. Lyle Stuart.

Elfving, B. (2007). Ratings of pain and activity limitation on the visual analogue scale and global impression of change in multimodal rehabilitation of back pain–analyses at group and individual level. *Disability and Rehabilitation*, *38*(22), 2206-2216.

Elvemo, N. A., Landrø, N. I., Borchgrevink, P. C., & Håberg, A. K. (2015). Reward responsiveness in patients with chronic pain. *European Journal of Pain*, *19*(10), 1537-1543.

Evers, A. W., Kraaimaat, F. W., Geenen, R., Jacobs, J. W., & Bijlsma, J. W. (2003). Stress-vulnerability factors as long-term predictors of disease activity in early rheumatoid arthritis. *Journal of psychosomatic research*, *55*(4), 293–302. https://doi.org/10.1016/s0022-3999(02)00632-3.

Evers, A. W., Kraaimaat, F. W., Geenen, R., Jacobs, J. W., & Bijlsma, J. W. (2002). Longterm predictors of anxiety and depressed mood in early rheumatoid arthritis: a 3 and 5-year followup. *The Journal of rheumatology*, *29*(11), 2327–2336

Evers, A. W., Kraaimaat, F. W., Geenen, R., Jacobs, J. W., & Bijlsma, J. W. (2003). Stress–vulnerability factors as long-term predictors of disease activity in early rheumatoid arthritis. *Journal of psychosomatic research*, *55*(4), 293-302.

Evers, A. W., Kraaimaat, F. W., van Lankveld, W., Jongen, P. J., Jacobs, J. W., & Bijlsma, J. W. (2001). Beyond unfavorable thinking: the illness cognition questionnaire for chronic diseases. *Journal of consulting and clinical psychology*, *69*(6), 1026–1036

Evers, A. W., Kraaimaat, F. W., van Riel, P. L., & de Jong, A. J. (2002). Tailored cognitive-behavioral therapy in early rheumatoid arthritis for patients at risk: a randomized controlled trial. *Pain*, *100*(1-2), 141–153. https://doi.org/10.1016/s0304-3959(02)00274-9

Farin, E. (2015). The reciprocal effect of pain catastrophizing and satisfaction with participation in the multidisciplinary treatment of patients with chronic back pain. *Health and quality of life outcomes*, *13*(1), 1-10.

Feldman, L., Goncalves, L., Chacón-Puignau, G., Zaragoza, J., Bagés, N., & De Pablo, J. (2008). Relaciones entre estrés académico, apoyo social, salud mental y rendimiento académico en estudiantes universitarios venezolanos. *Universitas Psychologica, 7(3),*739-751.

Finckh, A., Liang, M. H., van Herckenrode, C. M., & de Pablo, P. (2006). Long-term impact of early treatment on radiographic progression in rheumatoid arthritis: A meta-analysis. *Arthritis and rheumatism*, *55*(6), 864–872. https://doi.org/10.1002/art.22353

Fisher, E., Heathcote, L., Palermo, T. M., de C Williams, A. C., Lau, J., & Eccleston, C. (2014). Systematic review and meta-analysis of psychological therapies for children with chronic pain. *Journal of pediatric psychology*, *39*(8), 763–782. https://doi.org/10.1093/jpepsy/jsu008.

Fisher, E., Heathcote, L. C., Eccleston, C., Simons, L. E., & Palermo, T. M. (2018). Assessment of pain anxiety, pain catastrophizing, and fear of pain in children and adolescents with chronic pain: a systematic review and meta-analysis. *Journal of Pediatric Psychology*, *43*(3), 314-325.

Fordyce WE. (1976). Behavioral Methods for Chronic Pain and Illness. St. Louis: Mosby,*Pain* 3(3),291-292.

Forgeron, P. A., Evans, J., McGrath, P. J., Stevens, B., & Finley, G. A. (2013). Living with difference: Exploring the social self of adolescents with chronic pain. Pain Research & Management, 18(6), e115–e123. https://doi.org/10.1155/2013/120632

France, C. R., Keefe, F. J., Emery, C. F., Affleck, G., France, J. L., Waters, S., & Edwards, C. (2004). Laboratory pain perception and clinical pain in post-menopausal women and age-matched men with osteoarthritis: relationship to pain coping and hormonal status. *Pain*, *112*(3), 274-281.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, *56*(3), 218.

Galea, S., Ahern, J., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov, D. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *The New England journal of medicine*, *346*(13), 982–987. https://doi.org/10.1056/NEJMsa013404

Galvez-Sánchez, C. M., Montoro, C. I., Duschek, S., & Del Paso, G. A. R. (2020). Pain catastrophizing mediates the negative influence of pain and trait-anxiety on health-related quality of life in fibromyalgia. *Quality of Life Research*, *29*(7), 1871-1881.

Garland, E. L., Gaylord, S. A., & Fredrickson, B. L. (2011). Positive reappraisal mediates the stress-reductive effects of mindfulness: An upward spiral process. *Mindfulness*, *2*(1), 59-67.

Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychological bulletin*, *133*(4), 581–624. https://doi.org/10.1037/0033-2909.133.4.581

Geenen, R., Van Middendorp, H., & Bijlsma, J. W. (2006). The impact of stressors on health status and hypothalamic-pituitary-adrenal axis and autonomic nervous system responsiveness in rheumatoid arthritis. *Annals of the New York Academy of Sciences*, *1069*, 77–97. https://doi.org/10.1196/annals.1351.007

George, S. Z., Dannecker, E. A. (2006). Fear of pain, not pain catastrophizing, predicts acute pain intensity, but neither factor predicts tolerance or blood pressure reactivity: an experimental investigation in pain-free individuals. *European Journal of Pain, 10(5)*, 457-465.

Gheldof, E. L., Crombez, G., Van den Bussche, E., Vinck, J., Van Nieuwenhuyse, A., Moens, G., Mairiaux, P., & Vlaeyen, J. W. (2010). Pain-related fear predicts disability, but not pain severity: a path analytic approach of the fear-avoidance model. *European journal of pain (London, England)*, *14*(8), 870.e1–870.e8709. https://doi.org/10.1016/j.ejpain.2010.01.003

Glanz, K., Rimer, B. and Viswanath, K. (2008) Health Behaviour and Health Education: Theory, Research, and Practice. 4th, Jossey-Bass, San Francisco.

Gooding, P. (2022). Associations of anxiety and depression with suicide experiences in individuals with and without childhood trauma: the role of social support. *Psychiatry research*, *309*, 114424.

González-Quiñones, J. C., & Restrepo-Chavarriaga, G. (2010). Prevalencia de felicidad en ciclos vitales y relación con redes de apoyo en población colombiana [The prevalence of happiness in life-cycles and regarding support networks in the Colombian population]. *Revista de salud publica (Bogota, Colombia)*, *12*(2), 228–238. https://doi.org/10.1590/s0124-00642010000200006

Gossec, L., Combescure, C., Rincheval, N., Saraux, A., Combe, B., & Dougados, M. (2010). Relative clinical influence of clinical, laboratory, and radiological investigations in early arthritis on the diagnosis of rheumatoid arthritis. Data from the French Early Arthritis Cohort ESPOIR. *The Journal of rheumatology*, *37*(12), 2486–2492. https://doi.org/10.3899/jrheum.100267

Greene, R. R. (2002). Holocaust survivors: A study in resilience. Journal of Gerontological Social Work, 37(1), 3–18. https://doi.org/10.1300/J083v37n01_02

Greene, R. R., Galambos, C., & Lee, Y. (2003). Resilience theory: Theoretical and professional conceptualizations. Journal of Human Behavior in the Social Environment, 8(4), 75–91.

Greene, R. R., Galambos, C., & Lee, Y. (2004). Resilience theory: Theoretical and professional conceptualizations. *Journal of human behavior in the social environment*, *8*(4), 75-91.

Goubert, L., Crombez, G., & Van Damme, S. (2004). The role of neuroticism, pain catastrophizing and pain-related fear in vigilance to pain: a structural equations approach. *Pain*, *107*(3), 234-241.

Gucciardi, D. F., Jackson, B., Coulter, T. J., & Mallett, C. J. (2011). The Connor-Davidson Resilience Scale (CD-RISC): Dimensionality and age-related measurement invariance with Australian cricketers. *Psychology of Sport and Exercise*, *12*(4), 423-433.

Guzmán, J. M., Huenchuan, S., & Montes de Oca, V. (2015). Redes de apoyo social de las personas mayores: marco conceptual. *Notas de Población, 30(77)*, 35-70.

Haase, J. E., Kintner, E. K., Robb, S. L., Stump, T. E., Monahan, P. O., Phillips, C., Stegenga, K. A., & Burns, D. S. (2017). The Resilience in Illness Model Part 2: Confirmatory Evaluation in Adolescents and Young Adults With Cancer. *Cancer nursing*, *40*(6), 454–463. https://doi.org/10.1097/NCC.0000000000000450

Häkkinen, A., Sokka, T., Kautiainen, H., Kotaniemi, A., & Hannonen, P. (2004). Sustained maintenance of exercise induced muscle strength gains and normal bone mineral density in patients with early rheumatoid arthritis: a 5 year follow up. *Annals of the rheumatic diseases*, *63*(8), 910–916. https://doi.org/10.1136/ard.2003.013003

Hanssen, M. M., Peters, M. L., Vlaeyen, J., Meevissen, Y., & Vancleef, L. (2013). Optimism lowers pain: evidence of the causal status and underlying mechanisms. *Pain*, *154*(1), 53–58. https://doi.org/10.1016/j.pain.2012.08.006

Hassett, A. L., & Finan, P. H. (2016). The Role of Resilience in the Clinical Management of Chronic Pain. *Current pain and headache reports*, *20*(6), 39. https://doi.org/10.1007/s11916-016-0567-7

Häuser, W., Finn, D. P., Kalso, E., Krcevski-Skvarc, N., Kress, H. G., Morlion, B., & Brill, S. (2014). European Pain Federation (EFIC) position paper on appropriate use of cannabis-based medicines and medical cannabis for chronic pain management. *European Journal of Pain*, *22*(9), 1547-1564.

Hazlett-Stevens, H., & Craske, M. G. (2003). The catastrophizing worry process in generalized anxiety disorder: A preliminary investigation of an analog population. *Behavioural and Cognitive Psychotherapy*, *31*(4), 387-401.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The psychological record*, *54*(4), 553-578.

Heaney, C. A., & Israel, B. A. (2008). Social networks and social support. *Health behavior and health education: Theory, research, and practice*, *4*, 189-210.

Heidari B. (2011). Rheumatoid Arthritis: Early diagnosis and treatment outcomes. *Caspian journal of internal medicine*, *2*(1), 161–170.

Heidari B. (2011). Rheumatoid Arthritis: Early diagnosis and treatment outcomes. *Caspian journal of internal medicine*, *2*(1), 161–170.

Hewlett, S., Ambler, N., Almeida, C., Cliss, A., Hammond, A., Kitchen, K., & Pollock, J. (2011).
Self-management of fatigue in rheumatoid arthritis: a randomised controlled trial of group
cognitive-behavioural therapy. *Annals of the rheumatic diseases*, *70*(6), 1060-
1067.https://doi.org/10.1002/acr.24024

Holtzman, S. (2007). One day at a time: The impact of daily satisfaction with spouse responses on
pain, negative affect and catastrophizing among individuals with rheumatoid
arthritis. *Pain*, *131*(1-2), 202-213.

Huang, Y., Huang, Y., Bao, M., Zheng, S., Du, T., & Wu, K. (2019). Psychological resilience of
women after breast cancer surgery: a cross-sectional study of associated influencing
factors. *Psychology, health & medicine*, *24*(7), 866-878.

Huenchuan, S., Guzmán, J. M., & Montes de Oca Zavala, V. (2003). Redes de apoyo social de las
personas mayores: marco conceptual. *Notas de población*.

Huguet, A., McGrath, P. J., & Pardos, J. (2011). Development and preliminary testing of a scale to
assess pain-related fear in children and adolescents. *The Journal of Pain*, *12*(8), 840-848.

Jamison, R. N., & Virts, K. L. (1990). The influence of family support on chronic pain. *Behaviour
research and therapy*, *28*(4), 283–287. https://doi.org/10.1016/0005-7967(90)90079-x

Jensen, M. P., Ehde, D. M., & Day, M. A. (2016). The Behavioral Activation and Inhibition
Systems: Implications for Understanding and Treating Chronic Pain. *The journal of
pain*, *17*(5), 529.e1–529.e18. https://doi.org/10.1016/j.jpain.2016.02.001.

Jensen, M. P., Gianas, A., Sherlin, L. H., & Howe, J. D. (2015). Pain catastrophizing and EEG-
alpha asymmetry. *The Clinical journal of pain*, *31*(10), 852-858.

Jensen, M. P., Tan, G., & Chua, S. M. (2015). Pain intensity, headache frequency, and the

behavioral activation and inhibition systems. *The Clinical journal of pain*, *31*(12), 1068-

1074.

Jensen, M. P., Ward, L. C., Thorn, B. E., Ehde, D. M., & Day, M. A. (2017). Measuring the

cognitions, emotions, and motivation associated with avoidance behaviors in the context of

pain. *The Clinical journal of pain*, *33*(4), 325-334.

Jessar, R. A., & Hollander, J. L. (1955). Types of arthritis and their medical treatment. *The

American Journal of Nursing*, 426-429.

Kachur S. (2008). Understanding and Treating Fear of Pain. *Physiotherapy Canada*, *60(2),* 196–

197. https://doi.org/10.3138.

Kadimpati, S., Zale, E. L., Hooten, M. W., Ditre, J. W., & Warner, D. O. (2015). Associations

between neuroticism and depression in relation to catastrophizing and pain-related anxiety

in chronic pain patients. *PLoS One*, *10*(4), e0126351.

Karadag, E., Ozlem, U. G. U. R., Hatice, M. E. R. T., & Erunal, M. (2019). The relationship

between psychological resilience and social support levels in hemodialysis

patients. *Journal of Basic and Clinical Health Sciences*, *3*(1), 9-15.

Kashikar-Zuck, S., Parkins, I. S., Graham, T. B., Lynch, A. M., Passo, M., Johnston, M., Schikler,

K. N., Hashkes, P. J., Banez, G., & Richards, M. M. (2008). Anxiety, mood, and behavioral

disorders among pediatric patients with juvenile fibromyalgia syndrome. *The Clinical

journal of pain*, *24*(7), 620–626. https://doi.org/10.1097/AJP.0b013e31816d7d23

Keefe FJ, Lefebvre JC, Egert JR, Affleck G, Sullivan MJ, Caldwell DS.(2000). The relationship of

gender to pain, pain behavior, and disability in osteoarthritis patients: the role of

catastrophizing. *Pain*. 2000, 87 (3): 325-334. 10.1016/S0304-3959(00)00296-7.

Keefe, F. J., Brown, G. K., Wallston, K. A., & Caldwell, D. S. (1989). Coping with rheumatoid arthritis pain: catastrophizing as a maladaptive strategy. *Pain*, *37*(1), 51–56. https://doi.org/10.1016/0304-3959(89)90152-8.

Keefe, F. J., Lipkus, I., Lefebvre, J. C., Hurwitz, H., Clipp, E., Smith, J., & Porter, L. (2003). The social context of gastrointestinal cancer pain: a preliminary study examining the relation of patient pain catastrophizing to patient perceptions of social support and caregiver stress and negative responses. *PAIN®*, *103*(1-2), 151-156.

Keefe, F. J., Smith, S. J., Buffington, A. L., Gibson, J., Studts, J. L., & Caldwell, D. S. (2002). Recent advances and future directions in the biopsychosocial assessment and treatment of arthritis. *Journal of consulting and clinical psychology*, *70*(3), 640–655. https://doi.org/10.1037//0022-006x.70.3.640.

Kia-Keating, M., Grossman, F. K., & Sorsoli, L. (2006). A gale force wind: Meaning making by male survivors of childhood sexual abuse. *American journal of orthopsychiatry*, *76*(4), 434-443.

Kim, H. S., Sherman, D. K., & Taylor, S. E. (2008). Culture and social support. American Psychologist, 63(6), 518–526. https://doi.org/10.1037/0003-066X

Kimura, N., Aso, Y., Yabuuchi, K., Ishibashi, M., Hori, D., Sasaki, Y., Nakamichi, A., Uesugi, S., Fujioka, H., Iwao, S., Jikumaru, M., Katayama, T., Sumi, K., Eguchi, A., Nonaka, S., Kakumu, M., & Matsubara, E. (2019). Modifiable Lifestyle Factors and Cognitive Function in Older People: A Cross-Sectional Observational Study. *Frontiers in neurology*, *10*, 401. https://doi.org/10.3389/fneur.2019.00401

Kind, S., & Otis, J. D. (2019). The interaction between chronic pain and PTSD. *Current pain and headache reports*, *23*(12), 1-7.

King, S, Chambers, Christine T. Huguet, Anna. B, MacNevin, Rebecca C., McGrath, Patrick J. Parker, Louise. B., MacDonald, Amanda J.(2011).Pain: 152(12), 2729-2738 doi: 10.1016/j.pain.2011.07.016.

Keskindag, B., Karaaziz, M., & CİRHİNLİOĞLU, F. G. (2020). Dispositional pain catastrophising in non-clinical sample: The role of depression, perceived stress and social support. *Current Psychology*, 1-9.

Khorshidi, H., Lavaee, F., Ghapanchi, J., Golkari, A., & Kholousi, S. (2017). The relation of preoperative stress and anxiety on patients' satisfaction after implant placement. *Dental Research Journal*, *14*(5), 351.

Klohnen E. C. (1996). Conceptual analysis and measurement of the construct of ego-resiliency. *Journal of personality and social psychology*, *70*(5), 1067–1079. https://doi.org/10.1037//0022-3514.70.5.1067

Knapik, A., Saulicz, E., & Gnat, R. (2011). Kinesiophobia - introducing a new diagnostic tool. *Journal of human kinetics*, *28*, 25–31. https://doi.org/10.2478/v10078-011-0019-8.

Kori SH, Miller RP, Todd DD (1990) Kinesiophobia: a new view of chronic pain behavior. Pain Manage Jan / Feb:35–43 Google Scholar

Kostova, Z., Caiata-Zufferey, M., & Schulz, P. J. (2015). Can social support work virtually? Evaluation of rheumatoid arthritis patients' experiences with an interactive online tool. *Pain Research and Management*, *20*(4), 199-209.

Kozaklı, H. (2006). The Relation between social support and loneliness as perceived by the undergraduates who accommodate at the dormitories and their families. *Unpublished Master Thesis, Mersin University Social Sciences Institute, Mersin*.

Konijnenberg, A. Y., de Graeff-Meeder, E. R., Van Der Hoeven, J., Kimpen, J. L., Buitelaar, J. K., Uiterwaal, C. S., & Pain of Unknown Origin in Children Study Group. (2006). Psychiatric

morbidity in children with medically unexplained chronic pain: diagnosis from the pediatrician's perspective. *Pediatrics*, *117*(3), 889-897.

Krokavcova, M., van Dijk, J. P., Nagyova, I., Rosenberger, J., Gavelova, M., Middel, B., Gdovinova, Z., & Groothoff, J. W. (2008). Social support as a predictor of perceived health status in patients with multiple sclerosis. *Patient education and counseling*, *73*(1), 159–165. https://doi.org/10.1016/j.pec.2008.03.019.

Lagnocco A. (2014). Ultrasound in osteoarthritis. *Clinical and experimental rheumatology*, *32*(1 Suppl 80), S48–S52.

Lakey, B. (2010). Enacted support's links to negative affect and perceived support are more consistent with theory when social influences are isolated from trait influences. *Personality and Social Psychology Bulletin*, *36*(1), 132-142.

Lanza, A. F., & Revenson, T. A. (1993). Social support interventions for rheumatoid arthritis patients: the cart before the horse?. *Health Education Quarterly*, *20*(1), 97-117.

Larsson, B., Gerdle, B., Bernfort, L., Levin, L. Å., & Dragioti, E. (2017). Distinctive subgroups derived by cluster analysis based on pain and psychological symptoms in Swedish older adults with chronic pain–a population study (PainS65+). *BMC geriatrics*, *17*(1), 1-11.

Lazarus RS, Folkman S: Stress, appraisal and coping. 1984, New York: Springer.

Lazarus, R. S. (1991). Specificity and stress research. In Monet, A., Lazarus, R. S. (Eds.), Stress and coping: An anthology. (3rd ed., pp. 36–47). New York, NY: Columbia University Press.

Lee, D. (2017). Effects of resilience on quality of life in patients with bipolar disorder. *Journal of affective disorders*, *207*, 434–441. https://doi.org/10.1016/j.jad.2016.08.075

Leeuw, M., Goossens, M. E., Linton, S. J., Crombez, G., Boersma, K., & Vlaeyen, J. W. (2007). The fear-avoidance model of musculoskeletal pain: current state of scientific evidence. *Journal of behavioral medicine*, *30*(1), 77-94.

Leeuw, M., Goossens, M., van Breukelen, G., de Jong, J. R., Heuts, P., Smeets, R., Köke, A., & Vlaeyen, J. (2008). Exposure in vivo versus operant graded activity in chronic low back pain patients: results of a randomized controlled trial. *Pain*, *138*(1), 192–207. https://doi.org/10.1016/j.pain.2007.12.009

Leigh S. Goggin, Mathew T. Martin-Iverson, Paula R. Nathan(2011). Affective Modulation of the Startle Reflex Is an Ineffective Methodology to Examine Depression-Linked Interpretative Biases. **Psychology**, *2(5)* 486-491. doi: 10.4236/psych.2011.25075.

Lethem, J., Slade, P. D., Troup, J. D. G., & Bentley, G. (1983). Outline of a fear-avoidance model of exaggerated pain perception—I. *Behaviour research and therapy*, *21*(4), 401-408.

Leventhal, H., Meyer, D. (1980). The Common Sense Representation of Illness Danger. In: Rachman, S., Ed., Contributions to Medical Psychology, Pergamon Press, New York, 17-30.

Lim, J. W., Shon, E. J., Paek, M., & Daly, B. (2014). The dyadic effects of coping and resilience on psychological distress for cancer survivor couples. *Supportive Care in Cancer*, *22*(12), 3209-3217.

Linton SJ.(2000). A review of psychological risk factors in back and neck pain. *Spine. 25(9),* 1148-1156. 10.1097/00007632-200005010-0.

Liu, L., Xu, X., Xu, N., & Wang, L. (2017). Disease activity, resilience and health-related quality of life in Chinese patients with rheumatoid arthritis: a multi-center, cross-sectional

study. *Health and quality of life outcomes*, *15*(1), 149. https://doi.org/10.1186/s12955-017-0725-6

López-Martínez, A. E., Esteve-Zarazaga, R., & Ramírez-Maestre, C. (2008). Perceived social support and coping responses are independent variables explaining pain adjustment among chronic pain patients. *The journal of pain*, *9*(4), 373–379. https://doi.org/10.1016/j.jpain.2007.12.002

Losoi, H., & Wäljas, M. (2015). Resilience is associated with fatigue after mild traumatic brain injury. *The Journal of head trauma rehabilitation*, *30*(3), E24–E32. https://doi.org/10.1097/HTR.0000000000000055

Luo, D., Eicher, M., & White, K. (2020). Individual resilience in adult cancer care: A concept analysis. *International journal of nursing studies*, *102*, 103467. https://doi.org/10.1016/j.ijnurstu.2019.103467

Małdyk, P. (2008). Reumatoidalne zapalenie stawów. *Ortopedia i Traumatologia*, 510-517.

Malec, E., & Lagerlöf, B. (1977). Malignant melanoma of the skin in children registered in the Swedish cancer registry during 1959–1971. *Scandinavian Journal of Plastic and Reconstructive Surgery*, *11*(2), 125-129.

Mallen, C. D., Peat, G., Thomas, E., Dunn, K. M., & Croft, P. R. (2007). Prognostic factors for musculoskeletal pain in primary care: a systematic review. *The British journal of general practice: the journal of the Royal College of General Practitioners*, *57*(541), 655–661.

Manne, S. L., & Zautra, A. J. (1989). Spouse criticism and support: their association with coping and psychological adjustment among women with rheumatoid arthritis. *Journal of personality and social psychology*, *56*(4), 608–617. https://doi.org/10.1037//0022-3514.56.4.608

Martinez-Calderon, J., Flores-Cortes, M., Clavero-Cano, S., Morales-Asencio, J. M., Jensen, M.

P., Rondon-Ramos, A., Diaz-Cerrillo, J. L., Ariza-Hurtado, G. R., & Luque-Suarez, A.

(2020). The Role of Positive Psychological Factors in the Association between Pain

Intensity and Pain Interference in Individuals with Chronic Musculoskeletal Pain: A Cross-

Sectional Study. *Journal of clinical medicine*, *9*(10), 3252.

https://doi.org/10.3390/jcm9103252

Matcham Malec, J. (1977). Coping with pain: a self-management approach. Journal Supplement

Abstract Service, American Psychological Association.

Matcham, F., Ali, S., Hotopf, M., & Chalder, T. (2015). Psychological correlates and predictors of

fatigue in Rheumatoid Arthritis: A systematic review. *Depression*, *17*(13), 3.

McCracken, L. M. (2013). Committed action: An application of the psychological flexibility

model to activity patterns in chronic pain. *The Journal of Pain*, *14*(8), 828-835.

McCracken, L. M., & Eccleston, C. (2005). A prospective study of acceptance of pain and patient

functioning with chronic pain. *Pain*, *118*(1-2), 164–169.

https://doi.org/10.1016/j.pain.2005.08.015

McCracken, L. M., Faber, S. D., & Janeck, A. S. (1998). Pain-related anxiety predicts non-specific

physical complaints in persons with chronic pain. *Behaviour research and therapy*, *36*(6),

621-630.

McInnes, I. B. (2013). Understanding the patient perspective-results of the Rheumatoid Arthritis:

Insights, Strategies & Expectations (RAISE) patient needs survey. *Clinical Experimental

Rheumatoogy*, *31*(3), 350-7.

McLean, C. P., & Hope, D. A. (2010). Subjective anxiety and behavioral avoidance: Gender, gender role, and perceived confirmability of self-report. *Journal of Anxiety Disorders*, *24*(5), 494-502.

Meadows, S. O. (2007). Evidence of parallel pathways: Gender similarity in the impact of social support on adolescent depression and delinquency. *Social Forces*, *85*(3), 1143-1167.Meewisse, E. J. C. M., (2003). Psychometric properties of the Tampa Scale for kinesiophobia and the fear-avoidance beliefs questionnaire in acute low back pain. *Manual therapy*, *8*(1), 29-36.

Merchán-Clavellino, A., Alameda-Bailén, J. R., Zayas García, A., & Guil, R. (2019). Mediating Effect of Trait Emotional Intelligence Between the Behavioral Activation System (BAS)/Behavioral Inhibition System (BIS) and Positive and Negative Affect. *Frontiers in psychology*, *10*, 424. https://doi.org/10.3389/fpsyg.2019.00424

Merskey H. (2009). Somatization: or another God that failed. *Pain*, *145*(1-2), 4–5. https://doi.org/10.1016/j.pain.2009.04.031

Michael, E. S., & Burns, J. W. (2004). Catastrophizing and pain sensitivity among chronic pain patients: moderating effects of sensory and affect focus. *Annals of behavioral medicine: a publication of the Society of Behavioral Medicine*, *27*(3), 185–194. https://doi.org/10.1207/s15324796abm2703_6

Merlijn, V. P., Hunfeld, J. A., van der Wouden, J. C., Hazebroek-Kampschreur, A. A., Passchier, J., & Koes, B. W. (2006). Factors related to the quality of life in adolescents with chronic pain. *The Clinical journal of pain*, *22*(3), 306-315.

Moberly, N. J., & Watkins, E. R. (2008). Ruminative self-focus and negative affect: an experience sampling study. *Journal of abnormal psychology*, *117*(2), 314.

Mojs, E., Ziarko, M., Kaczmarek, Ł., & Samborski, W. (2011). Anxiety level and its determinants in rheumatoid arthritis patients. *Chirurgia narzadow ruchu i ortopedia polska*, *76*(4), 219-224.

Moore, R. C. (2015). Complex interplay between health and successful aging: role of perceived stress, resilience, and social support. *The American Journal of Geriatric Psychiatry*, *23*(6), 622-632.

Morgan, C. (2015). The influence of behavioural and psychological factors on medication adherence over time in rheumatoid arthritis patients: a study in the biologic's era. *Rheumatology (Oxford, England)*, *54*(10), 1780–1791. https://doi.org/10.1093/rheumatology/kev105

Morse, J. M., Kent-Marvick, J., Barry, L. A., Harvey, J., Okang, E. N., Rudd, E. A., Wang, C. Y., & Williams, M. R. (2021). Developing the Resilience Framework for Nursing and Healthcare. *Global qualitative nursing research*, *8*, 23333936211005475. https://doi.org/10.1177/23333936211005475

Mosavi Jarrahi, A., Antony Moore, M., Huang, X., & Roder, D. (2016). Asia Pacific Journal of Cancer Prevention MEDLINE/PubMed Listing and Solution to the PRESERVATION Issue. *Asian Pacific journal of cancer prevention: APJCP*, *17*(10), 4549–4551. https://doi.org/10.22034/apjcp.2016.17.10.4549

Muris, P., & Field, A. P. (2008). Distorted cognition and pathological anxiety in children and adolescents. Cognition and emotion, 22(3), 395-421.

Muris, P., Meesters, C., Van den Hout, A., Wessels, S., Franken, I., & Rassin, E. (2007). Personality and temperament correlates of pain catastrophizing in young adolescents. *Child Psychiatry and Human Development*, *38*(3), 171-181.

Musitu, G., & Cava, M. J. (2003). El rol del apoyo social en el ajuste de los adolescentes. *Psychosocial intervention*, *12*(2), 179-192.

Myasoedova, E., Davis, J., Matteson, E. L., & Crowson, C. S. (2020). Is the epidemiology of rheumatoid arthritis changing? Results from a population-based incidence study, 1985-2014. *Annals of the rheumatic diseases*, *79*(4), 440–444. https://doi.org/10.1136/annrheumdis-2019-216694

Narayanan, S. S., Onn, W., Cheang, A. (2016). The influence of perceived social support and self-efficacy on resilience among first year Malaysian students. Kajian Malaysia: *Journal of Malaysian Studies, 34(2),* 1–23.

National Collaborating Centre for Chronic Conditions (UK). (2001`8). *Osteoarthritis: National Clinical Guideline for Care and Management in Adults*. Royal College of Physicians (UK)

National Collaborating Centre for Chronic Conditions (UK). (2009). *Rheumatoid Arthritis: National Clinical Guideline for Management and Treatment in Adults*. Royal College of Physicians (UK).

Newton-John, T. R. (2014). The role of resilience in adjustment and coping with chronic pain. *Rehabilitation psychology*, *59*(3), 360.

North C. S. (2015). The Classification of Hysteria and Related Disorders: Historical and Phenomenological Considerations. *Behavioral sciences (Basel, Switzerland)*, *5*(4), 496–517. https://doi.org/10.3390/bs5040496.

Norton, P. J., & Asmundson, G. J. (2003). Amending the fear-avoidance model of chronci pain: What is the role of physiological arousal?. *Behavior therapy*, *34*(1), 17-30.

Odell, S. (2013). Pediatric pain management: the multidisciplinary approach. *Journal of pain research*, *6*, 785.

Ojala, T., Häkkinen, A., Karppinen, J., Sipilä, K., Suutama, T., & Piirainen, A. (2015). Chronic

    pain affects the whole person–a phenomenological study. *Disability and*

    rehabilitation, *37*(4), 363-371.

O'Malley, P. G., & Kroenke, K. (1998). Clinical predictors of mental disorders among medical

    outpatients: validation of the "S4" model. *Psychosomatics*, *39*(5), 431-436.

Osterberg, L. (2005). Adherence to medication. *New England journal of medicine*, *353*(5), 487-

    497.

Ozbay, F., Fitterling, H., Charney, D., & Southwick, S. (2008). Social support and resilience to

    stress across the life span: a neurobiologic framework. *Current psychiatry reports*, *10*(4),

    304–310. https://doi.org/10.1007/s11920-008-0049-7

Park, C. L. (2014). Resilience interventions with a focus on meaning and values.

Palermo, T. M., Fonareva, I., & Janosy, N. R. (2008). Sleep quality and efficiency in adolescents

    with chronic pain: Relationship with activity limitations and health-related quality of

    life. *Behavioral sleep medicine*, *6*(4), 234-250.

Palit, S., Fillingim, R. B., & Bartley, E. J. (2020). Pain resilience moderates the influence of

    negative pain beliefs on movement-evoked pain in older adults. *Journal of behavioral*

    medicine, *43*(5), 754-763.

Patrick, D. L. (2017). Clinician-reported outcome assessments of treatment benefit: report of the

    ISPOR clinical outcome assessment emerging good practices task force. *Value in*

    Health, *20*(1), 2-14.

Pedersen, L. H., Scheel-Krüger, J., & Blackburn-Munro, G. (2007). Amygdala GABA-A receptor

    involvement in mediating sensory-discriminative and affective-motivational pain responses

in a rat model of peripheral nerve injury. *Pain*, *127*(1-2), 17–26.

https://doi.org/10.1016/j.pain.2006.06.036.

Pedersen, S. S., Middel, B., & Larsen, M. L. (2002). The role of personality variables and social

support in distress and perceived health in patients following myocardial

infarction. *Journal of psychosomatic res   earch*, *53*(6), 1171–1175.

https://doi.org/10.1016/s0022-3999(02)00346-x

Pejičić, M., Ristić, M., & Anđelković, V. (2018). The mediating effect of cognitive emotion

regulation strategies in the relationship between perceived social support and resilience in

postwar youth. *Journal of Community Psychology*, *46*(4), 457-472.

Penninx, B. W., Van Tilburg, T., Kriegsman, D. M., Deeg, D. J., Boeke, A. J. P., & Van Eijk, J. T.

M. (1997). Effects of social support and personal coping resources on mortality in older

age: The Longitudinal Aging Study Amsterdam. *American journal of*

epidemiology, *146*(6), 510-519.

Perquin, C. W. (2000). Pain in children and adolescents: a common experience. *Pain*, *87*(1), 51–

58. https://doi.org/10.1016/S0304-3959(00)00269-4

Perrewé, P. L., & Carlson, D. S. (2002). Do men and women benefit from social support equally?

Results from a field examination within the work and family context. In D. L. Nelson & R.

J. Burke (Eds.), Gender, work stress, and health, 25(3), 101–114). American Psychological

Association. https://doi.org/10.1037/10467-007.

Pejičić, M., Ristić, M., & Anđelković, V. (2018). The mediating effect of cognitive emotion

regulation strategies in the relationship between perceived social support and resilience in

postwar youth. *Journal of Community Psychology*, *46*(4), 457-472.

Perrot, S. (2008). Active or passive pain coping strategies in hip and knee osteoarthritis? Results of a national survey of 4,719 patients in a primary care setting. *Arthritis Rheum. 59 (11)*, 1555-1562. 10.1002/art.24205.

Philips H. C. (1987). Avoidance behaviour and its role in sustaining chronic pain. *Behaviour research and therapy*, *25*(4), 273–279. https://doi.org/10.1016/0005-7967(87)90005-2.

Pincus, T., Burton, A. K., Vogel, S., & Field, A. P. (2002). A systematic review of psychological factors as predictors of chronicity/disability in prospective cohorts of low back pain. *Spine*, *27*(5), E109–E120. https://doi.org/10.1097/00007632-200203010-00017

Pradhan, E. K., Baumgarten, M., Langenberg, P., Handwerger, B., Gilpin, A. K., Magyari, T., Hochberg, M. C., & Berman, B. M. (2007). Effect of Mindfulness-Based Stress Reduction in rheumatoid arthritis patients. *Arthritis and rheumatism*, *57*(7), 1134–1142. https://doi.org/10.1002/art.23010

Prior KN, Bond MJ: The roles of self-efficacy and abnormal illness behaviour in osteoarthritis self-management. Psychol Health Med. 2004, 9 (2),177-193. 10.1080/13548500410001670708.

Pulvers, K., & Hood, A. (2013). The role of positive traits and pain catastrophizing in pain perception. *Current pain and headache reports*, *17*(5), 1-11.

Quaedflieg C.W.E.M., Smeets T. (2013) Stress Vulnerability Models. In: Gellman M.D., Turner J.R. (eds) Encyclopedia of Behavioral Medicine. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-1005-9_65Quiceno, J. M., & Vinaccia, S. (2011). Resiliencia: una perspectiva desde la enfermedad crónica en población adulta. *Pensamiento psicológico*, *9*(17), 69-82.

Quartana, P. J., Campbell, C. M., & Edwards, R. R. (2009). Pain catastrophizing: a critical

review. *Expert review of neurotherapeutics*, *9*(5), 745-758.

Quiceno, J. M. (2013). Resiliencia, percepción de enfermedad, creencia y afrontamiento espiritual

religioso y calidad de vida relacionada con la salud en pacientes con diagnóstico de artritis

reumatoide [Resilience, illness perception, beliefs and spiritual religious coping and health-

related quality of life in patients with rheumatoid arthritis diagnosis]. Psicología desde el

Caribe, 30(3), 591–619.

Rachman, S. (2000). Post-event processing in social anxiety. *Behaviour Research and*

Therapy, *38*(6), 611-617.

Ramjeet, J., Smith, J., & Adams, M. (2008). The relationship between coping and psychological

and physical adjustment in rheumatoid arthritis: a literature review. *Journal of clinical*

nursing, *17*(11c), 418–428. https://doi.org/10.1111/j.1365-2702.2008.02579.x

Rapp SR, Rejeski WJ, Miller ME: Physical function among older adults with knee pain: the role of

pain coping skills. Arthritis Care Res. 2000, 13 (5): 270-279. 10.1002/1529-

0131(200010)13:5<270: AID-ANR5>3.0.CO;2-

Raza, K., Stack, R., Kumar, K., Filer, A., Detert, J., Bastian, H., Burmester, G. R., Sidiropoulos,

P., Kteniadaki, E., Repa, A., Saxne, T., Turesson, C., Mann, H., Vencovsky, J., Catrina, A.,

Chatzidionysiou, A., Hensvold, A., Rantapää-Dahlqvist, S., Binder, A., Machold, K., …

Buckley, C. D. (2011). Delays in assessment of patients with rheumatoid arthritis:

variations across Europe. *Annals of the rheumatic diseases*, *70*(10), 1822–1825.

https://doi.org/10.1136/ard.2011.151902

Regan, C. O., Kearney, P. M., Savva, G. M., Cronin, H., & Kenny, R. A. (2013). Age and sex

differences in prevalence and clinical correlates of depression: first results from the Irish

Longitudinal Study on Ageing. *International journal of geriatric psychiatry*, *28*(12), 1280-1287.

Robb, S. L., Burns, D. S., Stegenga, K. A., Haut, P. R., Monahan, P. O., Meza, J., ... & Haase, J. E. (2014). Randomized clinical trial of therapeutic music video intervention for resilience outcomes in adolescents/young adults undergoing hematopoietic stem cell transplant: a report from the Children's Oncology Group. *Cancer*, *120*(6), 909-917.

Roberta R. Greene PhD, Colleen Galambos DSW & Youjung Lee DSW (2004) Resilience Theory, Journal of Human Behavior in the Social Environment, 8:4, 75-91, DOI: 10.1300/J137v08n04_05

Rodakowski, J., Skidmore, E. R., Rogers, J. C., & Schulz, R. (2012). Role of social support in predicting caregiver burden. *Archives of physical medicine and rehabilitation*, *93*(12), 2229–2236.

Radojevic, V., Nicassio, P. M., & Weisman, M. H. (1992). Behavioral intervention with and without family support for rheumatoid arthritis. *Behavior therapy*, *23*(1), 13-30.

Rogers, A. H., Manning, K., Garey, L., Smit, T., & Zvolensky, M. J. (2020). Sex differences in the relationship between anxiety sensitivity and opioid misuse among adults with chronic pain. *Addictive behaviors*, *102*, 106156.

Romero-Ortuno, R., O'Connell, M. D., Finucane, C., Soraghan, C., Fan, C. W., & Kenny, R. A. (2013). Insights into the clinical management of the syndrome of supine hypertension–orthostatic hypotension (SH-OH): the Irish Longitudinal Study on Ageing (TILDA). *BMC geriatrics*, *13*(1), 1-14.

Roohafza, H. R., Afshar, H., Keshteli, A. H., Mohammadi, N., Feizi, A., Taslimi, M., & Adibi, P. (2014). What's the role of perceived social support and coping styles in depression and

anxiety? *Journal of research in medical sciences : the official journal of Isfahan University of Medical Sciences*, *19*(10), 944–949.

Rosenstiel, A. K., & Keefe, F. J. (1983). The use of coping strategies in chronic low back pain patients: relationship to patient characteristics and current adjustment. *Pain*, *17*(1), 33-44.

Royal College of Physicians. (2009). National Collaborating Centre for Chronic Conditions. Rheumatoid arthritis: National clinical guideline for management and treatment in adults. London: Royal College of Physicians.

Ruscio, A. M., Borkovec, T. D., & Ruscio, J. (2001). A taxometric investigation of the latent structure of worry. *Journal of abnormal psychology*, *110*(3), 413.

Rutter M. (2012). Resilience as a dynamic concept. *Development and psychopathology*, *24*(2), 335–344. https://doi.org/10.1017/S0954579412000028

Rzeszutek, M., Oniszczenko, W., & Firląg-Burkacka, E. (2017). Social support, stress coping strategies, resilience and posttraumatic growth in a Polish sample of HIV-infected individuals: results of a 1 year longitudinal study. *Journal of behavioral medicine*, *40*(6), 942–954. https://doi.org/10.1007/s10865-017-9861-z

Saka, N., Gati, I., & Kelly, K. R. (2008). Emotional and Personality-Related Aspects of Career-Decision-Making Difficulties. *Journal of Career Assessment*, *16*(4), 403–424. https://doi.org/10.1177/1069072708318900

Sambu, L., & Mhongo, S. (2019). Age and gender in relation to resilience after the experience of trauma among internally displaced persons (IDPS) in Kiambaa Village, Eldoret East Sub-County, Kenya. *Journal of Psychology and Behavioral Science*, *7*(1), 31-40.

Sapolsky, R. M. (2007). *Why zebras don't get ulcers: The acclaimed guide to stress, stress-related diseases, and coping*. Holt paperbacks.

Sencan, H.(2005). Sosyal ve davranÕúsal ölçümlerde güvenilirlik ve geçerlilik. østanbul: Seçkin
YayÕncÕlÕk.

Scheper, M. C. (2013). Children with generalised joint hypermobility and musculoskeletal
complaints: state of the art on diagnostics, clinical characteristics, and treatment. *BioMed
research international*, *2013*.

Schiavon, C. C., Marchetti, E., Gurgel, L. G., Busnello, F. M., & Reppold, C. T. (2017). Optimism
and Hope in Chronic Disease: A Systematic Review. *Frontiers in psychology*, *7*, 2022.
https://doi.org/10.3389/fpsyg.2016.02022

Schure, M. B., Odden, M., & Goins, R. T. (2013). The association of resilience with mental and
physical health among older American Indians: The Native Elder Care Study. *American
Indian and Alaska native mental health research (Online)*, *20*(2), 27–41.
https://doi.org/10.5820/aian.2002.2013.27

Schütze, R. (2016). Re-thinking over-thinking pain: What can metacognition add to our
understanding of pain catastrophising? *Clinical Psychologist*, *20*(3), 147-153.

Schütze, R., Rees, C., Smith, A., Slater, H., & O'Sullivan, P. (2017). Metacognition, perseverative
thinking, and pain catastrophizing: a moderated-mediation analysis. *European Journal of
Pain*, *24*(1), 223-233.

Schwarzer, R., & Luszczynska, A. (2013). Stressful life events. *Science*, *17*(3), 181–186.

Scott, D. L. (2007). Early rheumatoid arthritis. *British medical bulletin*, *81*(1), 97-114.

Sęk, H., Kaczmarek, Ł. D., Ziarko, M., Pietrzykowska, E., & Lewicka, J. (2012). Sprężystość
psychiczna a dobrostan w chorobie przewlekłej–mediująca rola podmiotowego umocnienia
i radzenia sobie. In *Polskie Forum Psychologiczne* (Vol. 17, No. 2, pp. 327-343).

Severeijns, R., Vlaeyen, J. W., & van den Hout, M. A. (2004). Do we need a communal coping

    model of pain catastrophizing? An alternative explanation. *Pain*, *111*(3), 226-229.

Shanbehzadeh, S., Salavati, M., Tavahomi, M., Khatibi, A., Talebian, S., & Khademi-Kalantari, K.

    (2017). Reliability and validity of the pain anxiety symptom scale in Persian speaking

    chronic low back pain patients. *Spine*, *42*(21), E1238-E1244.

Shalaby, A. S., & Salem, G. M. (2018). Anxiety, depression, and quality of life in backache

    patients before and after spinal traction. *The Egyptian journal of neurology, psychiatry and*

    neurosurgery, *54*(1), 1-7.

Sharpe, L., Allard, S., & Sensky, T. (2008). Five-year followup of a cognitive–behavioral

    intervention for patients with recently-diagnosed rheumatoid arthritis: Effects on health

    care utilization. *Arthritis Care & Research*, *59*(3), 311-316.

Sharpe, L., Sensky, T., Timberlake, N., Ryan, B., & Allard, S. (2003). Long-term efficacy of a

    cognitive behavioural treatment from a randomized controlled trial for patients recently

    diagnosed with rheumatoid arthritis. *Rheumatology*, *42*(3), 435-441.

Sharpe, L., Sensky, T., Timberlake, N., Ryan, B., Brewin, C. R., & Allard, S. (2001). A blind,

    randomized, controlled trial of cognitive-behavioural intervention for patients with recent

    onset rheumatoid arthritis: preventing psychological and physical morbidity. *Pain*, *89*(2-3),

    275-283.

Shaw, Y., Bradley, M., Zhang, C., Dominique, A., Michaud, K., McDonald, D., & Simon, T. A.

    (2020). Development of Resilience Among Rheumatoid Arthritis Patients: A Qualitative

    Study. *Arthritis care & research*, *72*(9), 1257–1265. https://doi.org/10.1002/acr.24024.

Shumaker, S. A., & Brownell, A. (1984). Toward a theory of social support: Closing conceptual

    gaps. Journal of Social Issues, 40(4), 11–36. https://doi.org/10.1111/j.1540-

    4560.1984.tb01105.x

Silman, A. J., & Pearson, J. E. (2002). Epidemiology and genetics of rheumatoid arthritis. *Arthritis*

    research, *4 Suppl 3*(Suppl 3), S265–S272. https://doi.org/10.1186/ar578

Sim, J., & Adams, N. (2002). Systematic review of randomized controlled trials of

    nonpharmacological interventions for fibromyalgia. *The Clinical journal of pain*, *18*(5),

    324–336. https://doi.org/10.1097/00002508-200209000-00008

Simon, L. S. (2012). Relieving pain in America: A blueprint for transforming prevention, care,

    education, and research. *Journal of pain & palliative care pharmacotherapy*, *26*(2), 197-

    198.

Simon, T. A. (2017). Prevalence of Co-existing Autoimmune Disease in Rheumatoid Arthritis: A

    Cross-Sectional Study. *Advances in therapy*, *34*(11), 2481–2490.

    https://doi.org/10.1007/s12325-017-0627-3

Simons, L. E., & Kaczynski, K. J. (2012). The Fear Avoidance model of chronic pain: examination

    for pediatric application. *The journal of pain*, *13*(9), 827–835.

    https://doi.org/10.1016/j.jpain.2012.05.002

Sinclair, V. G., & Wallston, K. A. (2001). Predictors of improvement in a cognitive-behavioral

    intervention for women with rheumatoid arthritis. *Annals of Behavioral Medicine*, *23*(4),

    291-297. https://doi.org/10.1207/S15324796ABM2304_8

Sjolander, C., & Ahlstrom, G. (2012). The meaning and validation of social support networks for

    close family of persons with advanced cancer. *BMC nursing*, *11*, 17.

    https://doi.org/10.1186/1472-6955-11-17

Sjörs, A. (2011). An increased response to experimental muscle pain is related to psychological status in women with chronic non-traumatic neck-shoulder pain. *BMC musculoskeletal disorders*, *12*(1), 1-12.

Smith, B. W. (2002). The role of personality in exposure and reactivity to interpersonal stress in relation to arthritis disease activity and negative affect in women. Health Psychology, 21(1), 81–88. https://doi.org/10.1037/0278-6133.21.1.81

Smith, T. W., Ruiz, J. M., & Uchino, B. N. (2004). Mental activation of supportive ties, hostility, and cardiovascular reactivity to laboratory stress in young men and women. *Health Psychology*, *23*(5), 476.

Somers TJ, Keefe FJ, Pells JJ, Dixon KE, Waters S, Riordan PA: Pain catastrophizing and pain-related fear in osteoarthritis patients: relationship to pain and disability. J Pain Symtom Manage. 2009, 37 (5): 863-872. 10.1016/j.jpainsymman.2008.05.009

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European journal of psychotraumatology*, *5*, 10.3402/ejpt.v5.25338. https://doi.org/10.3402/ejpt.v5.25338

Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: implications for prevention and treatment. *Annual review of clinical psychology*, *1*, 255–291. https://doi.org/10.1146/annurev.clinpsy.1.102803.143948

Spanos, N. P., Radtke-Bodorik, H. L., Ferguson, J. D., & Jones, B. (1979). The effects of hypnotic susceptibility, suggestions for analgesia, and the utilization of cognitive strategies on the reduction of pain. *Journal of abnormal psychology*, *88*(3), 282.

Steptoe, A., Owen, N., Kunz-Ebrecht, S. R., & Brydon, L. (2004). Loneliness and neuroendocrine, cardiovascular, and inflammatory stress responses in middle-aged men and women. *Psychoneuroendocrinology*, *29*(5), 593-611.

Sturgeon, J. A., & Zautra, A. J. (2010). Resilience: a new paradigm for adaptation to chronic pain. *Current pain and headache reports*, *14*(2), 105–112. https://doi.org/10.1007/s11916-010-0095-9

Sullivan, M. J. L., Martel, M. O., Tripp, D., Savard, A., & Crombez, G. (2006). The relation between catastrophizing and the communication of pain experience. *Pain*, *122*(3), 282-288.

Sullivan, M. J., & Neish, N. R. (1998). Catastrophizing, anxiety and pain during dental hygiene treatment. Community dentistry and oral epidemiology, 26(5), 344-349.

Sullivan, M. J., Thorn, B., Haythornthwaite, J. A., Keefe, F., Martin, M., Bradley, L. A., & Lefebvre, J. C. (2001). Theoretical perspectives on the relation between catastrophizing and pain. *The Clinical journal of pain*, *17*(1), 52–64. https://doi.org/10.1097/00002508-200103000-00008

Sullivan, M. J., Thorn, B., Haythornthwaite, J. A., Keefe, F., Martin, M., Bradley, L. A., & Lefebvre, J. C. (2001). Theoretical perspectives on the relation between catastrophizing and pain. *The Clinical journal of pain*, *17*(1), 52-64.

Sun, J., Yan, W., Zhang, X. N., Lin, X., Li, H., Gong, Y. M., & Lu, L. (2020). Polygenic evidence and overlapped brain functional connectivities for the association between chronic pain and sleep disturbance. *Translational psychiatry*, *10*(1), 1-10.

Taylor, S. E., Welch, W. T., Kim, H. S., & Sherman, D. K. (2007). Cultural differences in the impact of social support on psychological and biological stress responses. *Psychological science*, *18*(9), 831-837.

Tezbaşaran, A. (1997). VALIDITY ISSUES OF A UKERT TYPE SCALE (A CASE STUDY).

Thieme, K., Turk, D. C., & Flor, H. (2007). Responder criteria for operant and cognitive-

behavioral treatment of fibromyalgia syndrome. *Arthritis and rheumatism*, *57*(5), 830–836.

https://doi.org/10.1002/art.22778

Thoits, P. A. (1986). Social support as coping assistance. Journal of Consulting and Clinical

Psychology, 54(4), 416–423. https://doi.org/10.1037/0022-006X.54.4.416

Torma, L. M., Houck, G. M., Wagnild, G. M., Messecar, D., & Jones, K. D. (2013). Growing old

with fibromyalgia: factors that predict physical function. *Nursing research*, *62*(1), 16–24.

https://doi.org/10.1097/NNR.0b013e318273b853

Tran, S. T. (2015). Distinct influences of anxiety and pain catastrophizing on functional outcomes

in children and adolescents with chronic pain. *Journal of pediatric psychology*, *40*(8), 744-

755.

Trost, Z., France, C. R., & Thomas, J. S. (2008). Exposure to movement in chronic back pain:

evidence of successful generalization across a reaching task. *Pain*, *137*(1), 26–33.

https://doi.org/10.1016/j.pain.2007.08.005

Turk D. C. (1990). Customizing treatment for chronic pain patients: who, what, and why. *The

Clinical journal of pain*, *6*(4), 255–270. https://doi.org/10.1097/00002508-199012000-

00002

Turk, D. C., & Okifuji, A. (2002). Psychological factors in chronic pain: evolution and

revolution. *Journal of consulting and clinical psychology*, *70*(3), 678.

Turner, J. A., Jensen, M. P., & Romano, J. M. (2000). Do beliefs, coping, and catastrophizing

independently predict functioning in patients with chronic pain? *Pain*, *85*(1-2), 115–125.

https://doi.org/10.1016/s0304-3959(99)00259-6

Turner, J. A., Mancl, L., & Aaron, L. A. (2004). Pain-related catastrophizing: a daily process study. *Pain*, *110*(1-2), 103-111.

UNICEF. (2014). Analysis of the situation of children and adolescence in Colombia 2010-2014. Retrieved from http://unicef.org.co/sitan/assets/ pdf/sitan.pdf.

van den Bemt, B. J., Zwikker, H. E., & van den Ende, C. H. (2012). Medication adherence in patients with rheumatoid arthritis: a critical appraisal of the existing literature. *Expert review of clinical immunology*, *8*(4), 337–351. https://doi.org/10.1586/eci.12.23

Van Damme, S., Goubert, L., & Crombez, G. (2004). The role of neuroticism, pain catastrophizing and pain-related fear in vigilance to pain: a structural equations approach. *Pain*, *107*(3), 234-241.

van Koulil, S., Kraaimaat, F. W., van Lankveld, W., van Helmond, T., Vedder, A., van Hoorn, H., Cats, H., van Riel, P. L., & Evers, A. W. (2008). Screening for pain-persistence and pain-avoidance patterns in fibromyalgia. *International journal of behavioral medicine*, *15*(3), 211–220. https://doi.org/10.1080/10705500802222964

Vasey, M. W., & Borkovec, T. D. (1992). A catastrophizing assessment of worrisome thoughts. *Cognitive Therapy and Research*, *16*(5), 505-520.

Veehof, M. M., Oskam, M. J., Schreurs, K. M., & Bohlmeijer, E. T. (2011). Acceptance-based interventions for the treatment of chronic pain: a systematic review and meta-analysis. *Pain®*, *152*(3), 533-542

Veehof, M. M. (2016). Acceptance-and mindfulness-based interventions for the treatment of chronic pain: a meta-analytic review. *Cognitive behaviour therapy*, *45*(1), 5-31.

Veenhof, C., Köke, A. J., Dekker, J., Oostendorp, R. A., Bijlsma, J. W., Van Tulder, M. W., & Van Den Ende, C. H. (2006). Effectiveness of behavioral graded activity in patients with

osteoarthritis of the hip and/or knee: A randomized clinical trial. *Arthritis Care & Research: Official Journal of the American College of Rheumatology*, *55*(6), 925-934.

Veselska, Z., Madarasova Geckova, A., Gajdosova, B., Orosova, O., van Dijk, J. P., & Reijneveld, S. A. (2010). Socio-economic differences in self-esteem of adolescents influenced by personality, mental health and social support. *European journal of public health*, *20*(6), 647-652.

Vesta. C., Jiranek, W. A., Green, C. L., Allen, K. D., George, S. Z., & Bettger, J. P. (2021). Resilience and pain catastrophizing among patients with total knee arthroplasty: a cohort study to examine psychological constructs as predictors of post-operative outcomes. *Health and quality of life outcomes*, *19*(1), 1-11.

Vlaeyen, J., & Crombez, G. (2020). Behavioral Conceptualization and Treatment of Chronic Pain. *Annual review of clinical psychology*, *16*, 187–212. https://doi.org/10.1146/annurev-clinpsy-050718-095744

Vlaeyen, J., & Linton, S. J. (2000). Fear-avoidance and its consequences in chronic musculoskeletal pain: a state of the art. *Pain*, *85*(3), 317–332. https://doi.org/10.1016/S0304-3959(99)00242-0

Vlaeyen, J., Crombez, G., & Linton, S. J. (2016). The fear-avoidance model of pain. *Pain*, *157*(8), 1588–1589. https://doi.org/10.1097/j.pain.0000000000000574

Vlaeyen, J., Kole-Snijders, A., Boeren, R., & van Eek, H. (1995). Fear of movement/(re)injury in chronic low back pain and its relation to behavioral performance. *Pain*, *62*(3), 363–372. https://doi.org/10.1016/0304-3959(94)00279-N

Waddell, G., Newton, M., Henderson, I., Somerville, D., & Main, C. J. (1993). A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. *Pain*, *52*(2), 157-168.

Wade, D. T., Wood, V. A., Heller, A., Maggs, J., & Langton Hewer, R. (1987). Walking after stroke. Measurement and recovery over the first 3 months. *Scandinavian journal of rehabilitation medicine*, *19*(1), 25–30.

Waxman, S. E., Tripp, D. A., & Flamenbaum, R. (2008). The mediating role of depression and negative partner responses in chronic low back pain and relationship satisfaction. *The Journal of Pain*, *9*(5), 434-442.

Wendebourg, M. J., Heesen, C., Finlayson, M., Meyer, B., Pöttgen, J., & Köpke, S. (2017). Patient education for people with multiple sclerosis-associated fatigue: A systematic review. *PloS one*, *12*(3), e0173025. https://doi.org/10.1371/journal.pone.0173025.

Wideman, T. H., & Sullivan, M. J. (2011). Differential predictors of the long-term levels of pain intensity, work disability, healthcare use, and medication use in a sample of workers' compensation claimants. *PAIN®*, *152*(2), 376-383. https://doi.org/10.1016/j.pain.2010.10.044

Wild, J., & Ehlers, A. (2010). Self-study assisted cognitive therapy for PTSD: A case study. *European Journal of Psychotraumatology*, *1*(1), 5599.

Williams, A. (2008). Interventions to improve medication adherence in people with multiple chronic conditions: a systematic review. *Journal of advanced nursing*, *63*(2), 132-143.

Wills, T. A., & Ainette, M. C. (2012). Social networks and social support. In A. Baum, T. A. Revenson, & J. Singer (Eds.), Handbook of health psychology (pp. 465–492). Psychology Press.

Wilson, A. G. (2006). Independent associations of anti-cyclic citrullinated peptide antibodies and

    rheumatoid factor with radiographic severity of rheumatoid arthritis. *Arthritis research &*

    therapy, *8*(4), 1-5.

Woby, S. R. (2004). Are changes in fear-avoidance beliefs, catastrophizing, and appraisals of

    control, predictive of changes in chronic low back pain and disability?. *European journal*

    of pain, *8*(3), 201-210.

Wolfe, F. R. E. D. E. R. I. C. K., & Skevington, S. M. (2000). Measuring the epidemiology of

    distress: the rheumatology distress index. *The Journal of rheumatology*, *27*(8).

Woo, A. K. (2010). Depression and anxiety in pain. *Reviews in pain*, *4*(1), 8-12.

Wu, C. H., & Yang, C. T. (2012). Attachment and exploration in adulthood: The mediating effect

    of social support. *International Journal of Psychology*, *47*(5), 346-354.

Yadav, P., Duckworth, K., & Grewal, P. S. (2012). Habitat structure influences below ground

    biocontrol services: A comparison between urban gardens and vacant lots. *Landscape and*

    Urban Planning, *104*(2), 238-244.

Zale, E. L., LaRowe, L. R., Boissoneault, J., Maisto, S. A., & Ditre, J. W. (2019). Gender

    differences in associations between pain-related anxiety and alcohol use among adults with

    chronic pain. *The American journal of drug and alcohol abuse*, *45*(5), 479-487.

Zarzaur, B. L., Bell, T. M., & Zanskas, S. A. (2017). Resiliency and quality of life trajectories after

    injury. *The journal of trauma and acute care surgery*, *82*(5), 939–945.

    https://doi.org/10.1097/TA.0000000000001415

Zautra, A. J., Affleck, G. G., Tennen, H., Reich, J. W., & Davis, M. C. (2005). Dynamic

    approaches to emotions and stress in everyday life: Bolger and Zuckerman reloaded with

positive as well as negative affects. *Journal of personality*, *73*(6), 1511–1538. https://doi.org/10.1111/j.0022-3506.2005.00357.x

Zautra, A. J., Davis, M. C., Reich, J. W., Nicassario, P., Tennen, H., Finan, P., & Irwin, M. R. (2008). Comparison of cognitive behavioral and mindfulness meditation interventions on adaptation to rheumatoid arthritis for patients with and without history of recurrent depression. *Journal of consulting and clinical psychology*, *76*(3), 408.

Zhang Y, Zhang H, Guo JH, Zhu J, Huang F, (2012). The diagnostic value of musculoskeletal ultrasound in gouty arthritis. *Zhonghua Nei Ke Za Zhi 51(4):*304-7.

Ziadni MS, Sturgeon JA, Darnall BD (2018). The relationship between negative metacognitive thoughts, pain catastrophizing and adjustment to chronic pain. *Pain.22(4),*756-762. doi: 10.1002/ejp.1160. Epub 2017 Dec 7. PMID: 29214679; PMCID: PMC5854507.

Ziarko, M., Mojs, E., Piasecki, B., & Samborski, W. (2014). The mediating role of dysfunctional coping in the relationship between beliefs about the disease and the level of depression in patients with rheumatoid arthritis. *TheScientificWorldJournal*, *2014*, 585063. https://doi.org/10.1155/2014/585063

Ziarko, M., Siemiątkowska, K., Sieński, M., Samborski, W., Samborska, J., & Mojs, E. (2019). Mental Health and Rheumatoid Arthritis: Toward Understanding the Emotional Status of People with Chronic Disease. *BioMed research international*, *2019*, 1473925. https://doi.org/10.1155/2019/1473925.

Ziegler, S., Huscher, D., Karberg, K., Krause, A., Wassenberg, S., & Zink, A. (2010). Trends in treatment and outcomes of rheumatoid arthritis in Germany 1997-2007: results from the National Database of the German Collaborative Arthritis Centres. *Annals of the rheumatic diseases*, *69*(10), 1803–1808. https://doi.org/10.1136/ard.2009.122101

Zwikker, H. E. (2010). Medication adherence in patients with rheumatoid arthritis: a critical

    appraisal of the existing literature. *Expert review of clinical immunology*, *8*(4), 337-351.

Zyrianova, Y., Kelly, B. D., Gallagher, C., McCarthy, C., Molloy, M. G., Sheehan, J., & Dinan, T.

    G. (2006). Depression and anxiety in rheumatoid arthritis: the role of perceived social

    support. *Irish journal of medical science*, *175*(2), 32-36.

Appendices

Inform Consent

اجازت نامہ

میری موجودہ تحقیق قومی ادارہ تحقیق و نفسیات عمل نیشنل یونیورسٹی آف ماڈرن لینگویج اسلام اباد کے تحقیقی پروگرام کا حصہ ہے۔ میں اس ادارے میں ایم۔ فل کی طلبہ ہوں۔ میں آرتھرائٹس کے مریضوں کے نفسیاتی مسائل پر تحقیق کرنا چاہ رہی ہوں۔ جس کے لئے مجھے آپ کا تعاون درکار ہے۔ آپ کو چار سوالنامے دیئے جائیں گے اور آپ کی رائے پوچھی جائے گی۔ ہر سوالنامے کو پر کرنے کے لئے الگ سے ہدایات دی گئی ہیں۔ آپ سے درخواست ہے کہ ہر سوالنامے کو ہدایت کے مطابق پُر کریں۔ یاد رہے کوئی جواب صحیح یا غلط نہیں ہے۔ صرف آپ کی رائے کا اظہار ہے۔ آپ کو یہ یقین دلایا جاتا ہے کہ آپ کی رائے کو صرف تحقیقی مقاصد کے لئے استعمال کیا جائے گا۔

آپ سے درخواست ہے کہ تمام سوالات کا جواب دیں۔ اگر آپ کسی قسم کی مشکل محسوس کریں تو مجھ سے وضاحت طلب کر سکتے ہیں۔ اور اگر جواب نہ دینا چاہیں اور چھوڑ کے جانا چاہیں تو مکمل آزادی ہے۔

شکریہ

Participants' Signature

ذاتی کوائف:۔

عمر:

جنس: مرد ⬭   عورت ⬭

تعلیمی قابلیت:

ازدواجی حیثیت: شادی شدہ ⬭   غیر شادی شدہ ⬭

بچے: ہاں ☐   نہیں ☐

کتنے ------------------------------

پیشہ:------------------------------

بیماری کی مدت:۔-------------------

علاج کی مدت:۔--------------------

مذکورہ بالا کے علاوہ:۔------------------------------

Pain Catastrophising Scale

0-۔ بالکل بھی نہیں

1-کم حد تک متفق

2-کچھ حد تک متفق

3-کافی حد تک متفق

4-بالکل متفق۔

1----------------میں ہر وقت اس برے میں پریشان رہتا/رہتی ہوں کہ کیا یہ کبھی ختم ہو گا۔

2----------------مجھے لگتا ہے کہ میں آگے نہیں پڑھ سکتا۔

3----------------یہ بہت خوفناک ہے اور مجھے لگتا ہے کہ یہ کبھی بہتر نہیں ہو گا۔

4----------------یہ بہت بھیانک ہے اور مجھے محسوس ہوتا ہے کہ یہ مجھ پر حاوی ہو گیا ہے۔

5----------------مجھے محسوس ہوتا ہے کہ میں مزید اس کا مقابلہ نہیں کر سکتا۔

6----------------میں خوف زدہ رہتاں کہ یہ تکلیف شدت اختیار کر جائے گی۔

7----------------میں دوسرے تکلیف دہ واقعات کے متعلق بھی سوچتا رہتا ہوں۔

8----------------میں بے تابی سے چاہتا ہوں کہ یہ درد ختم ہو جائے۔

9----------------مجھے نہیں لگتا کہ میں اسے اپنے ذہن سے نکال پاؤں گا۔

10----------------میں مسلسل سوچتا رہتا ہوں کہ یہ کتنا (بہت)تکلیف دہ ہے۔

11----------------میں مسلسل سوچتا ہوں کہ کتنی شدت سے چاہتا ہوں کہ یہ درد ختم ہو جائے۔

12----------------درد کی شدت کو کم کرنے کے لئے میں کچھ نہیں کر سکتا۔

13----------------مجھے اندیشہ ہے کہ کچھ بہت زیادہ برا بھی ہو سکتا ہے۔

Multidimensional Scale of Perceived SocialSupport

ہمیں دلچسپی ہے کہ آپ مندرجہ ذیل بیانات کے بارے میں کیا محسوس کریں گے ہر بیان کو غور سے پڑھیں اس بات کی نشاندہی کریں کہ آپ ہر بیان کے بارے میں کیا محسوس کرتے ہیں.

1-بہت زیادہ اختلاف 2-اختلاف 3-کچھ حد تک اختلاف 4-نہ متفق نہ اختلاف 5-کچھ حد تک متفق 6-متفق 7-بہت زیادہ حد تک متفق

بہت زیادہ حد تک متفق	متفق	کچھ حد تک متفق	نہ متفق نہ اختلاف	کچھ حد تک اختلاف	اختلاف	بہت زیادہ اختلاف	
							1-ایک ایسا خاص شخص ہے جو ضرورت کی گھڑی میں میرے لئے موجود ہوتا ہے۔
							2-ایک خاص شخص ہے جس کے ساتھ میں اپنی خوشی اور غم بانٹ سکتا/ سکتی ہوں۔
							3-میرا خاندان واقعتاً میری مدد کرنے کی کوشش کرتا ہے
							4-جب مجھے ضرورت ہو تو میں میرے خاندان کی طرف سے مجھے جذباتی مدد اور حمایت ضرور ملتی ہے۔
							5-ایک خاص شخص ہے جو میرے لئے سکون کا حقیقی ذریعہ ہے۔
							6-میرے دوست واقعتاً میری مدد کرنے کی کوشش کرتے ہیں۔
							7-جب میرے معاملات غلط ہو جائیں تو اپنے دوستوں پر انحصار کر سکتا/ سکتی ہوں۔
							8-میں اپنے مسائل سے متعلق اپنے خاندان سے باآسانی بات کر سکتا/ سکتی ہوں۔
							9-میرے پاس اپنے دوست ہیں جن سے میں اپنی خوشیاں اور غم بانٹ سکتا/ سکتی ہوں۔
							10-میری زندگی میں خاص شخص ہے جو میرے احساسات کی پرواہ کرتا ہے۔
							11-میرا خاندان فیصلے کرنے میں میری مدد کرتا ہے۔
							12-میں اپنے دوستوں سے اپنے مسائل کے بارے میں باآسانی بات کر سکتا/ سکتی ہوں۔

Pain Anxiety Scale

براہ مہربانی تمام سوالات کی درجہ بندی کریں 0 سے 5 تک

ہمیشہ 5	اکثر 4	کبھی کبھار 3	کم 2	بہت کم 1	کبھی نہیں 0	سوالات	نمبر شمار
						میں درد میں صحیح نہیں سوچ سکتا/سکتی	01
						میں درد کے دوروں میں اپنی تکلیف کے علاوہ کچھ اور نہیں سوچ سکتا/سکتی۔	02
						جب مجھے درد محسوس ہوتا ہے۔ میں درد مسلسل درد کے بارے میں سوچتا/سوچتی رہتی ہوں۔	03
						جب مجھے درد ہوتا ہے تو میرے لئے دھیان دینا مشکل ہو جاتا ہے	04
						درد کے دوران میں پریشان ہوتا/ہوتی ہوں۔	05
						میں شدید درد میں فوراً بستر پر چلا/چلی جاتا/جاتی ہوں۔	06
						جب مجھے درد محسوس ہوتا ہے میں ہر کام روک دیتا/دیتی ہوں۔	07
						جیسے ہی مجھے درد شروع ہوتا ہے میں اسے کم کرنے کے لئے دوا لیتا/لیتی ہوں۔	08
						میں درد کی حالت میں اہم امور انجام دینے سے گریز کرتا/کرتی ہوں۔	09
						میں ان سرگرمیوں سے گریز کرتا/کرتی ہوں جو درد کا سبب ہوں۔	10
						مجھے لگتا ہے کہ اگر میرا درد بہت شدید ہو گیا تو یہ بھی کم ہو گا۔	11
						جب مجھے درد محسوس ہوتا ہے تو میں خوفزدہ ہو جاتا/جاتی ہوں کی کچھ غلط ہونے والا ہے۔	12
						جب درد محسوس ہوتا ہے تو مجھے لگتا ہے کہ میں شدید بیمار ہو سکتا/سکتی ہوں۔	13
						درد کا احساس خوفناک ہوتا ہے۔	14
						جب درد شدید اٹھتا ہے تو مجھے لگتا ہے کہ شاید میں مغرور ہو جاؤں گا/گی۔	15
						میں کانپنا شروع ہو جاتا/جاتی ہوں جب میں درد بڑھانے والی سرگرمی میں حصہ لیتا/لیتی ہوں۔	16
						ایسے لگتا ہے جیسے درد میرے دل کی دھڑکن تیز کر دیتا ہے۔	17
						جب مجھے درد ہوتا ہے تو میں چکر یا غنودگی محسوس کرتا/کرتی ہوں	18
						درد سے مجھے متلی ہوتی ہے۔	19
						درد کے دوروں کے بعد مجھے اپنے جسم کو پر سکون کرنا مشکل ہوتا ہے۔	20

Connor-Davidson Resilience Scale

Urdu Version

نمبر شمار ---------------- تاریخ ------------------- عمر -------------------

پچھلے ایک ماہ میں آپ نے جیسا محسوس کیا ہے اس کے مطابق ہر سوال کے درست جواب کے سامنے X

لکھیے اور اگر آپ کے ساتھ ایسی کوئی بات نہیں ہوئی تو بھی اپنی سمجھ کے مطابق ایسی صورت میں آپ کا جو جواب ہو تا وہ لکھئے

تقریباً مکمل درست	اکثر درست	کسی حد تک درست	شاذ و نادر ہی درست	بالکل غلط	سوال	نمبر شمار
					میں تبدیلیوں کے ساتھ ڈھلنے کی صلاحیت رکھتا / رکھتی ہوں	1
					میرے پاس کم از کم ایک ایسا قریب اور محفوظ رشتہ ہے جو ذہنی دباؤ کی صورت میں میری مدد کرتا / کرتی ہے	2
					بعض اوقات میرے مسائل کا کوئی اور حل نہیں ہوتا تو خدا اور قسمت میری مدد کر سکتے ہیں	3
					میں اپنے سامنے آنے والی کسی بھی مشکل سے نمٹ سکتا / سکتی ہوں	4
					پچھلی کامیابیاں مجھے آگے آنے والی مشکلات اور آزمائشوں میں حوصلہ فراہم کرتی ہیں	5
					جب میرا سامنا مشکلات سے ہوتا ہے تو میں ان کے دلچسپی کے پہلوؤں کو دیکھنے کی کوشش کرتا / کرتی ہوں	6
					ذہنی دباؤ سے چھٹکارا پا لینے پر میں مضبوط تر محسوس کر سکتا / سکتی ہوں	7
					کسی بیماری، زخمی حالت یا مشکلات کے بعد جلد ہی بہتری کی طرف راغب ہو جاتا / جاتی ہوں	8
					میرا یقین ہے کہ چاہے اچھا ہو یا برا، کچھ بھی بلا وجہ نہیں ہوتا	9
					نتیجہ کچھ بھی ہو لیکن میں اپنی طرف سے بھرپور کوشش کرتا / کرتی ہوں	10
					مجھے اعتماد ہے کہ میں مشکلات کے باوجود اپنے مقاصد حاصل کر سکتا / سکتی ہوں	11
					ناممکن نظر آنے والے معاملات میں بھی میں امید کا دامن ہاتھ سے نہیں چھوڑتا / چھوڑتی	12
					ذہنی دباؤ یا کسی مشکل کی صورت میں مجھے معلوم ہوتا ہے کہ میں کہاں سے مدد حاصل کر سکتا / سکتی ہوں	13
					دباؤ کی صورت میں میری توجہ مقصد پر قائم رہتی ہے اور درست سمت میں سوچتا / سوچتی ہوں	14
					میں دوسروں کی طرف سے فیصلہ کرنے کی بجائے مسائل کے حل خود تلاش کرنے کو زیادہ مناسب سمجھتا / سمجھتی ہوں	15

1 of **2**

Connor-Davidson Resilience Scale

تقریباً مکمل درست	اکثر درست	کسی حد تک درست	شاذونادر ہی درست	بالکل غلط	سوال	نمبر شمار
					میں آسانی سے ناکامیوں کی وجہ سے ہارماننے والا / والی نہیں	16
					میں زندگی کی مشکلات اور آزمائشوں کے سامنا کرتے وقت خود کو مظبوط تصور کرتا/ کرتی ہوں	17
					ضرورت پڑنے پر میں ایسے مشکل اور غیر مقبول فیصلے کر سکتا/ سکتی ہوں جو دوسروں پر اثر انداز ہوں	18
					میں ناخوشگوار اور تکلیف دہ احساسات مثلاً اداسی، خوف، اور غصہ پر قابو پا سکتا/ سکتی ہوں	19
					زندگی کے مسائل حل کرتے وقت بعض اوقات اندازے کا سہارا لینا پڑتا ہے	20
					میں یہ سمجھتا/ سمجھتی ہوں کہ زندگی کا ایک خاص مقصد ہے	21
					مجھے اپنی زندگی کے معاملات پر قابو حاصل ہے	22
					مجھے چیلینجز پسند ہیں	23
					چاہے جتنی مشکلات ہوں میں اپنا مقصد حاصل کرنے کی جستجو کرتا/ کرتی ہوں	24
					مجھے اپنی کامیابیوں پر فخر ہے	25