“A CROSS-SECTIONAL DESCRIPTIVE STUDY OF THE IMPACT OF DEPRESSION ON TREATMENT COMPLIANCE IN PATIENTS WITH PSORIASIS.”

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ABSTRACT

Introduction: Psoriasis is a chronic inflammatory skin condition with a significant psychological impact. Depression is commonly observed in psoriasis patients and may negatively influence treatment adherence. Since psoriasis management requires long-term therapy, poor compliance can lead to disease progression and underlying depression can also affect their coping styles.

Objectives: To assess the impact of depression on treatment compliance in patients with psoriasis. Additionally, to evaluate coping strategies among psoriasis patients with depression.

Methods: A cross-sectional descriptive study was conducted among 130 psoriasis patients. Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9), and treatment adherence was evaluated using the Morisky-Green-Levine Scale (MGLS). Coping strategies were analyzed using the Brief-COPE scale.

Results: Among the 130 psoriasis patients studied, 66.2% exhibited depression, with varying severity levels (46.5% mild, 31.3% moderate, 15.1% moderately severe, and 6.9% severe). Depression significantly impacted treatment adherence, as demonstrated by a moderate positive correlation between PHQ-9 and MGLS scores ($r=0.490$, $p<0.001$). Only 33.7% of depressed patients maintained high compliance compared to 59.1% of non-depressed patients, while 25.6% of depressed patients showed low compliance versus merely 2.3% of non-depressed patients. Regarding coping mechanisms, 50% of depressed patients utilized maladaptive strategies compared to only 15.9% of non-depressed patients ($p<0.001$)

Conclusion: Depression is prevalent among psoriasis patients and negatively impacts treatment adherence. Patients with depression are more likely to adopt maladaptive coping strategies, further influencing compliance. Addressing depression and promoting adaptive coping mechanisms may improve treatment adherence in psoriasis management.

Keywords: Psoriasis, depression, treatment compliance, coping strategies, PHQ-9, MGLS

ACRONYMS

CBT	Cognitive Behavioral Therapy
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4th Edition
HAM-D	Hamilton Depression Rating Scale
HPA	Hypothalamic-Pituitary-Adrenal (axis)
IL	Interleukin
MGLS	Morisky Green Levine Scale
PHQ-9	Patient Health Questionnaire-9
PsA	Psoriatic Arthritis
PUVA	Psoralen plus Ultraviolet A
QoL	Quality of Life
SERT	Serotonin Transporter
TNF-α	Tumor Necrosis Factor-alpha
WHO	World Health Organization
COPE	Coping Orientation to Problems Experienced (inventory)
MDD	Major Depressive Disorder
GAD-7	Generalized Anxiety Disorder-7 Scale
PSS	Perceived Stress Scale

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INTRODUCTION

Psoriasis represents a chronic, immune-mediated inflammatory condition characterized by accelerated epidermal growth, resulting in red, scaly patches. The disorder affects roughly 2–3% of individuals worldwide, with prevalence varying across geographical regions[1]. Within India, hospital-based investigations estimate psoriasis prevalence between 0.44% and 2.8% among dermatology outpatients[2]. Though not fatal, psoriasis substantially impacts physical, emotional, and social functioning. Affected individuals commonly experience itching, discomfort, pain, and appearance-related concerns, contributing to considerable psychological distress. The persistent and recurring nature of psoriasis requires ongoing treatment approaches, including topical preparations, light therapy, and systemic medications. Nevertheless, achieving effective disease management remains problematic due to suboptimal treatment adherence in many patients[3].

The epidemiological profile of psoriasis demonstrates a multifaceted interaction between genetic factors, environmental triggers, and immune system dysfunction. The condition typically emerges during early to middle adulthood, though onset can occur at any life stage. Research indicates a male predominance in Indian populations, with a male-to-female ratio of approximately 2:1[4]. Disease progression varies considerably among individuals, with some experiencing mild, occasional flare-ups, while others endure severe, continuous symptoms requiring lifelong intervention. Despite improvements in therapeutic options, psoriasis treatment efficacy is frequently compromised by nonadherence, resulting in heightened disease burden, increased healthcare resource utilization, and reduced quality of life[5].

Beyond skin manifestations, psoriasis is linked to numerous systemic and psychiatric comorbidities. Growing evidence indicates that psoriasis represents part of a broader systemic inflammatory process, predisposing patients to metabolic syndrome, cardiovascular conditions,

and autoimmune disorders[6]. Among these associated conditions, psychiatric comorbidities, especially depression, are particularly significant[7]. Depression prevalence in psoriasis patients ranges from 50% to 70%, with certain studies reporting even higher rates. Depression among psoriasis patients is frequently underdiagnosed and inadequately treated, despite its profound influence on overall disease outcomes[8].

The reciprocal relationship between psoriasis and depression is increasingly acknowledged in both dermatological and psychiatric literature. Systemic inflammation in psoriasis, marked by elevated levels of cytokines such as TNF-α, IL-17, and IL-23, shares inflammatory pathways implicated in depression. Conversely, depression may worsen psoriasis by disrupting the hypothalamic-pituitary-adrenal (HPA) axis, enhancing stress-related immune activation, and diminishing treatment adherence[9]. The presence of depression further complicates disease management by impairing motivation, cognitive function, and self-care behaviours. Patients experiencing low energy, feelings of hopelessness, and negative illness perceptions may struggle with consistent medication use, resulting in poorer clinical outcomes and increased disease severity.

Given the strong connection between depression and nonadherence in psoriasis, exploring the psychological determinants of treatment compliance is essential[10]. While international research has extensively documented depression's role in chronic disease management, limited studies in the Indian context address the intersection of psoriasis, depression, coping mechanisms, and adherence behaviors. Understanding these interrelationships is crucial for developing comprehensive, patient-centered approaches that incorporate mental health support into dermatologic care.

This investigation aims to address this knowledge gap by examining the psychological dimensions of psoriasis, particularly depression's impact on treatment adherence and coping

strategies. By identifying adherence barriers and evaluating coping mechanisms, the study seeks to provide insights that will contribute to developing holistic treatment approaches integrating dermatology and psychiatry, ultimately enhancing long-term patient outcomes.

Objectives of the study

PRIMARY OBJECTIVE -To assess the impact of Depression on treatment compliance in patients with Psoriasis

SECONDARY OBJECTIVE- To assess the coping skills among patients of Psoriasis with Depression.

REVIEW OF LITERATURE

Introduction-Psoriasis

Psoriasis represents a chronic, immune-mediated inflammatory condition affecting the skin and, in certain cases, overall systemic health. The disorder is characterized by irregular keratinocyte proliferation, immune system dysregulation, and heightened systemic inflammation, resulting in clearly delineated, reddened plaques with silvery-white scaling. This condition has a strong genetic component and is affected by environmental factors including infections, physical trauma, psychological stress, and various medications[11].

Epidemiology of Psoriasis

Psoriasis Prevalence and Demographics: Psoriasis impacts a notable minority of the global population, although prevalence estimates differ across regions and research methodologies. Worldwide, approximately 2% of individuals are affected by psoriasis, with documented prevalence ranging from virtually 0% in certain isolated communities to as high as 11.8% in specific high-risk populations[21]. Most nations report prevalence between approximately 0.5% and 2.5%. For instance, psoriasis affects ~1.5–2% of individuals in the United Kingdom and ~1–2% across most European countries[22]. Higher rates around 4–5% have been observed in the United States and Canada, whereas regions of Asia and Africa report lower frequencies[23]. In India, precise population-based prevalence information is limited; nevertheless, multiple hospital-based investigations indicate that psoriasis constitutes about 0.44% to 2.8% of dermatology outpatient visits[24]. A multi-center Indian study identified an overall incidence of approximately 1% among dermatology clinic patients. Although psoriasis occurs in both genders, Indian data indicate a male predominance with a male:female ratio of roughly 2:1[25]. The typical onset age ranges from the 20s to 40s, though the condition can emerge at any age; pediatric cases represent a smaller proportion. Ethnic and genetic influences may affect disease

expression, as evidenced by geographic variability. The World Health Organization's Global Report on Psoriasis emphasizes unaddressed needs in understanding psoriasis epidemiology across diverse populations and warns that findings from one region may not be universally applicable[26].

Psoriasis: Clinical Subtypes and Variants

Psoriasis represents a clinically diverse disorder, and contemporary research increasingly describes it as a spectrum of phenotypes defined by both lesion morphology and anatomical distribution. Traditionally, psoriasis subtypes have been categorized by morphology (e.g., plaque, guttate, pustular, erythrodermic), but numerous studies also acknowledge anatomic site variants such as scalp, palm, soles, nails, or flexure areas as distinct clinical presentations.

A comprehensive investigation on psoriasis phenotype prevalence among males and females in the United States reported plaque psoriasis prevalence ranging from 55% to 60% across various groups. Non-plaque phenotypes, including scalp psoriasis (45% to 56%), palmoplantar psoriasis (12% to 16%), nail psoriasis (23% to 27%), and inverse psoriasis (21% to 30%), were also common, highlighting simultaneous occurrences of multiple non-plaque phenotypes in 14–17% of patients. Pauli et al. observed that conventional plaque psoriasis generally affects the trunk and extensor surfaces, elbows, and knees. Other lesion distribution patterns, including scalp and palmoplantar psoriasis, are recognized as clinically distinct subtypes of plaque psoriasis. Scalp and palmoplantar psoriasis can appear independently or alongside other psoriasis subtypes. However, they generally demonstrate greater resistance to treatment than typical plaque psoriasis. These two subtypes are associated with a greater disease burden that exceeds that of conventional psoriasis and is disproportionate to the affected body surface area. For example, individuals with scalp and palmoplantar psoriasis report greater physical and

psychosocial impairment from the condition compared to those with the conventional plaque form of psoriasis.

Clinical guidelines also acknowledge anatomical subtypes, particularly for therapeutic decisions. The American Academy of Dermatology (AAD) guidelines and the National Psoriasis Foundation frequently discuss treatment considerations for "psoriasis in special areas." For instance, separate recommendations exist for managing scalp psoriasis, palmoplantar psoriasis, and nail psoriasis since these may require specialized topical formulations or systemic treatments. An Indian expert consensus (Handa, 2010) specifically addresses psoriasis in difficult-to-treat locations – namely the scalp, palms/soles, and nails – emphasizing that lesion location represents an important factor in clinical management.

Diagnosis

Diagnosis is primarily clinical, based on lesion appearance and distribution. In atypical cases, histopathology confirms the presence of hyperkeratosis, acanthosis, Munro micro-abscesses, and elongated rete ridges. Although biomarkers and genetic testing are being explored, they are not yet incorporated into routine diagnostic procedures[16].

Systemic Involvement in Psoriasis

Psoriasis is increasingly recognized as a systemic inflammatory disorder with comorbid conditions extending beyond cutaneous manifestations. Psoriatic arthritis (PsA) affects nearly 30% of psoriasis patients, causing joint pain, stiffness, and progressive deformities. The condition also has strong associations with cardiovascular diseases, metabolic syndrome, obesity, insulin resistance, and dyslipidemia. Individuals with psoriasis face an elevated risk of hypertension, myocardial infarction, and cerebrovascular events[17]. Furthermore, psychosocial comorbidities such as depression, anxiety, and suicidality significantly impact quality of life[18].

Treatment Approaches

Management strategies depend on disease severity, site involvement, and patient factors[19]. • Topical Therapies: First-line treatment for mild to moderate psoriasis includes corticosteroids, vitamin D analogues (calcipotriol), and calcineurin inhibitors.

• Phototherapy: Narrowband UVB (NB-UVB) therapy is effective for widespread or refractory cases, while psoralen plus UVA (PUVA) is used selectively.

• Systemic Therapy: In moderate to severe cases, systemic agents such as methotrexate, cyclosporine, and acitretin are prescribed. Biologic agents targeting specific inflammatory pathways (TNF-α inhibitors, IL-17 inhibitors) are reserved for severe, refractory, or PsA-associated psoriasis[20].

• Lifestyle Modifications: Weight loss, smoking cessation, stress management, and dietary modifications help in reducing disease severity and improving response to therapy.

Psychiatric comorbidities in psoriasis

Several factors associated with psoriasis increase the likelihood of depression and other psychological issues like anxiety, suicidality, and increased substance use[27]. Greater clinical severity of psoriasis represents a major risk factor for depression. Patients with more extensive or severe disease tend to exhibit higher rates of depressive symptoms. In the Indian study mentioned above, there was a significant positive correlation between psoriasis severity and depression and anxiety scores. Extended illness duration can also contribute to psychological distress, as coping resources may become depleted over time. Visible and disfiguring lesions – such as those on the face, scalp, or hands – are strongly associated with reduced self-esteem, embarrassment, and social anxiety, which can precipitate depression. Patients who feel stigmatized by others due to their skin condition often internalize feelings of shame[28]. In a

study of psoriatic patients, feelings of being rejected or observed in public correlated with higher Beck Depression Inventory scores. Females with psoriasis appear particularly vulnerable to psychosocial effects; some reports suggest women experience greater psychological morbidity than men with comparable skin severity. This may relate to societal pressures regarding appearance, although biological differences are also possible. Indeed, a recent review identified sex-based differences in psoriasis expression and impact: women reported worse quality of life impacts at equivalent disease levels and potentially different coping needs[29]. Other demographic factors have produced mixed results – for instance, some studies find younger patients struggle more with the psychosocial burden, while others note elderly patients are at risk of depression. It is generally accepted that any chronic illness can lead to depression due to the strain of persistent symptoms and life adjustments required; psoriasis, with its relapsing course, visible stigma, and sometimes painful lesions, exemplifies this. Additionally, comorbid psoriatic arthritis can compound the risk, as chronic joint pain and disability further diminish patients' quality of life and can increase depression and anxiety rates. Beyond depression and anxiety, individuals with psoriasis demonstrate higher rates of substance use which might represent coping attempts but can worsen both the physical condition and mental health. There is also evidence of increased suicidality[30].

In summary, the epidemiological profile of psoriasis encompasses not only skin and joint manifestations but also a considerable psychiatric dimension. This comorbidity burden requires early recognition; as one study concluded, addressing psychological factors alongside the dermatologic condition is imperative for improved overall outcomes.

Comorbid Depression in Psoriasis

Psychiatric morbidity, particularly depression, is significantly elevated among psoriasis patients compared to the general population. Estimates of depression prevalence in psoriasis

vary considerably, due to differences in assessment methods and thresholds, but multiple studies confirm a substantially increased risk[31]. A 2014 systematic review and meta-analysis by Dowlatshahi et al. determined that more than 10% of psoriasis patients meet criteria for clinical major depression, and approximately 20–30% exhibit clinically significant depressive symptoms. In that analysis, the pooled prevalence of depressive symptoms was ~28%, and of diagnosed major depression was around 12–19% depending on criteria[32]. Population-based studies indicate psoriasis patients are approximately 1.5 times more likely to experience depression than individuals without psoriasis. They are also more likely to receive antidepressant prescriptions, reflecting the burden of depressive illness[33]. Similarly, anxiety disorders and elevated stress levels are common in psoriasis; one Indian tertiary hospital study reported 76.7% of psoriasis patients had anxiety and 78.9% had some level of depression on screening questionnaires. Notably, in that study over half of patients also demonstrated significant perceived stress[34].

Pathophysiology - Immunological Links Between Psoriasis and Depression

Emerging research suggests a bidirectional "skin-brain axis" whereby chronic inflammation in psoriasis can influence the central nervous system and vice versa. Psoriasis is primarily a T-helper 1 and Th17 cell–driven inflammatory disease; lesions contain elevated levels of cytokines such as tumor necrosis factor-alpha, interleukin-17, IL-23, IL-6, and interferon-gamma, among others. Interestingly, these same pro-inflammatory mediators have been implicated in the pathophysiology of depression[35]. Major depressive disorder has increasingly been associated with a state of chronic, low-grade inflammation characterized by elevated circulating cytokines and acute-phase reactants. Patients with depression, especially those with treatment-resistant or severe depression, often exhibit higher levels of these immune markers compared to non-depressed individuals. The overlap of inflammatory profiles raises the possibility that systemic inflammation from psoriasis could contribute to depressive

symptoms[36]. It is hypothesized that cytokines such as TNF-α can cross the blood-brain barrier or affect the brain via peripheral nerves and trigger changes leading to depression – for example, by altering neurotransmitter metabolism or the hypothalamic-pituitary-adrenal axis. Studies have demonstrated that TNF-α and IL-1 can reduce synaptic availability of serotonin and decrease brain-derived neurotrophic factor, changes which are associated with depression. Supporting this connection, treatment of psoriasis with cytokine-blocking biologics not only improves skin lesions but has also been observed to ameliorate depressive symptoms in some patients. Conversely, severe depression and stress can promote a pro-inflammatory state that might exacerbate psoriasis, suggesting a bidirectional relationship. Depression is known to hyper-activate the HPA axis in many cases, leading to cortisol dysregulation and sympathetic nervous system activation, which can modulate immune function. Chronic stress and HPA overdrive may impair the skin barrier and immune tolerance, potentially precipitating or worsening psoriatic flares. Inflammatory cytokines increase the activity of indoleamine 2,3-dioxygenase, an enzyme that diverts tryptophan away from serotonin production towards the kynurenine pathway, thereby depleting serotonin – a pathway observed in both psoriasis and depression. As noted, TNF-α has been shown to increase serotonin transporter activity, leading to greater reuptake and less serotonin available at synapses. Consistent with this, patients on TNF-α blockers often report mood improvement, and experimental studies found that blocking TNF-α can normalize SERT activity and increase serotonin levels. In summary, psoriasis-driven inflammation may biologically predispose patients to depression through HPA axis dysregulation and direct cytokine effects on brain neurotransmitters[37]. Moreover, reduced melatonin levels have been noted both in psoriasis and depression, and melatonin has immunoregulatory properties; low melatonin could conceivably remove an inhibitory check on inflammation, further connecting the two conditions[38]. Genetic studies also suggest shared vulnerability: preliminary data have identified certain chromosomal loci and genes that may

predispose individuals to both psoriasis and mood disorders, though this area is still being explored. In conclusion, growing evidence indicates that psoriasis and depression share common inflammatory and neuroendocrine pathways. This "immune-mediated" link helps explain why the two conditions frequently coexist and why treating the inflammation can sometimes improve mental health, and likewise why effectively treating depression or stress has been shown to reduce psoriasis severity in some studies[39].

Psychosocial Impact of Psoriasis

Beyond the immunological aspects, the psychosocial consequences of psoriasis are substantial and constitute a significant component of the disease burden. Psoriasis influences patients' self-perception and their interactions with society. The frequently visible skin manifestations can provoke negative reactions from others, resulting in stigmatization. Patients routinely express feelings of shame, embarrassment, and diminished self-worth due to their skin's appearance[40]. Many individuals take extensive measures to hide their lesions – wearing concealing clothing in warm weather, avoiding swimming or other activities that would expose their skin[41]. While understandable as adaptive behaviors, these actions can unfortunately reinforce social withdrawal and isolation. In a qualitative investigation, individuals with psoriasis described how the condition created a "vicious cycle": psoriasis generates stress and social discomfort, which subsequently triggers flares or exacerbates symptoms, leading to additional stress. Over time, this pattern can foster a sense of learned helplessness where patients perceive little control over their condition or life trajectory. Quality of life studies determine that psoriasis has an impact comparable to other significant chronic illnesses. One review indicated that individuals with psoriasis experience disability and quality-of-life reduction similar to conditions like diabetes or heart failure[42]. The economic impact can include direct treatment expenses and indirect losses from unemployment or underemployment. Persistent itching and discomfort can also disturb sleep, resulting in fatigue and irritability.

Emotionally, psoriasis patients frequently experience depression and anxiety as previously noted, but even those without clinically diagnosed psychiatric disorders report elevated stress, worry, and interpersonal sensitivity. They may develop maladaptive coping strategies: some resort to alcohol or smoking to manage stress, while others might become excessively reliant on avoidant behaviors. There is also an element of anger or frustration in many patients – anger directed at their own skin, which they may perceive as betraying them, or frustration with the chronic, relapsing nature of treatment[43]. This emotional burden can strain relationships; patients sometimes feel their family members or partners cannot fully comprehend their experience. Conversely, family support plays a crucial role in psychosocial adjustment. In cultures such as India's, where extended family often resides together, a supportive family environment can help patients cope, but negative attitudes or stigma within the family can intensify distress[44].

In summary, the psychosocial impact of psoriasis encompasses: stigmatization and social rejection, leading to isolation; effects on self-image, resulting in reduced confidence and possible sexual dysfunction or avoidance of intimacy; stress and mood disturbances including depression and anxiety, which further aggravate the subjective experience; and diminished quality of life across physical, emotional, and social domains. This reinforces that psoriasis is not "merely a skin condition" but a disorder affecting the whole person. Addressing these psychosocial issues is essential, as untreated depression or severe stress can establish a feedback loop that deteriorates psoriasis outcomes. As one article concluded, effective management of psoriasis requires a holistic approach – treating the skin lesions alone is insufficient without also attending to the psychological well-being of the patient.

Impact of Depression on Treatment Adherence

Depression can significantly impair a patient's ability and willingness to adhere to medical treatments, and psoriasis management is no exception. Chronic depressive symptoms influence cognition, motivation, and behaviour in ways that create obstacles to consistent treatment implementation. Patients with depression typically experience low energy and fatigue, impaired concentration, indecisiveness, and a general diminishment of interest or pleasure in daily activities. These symptoms can directly translate into non-adherence: for instance, a patient experiencing fatigue and hopelessness may lack the motivation to apply messy topical preparations daily or to attend phototherapy sessions multiple times weekly. Instead, they may procrastinate or omit treatments, especially when immediate results are not apparent[45].

Depression is strongly associated with inadequate medication adherence in patients with chronic conditions. Research has demonstrated that depressed patients exhibit lower likelihood of adhering to their prescribed treatments, resulting in poorer health outcomes and increased healthcare expenditures. For example, a meta-analysis conducted in the United States revealed that depressed patients are 1.76 times more likely to be non-adherent to their medications compared to non-depressed patients[46]. This relationship persists across various chronic conditions, including diabetes, hypertension, and asthma.

Mechanisms Linking Depression to Non-Adherence

General Impact: Depression frequently results in motivational deficits, reduced self-efficacy, and diminished interest in health-related activities. For example, depressed individuals may experience hopelessness regarding their condition, leading to inadequate adherence to prescribed treatments. Additionally, symptoms such as fatigue and concentration difficulties can hinder patients' capacity to manage complex treatment regimens.[47]

following are the different mechanisms which lead to non compliance.

Table 1- Mechanisms Linking Depression to Non-Adherence

Mechanism	Description	Impact on Treatment
Reduced Motivation and Self-Care[48]	Depressive symptoms such as low motivation, fatigue, and hopelessness	Difficulty adhering to treatment regimens, especially those requiring regular application of topical medications or attendance at phototherapy sessions
Cognitive Impairments[49]	Depression affects memory and decision-making	Leads to missed doses or appointments
Social Withdrawal[50]	Depression often results in social isolation	Reduces patients' willingness to seek support or engage in treatment-related activities
Biological Factors[51]	Depression is associated with increased levels of pro-inflammatory cytokines	May worsen psoriasis severity and reduce the efficacy of treatments

Table 2- Summaries of the studies of the Impact of depression on treatment adherence on chronic illnesses.

Author(s)	Year	Objectives	Methodology	Key Findings
M. R. P. Reddy et al.[71]	2021	Identify factors influencing antidepressant adherence in women.	Survey-based study analyzing adherence patterns among women attending outpatient psychiatry.	Adherence influenced by marital status and paid work; psychoeducation crucial for adherence.
Elif Ok et al.[73]	2022	Investigate depression's effect on adherence in elderly patients with chronic diseases.	Cross-sectional study using the Modified Morisky Scale and depression screening.	Depression reduced compliance; sleep problems exacerbated non-adherence.
Ranjani Kanakaraj et al[75].	2024	Evaluate depression's impact on ART adherence among HIV patients.	Cross-sectional study analyzing adherence patterns in depressed vs.	Mild-moderate depression lowered adherence, especially in women and

			non-depressed groups.	unemployed individuals.
Hussain Shakeel et al.[76]	2024	Assess depression's impact on adherence in RA patients.	Correlation analysis using PHQ-9, DAS 28, and adherence measures.	Higher PHQ-9 scores correlated with lower adherence; psychological factors crucial in RA management.
Jahangir Khan et al[77].	2024	Examine non-adherence patterns among mental illness patients.	Retrospective study on treatment dropout rates in a District Mental Health Care Center.	64.3% discontinued within a year; highest dropout in substance use disorder (77%).

Depression, Psoriasis and Treatment Adherence

Depression substantially influences treatment adherence among psoriasis patients. Studies indicate that individuals experiencing depression demonstrate reduced likelihood of adhering to topical, systemic, and biologic therapies. Empirical research supports these observations. For example, one investigation highlighted that depression is prevalent among psoriasis patients and correlates with both reduced medication use and decreased health service utilization. Another study determined that psoriasis patients with depressive symptoms exhibit higher rates of alcohol and tobacco consumption, behaviours known to be associated with diminished treatment compliance in chronic conditions. Depression can establish cognitive and emotional obstacles to adherence. Cognitive distortions common in depression – such as catastrophizing or all-or-nothing thinking – may cause a patient to prematurely abandon a therapy. For instance, if a psoriatic patient is depressed, a minor flare might be interpreted as evidence that "no treatment works" or that "it's hopeless," leading them to discontinue their medication regimen. This phenomenon is frequently described as a form of learned helplessness. Psoriasis can already generate feelings of helplessness, and depression intensifies this. Qualitative interviews with psoriasis patients have documented this mindset: patients describe perceiving no control over their skin condition and experiencing frustration or hopelessness when stress triggers flares despite ongoing treatment. These perceptions of limited control can undermine the rationale for adherence – if one believes "nothing I do will matter," one is unlikely to diligently maintain a treatment regimen. One interview study observed that some participants, to "reduce distress and manage uncertainty," deliberately took breaks from their treatments or only used medications when they perceived a flare as severe, rather than continuously. This behavior was associated with underlying distress and a need to reestablish a sense of control, albeit in a maladaptive manner. Essentially, depression fuels

negative illness perceptions: patients may view psoriasis as an insurmountable challenge or question the effectiveness of treatments, which directly compromises adherence[52].

As another example, a study conducted during the COVID-19 pandemic found that 18% of psoriasis patients discontinued their treatment due to fear of COVID-19, with higher rates of non-adherence among those experiencing anxiety and depression. A tangible consequence of depression's impact on adherence is observed in clinical outcomes. Unmanaged depression in a psoriasis patient can result in suboptimal improvement or frequent flares despite the availability of effective treatments. In turn, persistent disease activity can exacerbate the patient's depression – creating a self-perpetuating cycle[53].

Empirical evidence confirms that depression severity correlates inversely with adherence – that is, the more severe the depressive symptoms, the greater the likelihood of nonadherence. Therefore, addressing depression is not only important for patients' mental health but represents a critical component of ensuring they can fully engage in psoriasis treatment. Identifying depression early and providing appropriate interventions could enhance adherence and thereby improve clinical skin outcomes. This integrated approach will be discussed in later sections on management recommendations.

Sociodemographic and Clinical Factors Affecting Adherence in Psoriasis

Various factors influence treatment adherence in psoriasis patients. These include treatment regimen complexity, perceived treatment effectiveness, and psoriasis impact on quality of life. For instance, patients who perceive their mental and physical health as poor demonstrate lower likelihood of adhering to phototherapy and other treatments. Additionally, factors such as gender, with women generally exhibiting higher adherence rates, and the use of public transportation to access treatment facilities can also affect adherence[54]. Other factors include:

1. Severity of Psoriasis: Patients with more severe psoriasis are more likely to experience depression, which subsequently reduces treatment adherence[55].

2. Type of Treatment: Adherence varies according to treatment modality. For example, topical treatments often demonstrate lower adherence rates due to their complexity and requirement for frequent application, while biologic therapies may show higher adherence rates due to their efficacy and convenience[56].

3. Socioeconomic Factors: Financial limitations, inadequate healthcare access, and lower socioeconomic status can intensify nonadherence, particularly among depressed patients who may encounter additional barriers to seeking care[57].

4. Patient-Physician Relationship: A positive relationship between patients and healthcare providers can enhance adherence, while lack of trust or inadequate communication can impede it[58].

5. Education and Health Literacy: Higher education levels and improved health literacy are associated with better adherence, as these patients often possess a clearer understanding of their condition and treatment rationale. Conversely, limited education might lead to misunderstandings about treatment importance, resulting in inconsistent use. Tailoring communication to the patient's comprehension level is essential[59].

6. Comorbidities and Lifestyle Factors: Coexisting conditions can influence adherence. For example, an obese patient might find it difficult to apply topical treatments, or a patient with multiple medications might prioritize other treatments over psoriasis care. Lifestyle factors such as smoking and alcohol consumption are also linked to poorer adherence. Addressing these factors comprehensively can improve adherence.

7. Type and Severity of Psoriasis: Different clinical variants and severity levels can impact compliance. Patients with mild psoriasis might not adhere well, possibly because the disease doesn't sufficiently concern them, while those with severe disease have more to gain from consistent treatment but may face complex regimens that are difficult to maintain. Simplifying treatment plans can help enhance adherence[60].

8. Duration of Disease: Newly diagnosed psoriasis patients might be highly motivated to achieve clearance and follow instructions meticulously. However, over time, treatment fatigue can develop, leading to adherence lapses. Conversely, experienced patients might become proficient at managing their condition, incorporating treatment into their daily routines. Early successes and establishing realistic expectations are important to maintain patient engagement over the long term[60].

Depression significantly impacts treatment compliance in psoriasis patients by intensifying emotional distress, diminishing quality of life, and complicating treatment adherence. A multifaceted approach addressing both physical and psychological aspects of psoriasis is essential. Strategies such as patient education, shared decision-making, psychological interventions, and simplified treatment regimens can improve compliance and overall outcomes for psoriasis patients with depression.

Indian Studies on Psoriasis, Depression, and Treatment Adherence

Research from India on the psychological aspects of psoriasis and treatment adherence has been increasing in recent years, though it still remains limited compared to Western literature. Indian studies provide valuable insights given the unique cultural, social, and healthcare context in India, where factors such as stigma, joint family systems, and access to dermatology care may differ from Western countries. Here we summarize key findings from Indian research and highlight gaps:

Psychiatric Comorbidity in Indian Psoriasis Patients: Psoriasis, a chronic inflammatory skin condition, is frequently associated with significant psychiatric comorbidities, particularly in the Indian context. Studies from various regions in India highlight a high prevalence of psychiatric disorders among psoriasis patients, with anxiety and depression being the most common. For instance, a study from North India reported that 74.3% of psoriasis patients had psychiatric comorbidities, with anxiety disorders being the most prevalent[61]. Similarly, research from Assam indicated that 61.1% of psoriasis patients experienced psychiatric issues, predominantly depression, which significantly impacted their quality of life[62]. In Tripura, a study found that 82.3% of dermatology patients, including those with psoriasis, had psychiatric disorders, with depression and anxiety being the most frequent[63]. Another study from Telangana also reported a notable prevalence of psychiatric symptoms, emphasizing the need for integrated care models[64]. The impact of these psychiatric conditions is profound, affecting the psychological and social functioning of patients, and often correlating with the severity of psoriasis[65].

The presence of psychiatric comorbidities in psoriasis patients is linked to various demographic factors, including gender, socioeconomic status, and family type, with females often at higher risk[66]. The psychological burden of psoriasis is further compounded by the stigma and social challenges associated with visible skin conditions, leading to issues such as fear, embarrassment, and social withdrawal[67]. These findings underscore the critical need for routine psychiatric evaluation and the integration of mental health care into the management of psoriasis to improve patient outcomes and quality of life[68].

Overall, the Indian studies collectively highlight the significant psychiatric burden among psoriasis patients and the necessity for a holistic treatment approach that addresses both dermatological and psychological needs.

Table 3- Summary of the studies on Psychiatric Comorbidities in Psoriasis (studies done in India)

Author(s) / Study Location	Year	Objectives	Methodology	Prevalence of Psychiatric Comorbidities	Key Findings
Sarkar et al[69]	2014	Psychiatric morbidity in psoriasis	48 patients vs 48 controls using SRQ-24 for psychiatric morbidity and Skindex-29 for QoL	62.5% psychiatric morbidity	High psychiatric morbidity among psoriasis patients
Lakshmy et al[70]	2015	Measure depression/anxiety and psoriasis severity/QoL	Surveyed 90 patients using PHQ-9, GAD-7, PSS, WHOQOL-BREF	78.9% depression, 76.7% anxiety	Depression and anxiety correlated with severe psoriasis
Dey et al.[65]	2022	Assessment of depression and suicidal risk in psoriasis	Hospital-based study, depression and suicidal risk in psoriasis patients	44% of psoriasis patients had depression; 50% mild depression, 31.9% very severe depression with suicidal ideation; 4.6% high suicide risk	Depression and suicidal risk present in psoriasis patients

Yedve et al.[68]	2022	Psychiatric comorbidity and QoL in psoriasis	Cross-sectional study, assessed psychiatric comorbidities and QoL in psoriasis	61% of psoriasis patients had psychiatric comorbidity; Major Depressive Disorder: 26%, Adjustment Disorder with Depressed Mood: 10%, Adjustment Disorder with Anxiety: 8%, Nicotine Dependence: 8%, Dysthymia: 4%, Alcohol Dependence: 4%, Social Phobia: 1%	Among psoriasis patients, 61% had psychiatric comorbidities; Major Depressive Disorder was the most common (26%), followed by Adjustment Disorders, Substance Use, and Social Phobia[68]
Kumar et al.[62]	2023	Psychiatric morbidities and QoL impact in psoriasis	Surveyed psoriasis patients, assessed psychiatric issues and QoL impact	61.1% psychiatric morbidity in psoriasis patients	Depression significantly impacted quality of life[62]
Changulani et al.[66]	2023	Psychiatric morbidity among	Tertiary care hospital study, psychiatric	Overall psychiatric morbidity:	Psoriasis showed an insignificant

		dermatology patients	morbidity in dermatology patients	29.67%; Anxiety: 28.7%, Depression: 17.33%, Stress: 9.7%	association with anxiety (p-value not specified) and stress (p-value = 0.05); Psychiatric morbidity among dermatology patients was 29.67%[66]
Sahore et al.[61]	2024	Psychiatric comorbidity in psoriasis patients	Cross-sectional study in North India, psychiatric disorders assessed	74.3% psychiatric comorbidity; Anxiety: 22.9%; Depression (Mild: 8.0%, Moderate: 8.7%, Severe: 8.0%)	Significant psychiatric comorbidity in psoriasis patients; Anxiety (22.9%) and varying severity of depression; Higher education, joint families, urban residence, and lower middle socioeconomic status significantly associated with

					psychiatric comorbidities[61]
Malakar et al.[63]	2024	Psychiatric morbidities in dermatology patients (including psoriasis)	Cross-sectional study, psychiatric morbidities in dermatology OPD patients	82.3% of dermatology OPD patients had psychiatric disorders, with depression being common among various skin conditions	High prevalence of psychiatric disorders among dermatology patients, including psoriasis[63]
Faizan et al[64]	2024	Psychiatric comorbidity among dermatology patients	Study in Telangana, psychiatric symptom burden assessed	25% depression, 33% anxiety	Notable psychiatric symptom burden; need for integrated care models[64]
Samreen et al.[67]	2024	Frequency of neuropsychiatric illness in psoriasis	Cross-sectional study, assessed neuropsychiatric illness in psoriasis	62.5% had positive psychiatric screeners; Fear: 68.75%, Embarrassment: 66.66%	Among 48 psoriasis patients, 62.5% had psychiatric morbidity; Fear (68.75%) and embarrassment (66.66%) were the most common psychological morbidities[67]

Coping Strategies in Psoriasis

The coping mechanisms utilized by psoriasis patients can be broadly classified. The Brief COPE inventory (Carver, 1997) evaluates 14 coping strategies (including active coping, planning, acceptance, venting, denial, substance use, religion, etc.). However, factor-analytic research by Eisenberg et al. (2012) suggested these can be consolidated into two overarching dimensions: approach coping versus avoidant coping [80]. Approach coping encompasses active efforts to resolve problems or seek support, whereas avoidant coping includes behaviors such as denial, disengagement, or substance use.

Studies indicate psoriasis patients frequently prefer certain coping strategies. Fortune et al. (2002) noted that the most commonly employed coping strategies among psoriasis patients were acceptance, planning, active coping, and positive reinterpretation [81]. Likewise, an Italian multicenter investigation (PSYCHAE, 2007) identified planning and active coping as the predominant strategies in psoriasis patients [82]. Nevertheless, many patients also engage in emotion-focused coping in response to the chronic stress associated with psoriasis. For example, a Brazilian study determined that psoriasis patients were significantly more likely than controls to employ escape-avoidance coping and self-controlling coping [83]. These avoidant approaches may temporarily reduce distress but can lead to internalized emotions and sustained long-term stress [84].

Numerous studies have examined coping in psoriasis using the Brief COPE or comparable scales. A cross-sectional study involving 250 psoriasis patients (U.K.) found that the illness "brings a generic form of coping" that must be adapted to psoriasis' specific requirements, and many patients feel their coping resources are insufficient for the disease's challenges [85]. Common coping responses include attempting to confront the disease (e.g., rigorous skin care

routines, lifestyle modifications) as well as trying to emotionally disconnect when overwhelmed.

Interaction of Depression and Coping in Psoriasis

Depression can substantially affect how patients cope with psoriasis, and conversely, coping strategies may influence depression levels. Numerous studies observe a bidirectional relationship: patients experiencing greater depression tend to utilize more maladaptive coping, which subsequently is associated with poorer psychological outcomes [86]. Sobolewski et al. (2022) examined 111 psoriasis patients and discovered that greater utilization of emotion-oriented coping was associated with diminished "psychophysical condition" [87]. In contrast, task-oriented (problem-focused) coping did not demonstrate such a negative impact [88].

In another hospital study from India, Saha et al. emphasized that psoriasis patients often cope by expressing their emotions but also by planning ahead [89]. As mentioned, they identified a clear connection between higher HAM-D depression scores and coping patterns [90]. This supports the concept that depression impairs effective coping – depressed patients may be less optimistic about planning or problem-solving and instead resort to venting or avoidance.

Discussion and Clinical Implications

The literature consistently demonstrates that depression and coping are deeply interconnected in the context of psoriasis. Depression increases the probability of maladaptive coping (e.g., avoidance, rumination, resignation), while maladaptive coping is subsequently associated with worse psychological outcomes [91]. Positively, patients who employ adaptive strategies – such as illness acceptance, proactive problem-solving, and positive reframing – tend to report better adjustment and less severe distress [92].

Conclusion

Depression and other psychological comorbidities significantly impact adults living with psoriasis, influencing how they manage their chronic condition. The evidence suggests that depressed psoriasis patients frequently resort to maladaptive coping strategies (such as avoidance, venting, or self-blame), which can deteriorate their overall prognosis. Conversely, adaptive coping (acceptance, active problem-solving, positive reframing) is associated with improved psychological well-being and could mitigate some of the disease's effects [93]. Studies from India echo global findings, demonstrating high rates of depression and anxiety in psoriasis and a tendency toward emotion-focused coping in this population [94]. Addressing both the physical symptoms and psychological needs of psoriasis patients is essential for comprehensive care.

MATERIALS AND METHODS

Source of Data: Patients diagnosed with psoriasis visiting the Department of Dermatology at KLE's Dr. Prabhakar Kore Charitable Hospital were enrolled for this study.

Study Design: This study was designed as a cross-sectional descriptive study conducted in a tertiary care hospital setting.

Sample Size Calculation: The sample size was calculated using the following formula:

n=Z1−α/22×p×qd2n = \frac{Z_{1-\alpha/2}^2 \times p \times q}{d^2}

Where:

- n = Desired sample size
- Z1−α/2Z_{1-\alpha/2} = Standard normal deviation for a 95% confidence interval (1.96)
- p = Expected prevalence based on previous research (78.9% or 0.789)
- q=1−p=0.211q = 1 - p = 0.211
- d = Desired margin of error (precision), set at 7% (0.07)

Thus,

n = 130.51

Hence, the required sample size was approximately 130 participants.

Inclusion Criteria:

1. All adults diagnosed with psoriasis undergoing treatment for at least 3 months.
2. Patients willing to provide informed consent.

Exclusion Criteria:

1. Patients diagnosed with independent mood disorders or psychotic disorders.
2. Patients with substance use disorders, except nicotine.
3. Patients with other comorbid skin disorders.
4. Terminally ill patients.
5. Patients with other chronic comorbid illnesses except diabetes, asthma, obesity,hypertension.

Ethical clearance: Prior to commencement, ethical clearance was obtained from Institutional Ethics Committee, Jawaharlal Nehru Medical College, Belagavi. Ethical clearance number-MDC/JNMCIEC/161

Data Collection Procedure: After obtaining informed consent, all eligible patients were interviewed using semi-structured questionnaires to gather socio-demographic and clinical data. The Patient Health Questionnaire-9 (PHQ9) was used to screen for depressive symptoms and assess their severity. Treatment adherence was evaluated using the Morisky Green Levine Scale (MGLS). Coping strategies, encompassing cognitive, emotional, and behavioural methods, were assessed with the Brief COPE scale.

Data Processing and Statistical Analysis: Collected data were tabulated systematically. Socio-demographic and clinical variables were summarized using percentages for categorical data and mean ± standard deviation for continuous variables. Initially samples were subjected to PHQ9 scale, and they were graded as per the severity. And later Participants were categorized into two groups based on PHQ9 scores: psoriasis patients with depressive symptoms and psoriasis patients without depressive symptoms. Both groups' scores from the adherence and coping scales were compared using the Student's t-test. Correlations between depressive

symptoms (independent variable) and adherence and coping strategies (dependent variables) were calculated using Spearman's correlation coefficient, as appropriate.

A p-value ≤ 0.05 was considered statistically significant.

TOOLS

1. Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a widely-used depression screening tool based on DSM-IV criteria. It consists of nine items, each scored on a scale ranging from "0" (not at all) to "3" (nearly every day), reflecting the frequency of depressive symptoms over the past two weeks. Developed by Dr. Robert L. Spitzer, Dr. Janet B.W. Williams, and Dr. Kurt Kroenke along with colleagues at Columbia University in 1999, it is easy to administer, typically requiring about three minutes for self-reporting or clinician administration. The PHQ-9 has a reliability of 0.84 and validity of 0.73. It categorizes depression severity as follows:

PHQ-9 Score	Depression Severity
1-4	None/Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

2. Morisky Green Levine Scale (MGLS)

The Morisky Green Levine Scale is a self-rated questionnaire originally developed by Morisky et al. to assess treatment adherence in hypertensive patients. It contains four items answered with "yes" or "no" and can be completed quickly, usually within one minute. The MGLS categorizes compliance levels clearly:

- **Score 0:** High compliance
- **Score 1-2:** Medium compliance
- **Score 3-4:** Low compliance

Additionally, it identifies reasons contributing to poor compliance. This scale reports a reliability of 0.18 and a validity of 0.6.

3. Brief SCOPE

The Brief COPE (Carver, 1997) is a 28-item questionnaire used to evaluate coping strategies adopted by individuals in stressful situations. Each item is scored on a 4-point Likert scale ranging from 1 ("Not at all") to 4 ("A lot"). It assesses both effective (adaptive) and ineffective (maladaptive) coping mechanisms.

Coping Classification in This Study:

In the present research, the Brief COPE is adapted into two broader coping styles as per Eisenberg et al. (2012):

- **Approach (Adaptive) Coping** includes problem-solving, positive reframing, acceptance, planning, and seeking emotional or informational support.
    - Active Coping (Items 2, 7)
    - Positive Reframing (Items 12, 17)

- Planning (Items 14, 25)
- Acceptance (Items 20, 24)
- Emotional Support (Items 5, 15)
- Informational Support (Items 10, 23)

- **Avoidant (Maladaptive) Coping** includes denial, distraction, disengagement, substance use, venting, and self-blame.
  - Self-Distraction (Items 1, 19)
  - Denial (Items 3, 8)
  - Substance Use (Items 4, 11)
  - Behavioural Disengagement (Items 6, 16)
  - Venting (Items 9, 21)
  - Self-Blame (Items 13, 26)

Items related to **Humour (18, 28)** and **Religion (22, 27)** are categorized as neutral and not included in either adaptive or maladaptive coping.

Scoring Method:

- **Approach Coping Score:** Sum of scores from all approach items.
- **Avoidant Coping Score:** Sum of scores from all avoidant items.

A higher Approach Coping Score indicates adaptive coping, whereas a higher Avoidant Coping Score signifies maladaptive coping. In cases where scores are closely matched, further qualitative assessment or subgroup analysis may be necessary.

OBSERVATIONS AND RESULTS

The present cross-sectional study was carried out to assess the impact of depression on treatment compliance in patients with psoriasis, to ensure methodological transparency and validity, the final sample of 130 out of 185 patients who were approached during the study duration was selected based on defined inclusion and exclusion criteria. The following process justifies the selection were enrolled during 1st March, 2023 to 1st April, 2024.

Table 4- Patient Recruitment details

Stage	Number of Patients (N)	Cumulative Remaining
Patients Approached	185	185
Declined to Participate	25	160
Did Not Meet Inclusion Criteria	20	140
Incomplete Responses	10	130
Final Sample Size	130	130

Table 5: Distribution of study participants according to age

Age group (years)	Frequency (n=130)	Percentage (%)
≤ 20	15	11.5
21-40	59	45.4
41- 60	43	33.1
61-80	13	10
Total	130	100.0

The mean age of study participants (in years) was 38.07 ± 14.48 with a range of 18-70. Nearly half (45.4%) were between 21–40 years, about one-third (33.1%) were 41–60 years, and only 10% were above 60

Table 6: Distribution of study participants according to gender

Gender	Frequency (n=130)	Percentage (%)
Male	75	57.7
Female	55	42.3
Total	130	100.0

Out of 130 study participants, 75 (57.7%) were male and 55 (42.3%) were female (Fig.1).

Figure 1: Distribution of study participants according to gender

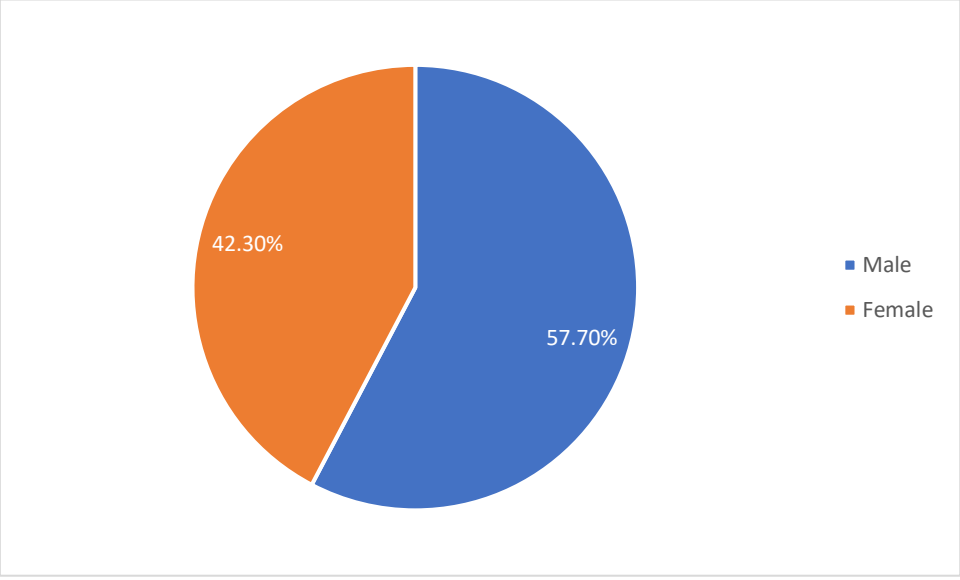


Table 7: Distribution of study participants according to religion

Religion	Frequency(n=130)	Percentage (%)
Hindu	113	86.9
OTHERS	17	13.1
Total	130	100.0

*others include Muslims, Jains and Buddhists.

Out of 130 study participants, 113 (86.9%) belonged to Hindu religion followed by 17 (13.1%) belonged to religion other than Hindu.

Table 8: Distribution of study participants according to marital status

Marital status	Frequency(n=130)	Percentage (%)
Married	93	71.5
Unmarried	37	28.5
Total	130	100.0

Out of 130 study participants, 93 (71.5%) were married while 37 (28.5%) were unmarried.

Table 9: Distribution of study participants according to education

Education	Frequency(n=130)	Percentage (%)
Illiterate	20	15.4
High School	71	54.6
Graduate	33	25.4
Post Graduate	6	4.6
Total	130	100.0

More than half (54.6%) of the participants had completed education up to high school, while one in four (25.4%) were graduates. A notable 15.4% were illiterate,. Only a small proportion (4.6%) had postgraduate education.

Table 10: Distribution of study participants according to comorbidities

Comorbidities		Frequency(n=130)	Percentage (%)
Yes*	Nicotine dependency	34	26.2
	Diabetes	22	16.9
	Obesity	21	16.2
	Hypertension	14	10.8
	Asthma	3	2.3
No		58	44.6

*Percentage more than 100 because of multiple responses in comorbidity present group

Among the 130 participants, 55.4% had at least one comorbidity, highlighting the high burden of associated medical conditions in psoriasis patients. Nicotine dependence was the most common (26.2%), Metabolic comorbidities were also prevalent, with diabetes (16.9%), obesity (16.2%), and hypertension (10.8%),. Asthma, was observed in 2.3% of cases. The remaining 44.6% had no comorbidities.

Table 11: Distribution of study participants according to phenotype of psoriasis

Phenotypes of psoriasis	**Frequency(n=130)**	**Percentage (%)**
Palmo plantar psoriasis	37	28.5
Chronic Plaque psoriasis	78	60.0
Scalp psoriasis	15	11.5
Total	130	100.0

Plaque psoriasis was the most common morphological phenotype, affecting about three in five (60%) participants. Around one-third (28.5%) had palmo-plantar psoriasis, while one in ten (11.5%) had scalp involvement

Table 12: Table 9: Depression Status Among Study Participants

Depression	**Frequency**	**Percentage (%)**
Yes	86	66.2
No	44	33.8

Among study participants, 86 (66.2%) had depression while 44 (33.8%) had no depression.

Table 13. Distribution of study participants according to severity of depression

Severity of depression	Frequency	Percentage (%)
Mild depression	40	46.5
Moderate depression	27	31.3
Moderately severe depression	13	15.1
Severe depression	6	6.9
Total	86	100.0

The table displays the severity distribution of depression among the 86 participants identified with depressive symptoms. Nearly half of the individuals (46.5%) had mild depression, while about one-third (31.3%) experienced moderate depression. Moderately severe depression was noted in around one in six participants (15.1%), and severe depression was seen in a small proportion (6.9%). These findings suggest that milder forms of depression were more commonly reported in this sample

Table 14: Distribution of study participants according to coping skills

Coping skills	**Frequency(n=130)**	**Percentage (%)**
Adaptive	80	61.5
Maladaptive	50	38.5
Total	130	100.0

Nearly two-thirds of participants (61.5%) used adaptive coping strategies, while about two in five (38.5%) relied on maladaptive coping. This suggests that a significant proportion of psoriasis patients may struggle with less effective coping mechanisms.

Table 15: Distribution of study participants according to depression and treatment adherence in patients with psoriasis

Depression	Treatment adherence n(%)			Total	p value
	High	Medium	Low		
Yes	29 (33.7)	35 (40.7)	22 (25.6)	86 (100.0)	0.000
No	26 (59.1)	17 (38.6)	1 (2.3)	44 (100.0)	
Total	55 (42.3)	52 (40.0)	23 (17.7)	130 (100.0)	

*Figures in parentheses denote percentages.

The above table shows distribution of study participants according to depression and treatment adherence in psoriasis patients. Among those with depression, around one third (33.7%) study participants had high treatment adherence followed by (40.7%) had medium treatment adherence followed by 22 (25.6%) had low treatment adherence. Among those without depression, 26 (59.1%) study participants had high treatment adherence followed by 17 (38.6%) had medium treatment adherence while only 1 (2.3%) had low treatment adherence. (Fig. 2).

Figure 2: Distribution of study participants according to depression and treatment adherence in patients with psoriasis

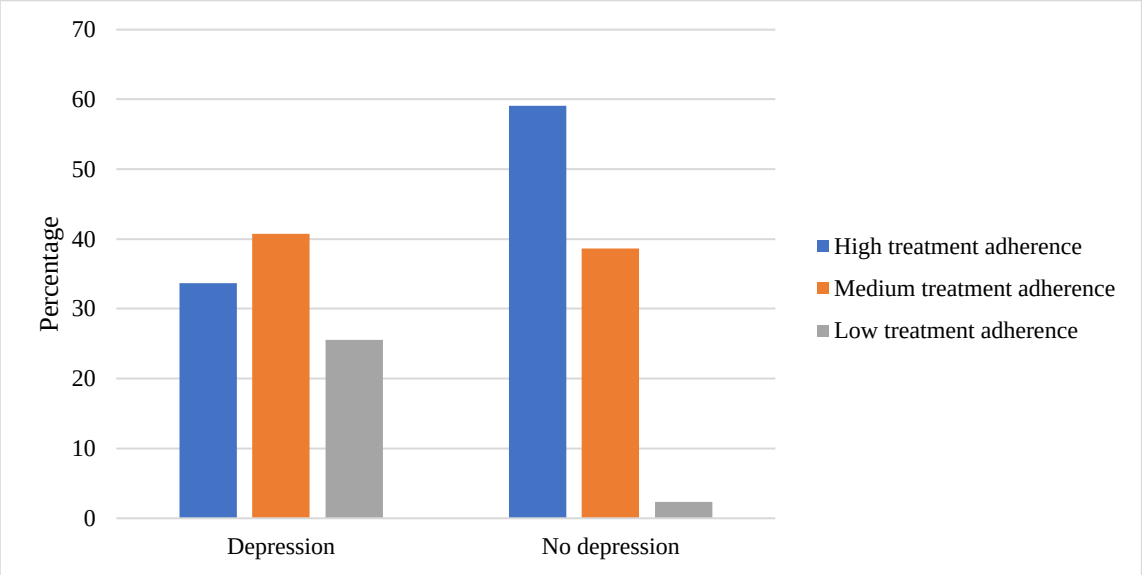


Table 16: Association between depression and treatment adherence in patients with psoriasis

Depression	Mean treatment adherence score	SD	t	Mean difference (CI)	p value
No Depression	1.43	0.545	-4.165	-0.487	0.000
Depression	1.92	0.770			

There was a significant positive correlation between depression and treatment adherence in psoriasis patients (r=0.485; p=0.000)). The mean treatment adherence score was significantly (p <0.05) higher for study participants with depression (1.92) compared to those without depression (1.43). This suggests that the presence of depression was associated with low adherence, as indicated by higher score.

Table 17: Correlation Between Depression and Treatment Adherence

	Adherence	**p value**
Depression	**Correlation coefficient r**=0.490	<0.001

A Spearman's rank correlation was conducted to assess the relationship between PHQ-9 scores and MGLS scores. Results indicated a moderate positive correlation ($\rho = 0.490$, $p < 0.001$), suggesting that higher depression severity is associated with poorer treatment adherence.

Figure 3- Relationship between PHQ-9 scores (Depression) and MGLS scores

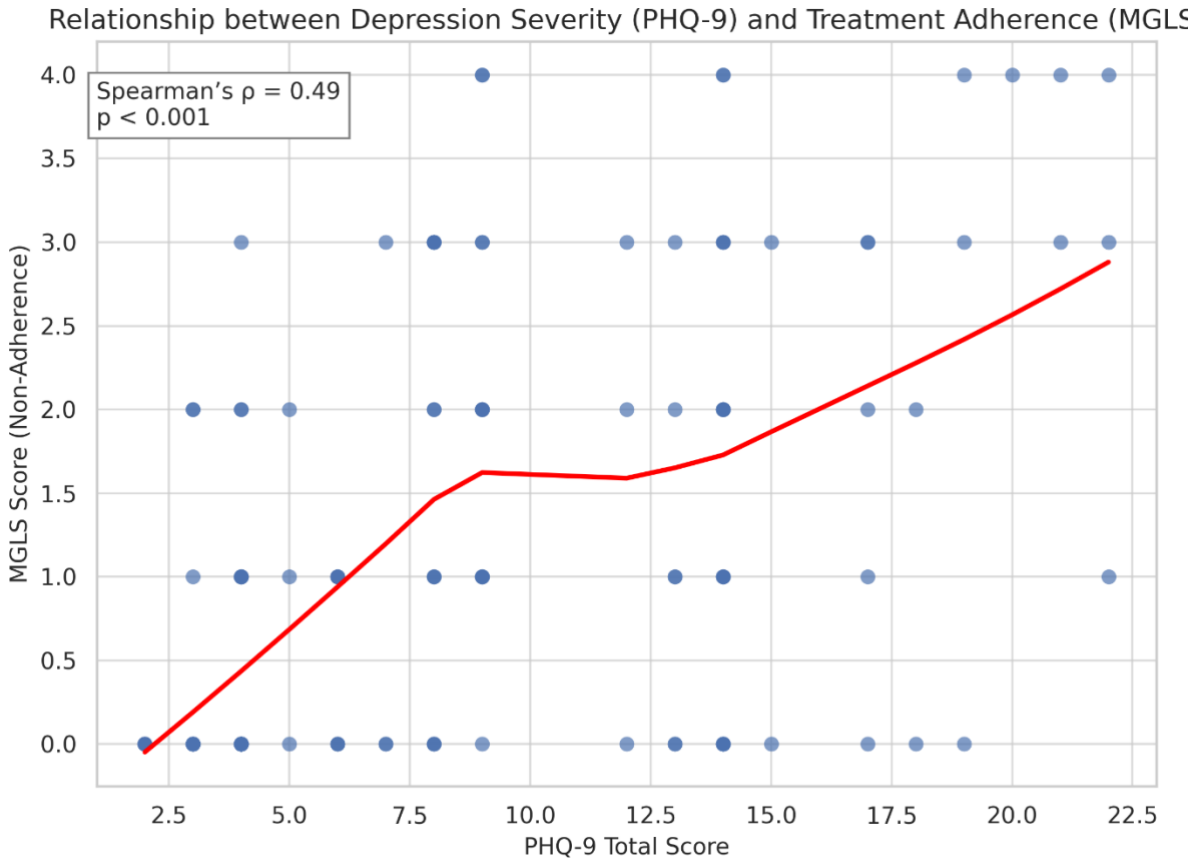


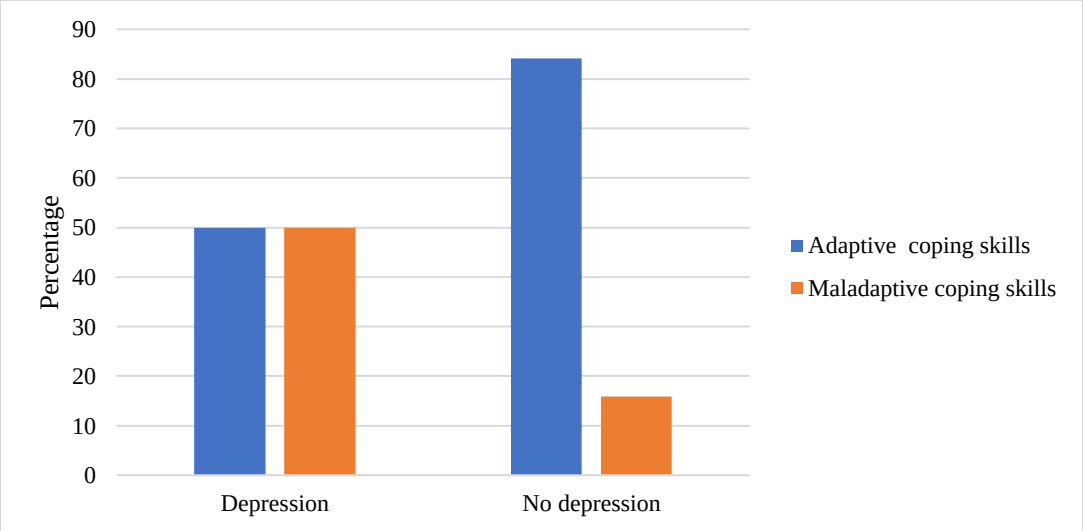
Table 18: Association between depression and Coping skills

Depression	Coping Skills		Total	χ^2 value; p value
	Adaptive	Maladaptive		
Present	43(50.0)	43(50.0)	86(100.0)	14.293; 0.000
Absent	37(84.1)	7(15.9)	44(100.0)	
Total	80(61.5)	50 (38.5)	130 (100.0)	

*Figures in parentheses denote row wise percentages.

The above table illustrates the association between depression and coping strategies. Participants with depression exhibited a noticeable inclination towards maladaptive coping strategies—half (50.0%) relied on maladaptive mechanisms, compared to a notably smaller proportion (15.9%) among those without depression. Conversely, adaptive coping skills were comparatively less prevalent in the depressed group (50.0%) than in the non-depressed group (84.1%). This observed tendency for depressed individuals to gravitate more toward maladaptive coping mechanisms was statistically significant ($\chi^2 = 14.293$, $p < 0.001$).

Figure 4: Association between depression and coping skills in patients with psoriasis



Secondary analysis

Table 19: Association between phenotypes of psoriasis and depression

Types of psoriasis	Depression		Total	χ^2 value; p value
	Yes	No		
Palmo plantar psoriasis	22(59.5)	15(40.5)	37 (100.0)	20.071; 0.000
Chronic Plaque psoriasis	61(78.2)	17(21.8)	78 (100.0)	
Scalp psoriasis	3(20.0)	12(80.0)	15 (100.0)	
Total	86(66.2)	44(33.8)	130 (100.0)	

*Figures in parentheses denote row wise percentages.

Depression was significantly associated with the type of psoriasis (p=0.000). It was most common in participants with plaque psoriasis, affecting about four in five (78.2%). In those with palmo-plantar psoriasis, nearly three in five (59.5%) had depression. In contrast, depression was much less frequent among those with scalp psoriasis, affecting only one in five (20%). These findings suggest that different psoriasis subtypes may have varying impacts on mental health.

Figure 5: Association between phenotype of psoriasis and depression

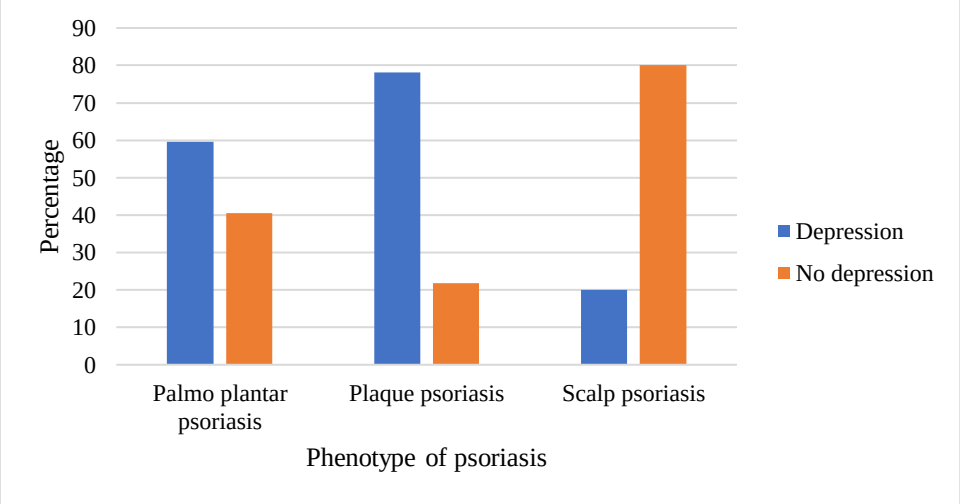


Table 20: Association between phenotypes of psoriasis and treatment adherence

psoriasis	Treatment adherence			Total	χ^2 value; p value
	High	Medium	Low		
Palmo plantar psoriasis	16(43.2)	18(48.6)	3(8.1)	37(100.0)	15.689; 0.003
Chronic Plaque psoriasis	27(34.6)	31(39.7)	20(25.6)	78(100.0)	
Scalp psoriasis	12(80.0)	3(20.0)	0(0.0)	15(100.0)	
Total	55(42.3)	52(40.0)	23(17.7)	130 (100.0)	

*Figures in parentheses denote row wise percentages.

The above table shows the association between types of psoriasis and treatment adherence. Among those with palmo-plantar psoriasis, over two-fifths (43.2%) had high adherence, nearly half (48.6%) had medium adherence, and only a small proportion (8.1%) had low adherence. Among those with plaque psoriasis, about a third (34.6%) had high adherence, nearly two-fifths (39.7%) had medium adherence, and about one in four (25.6%) had low adherence. In contrast, among those with scalp psoriasis, four out of five (80.0%) had high adherence, while the remaining one-fifth (20.0%) had medium adherence, with no cases of low adherence. This difference in treatment adherence across psoriasis types was statistically significant (χ^2 = 15.689, p = 0.003).

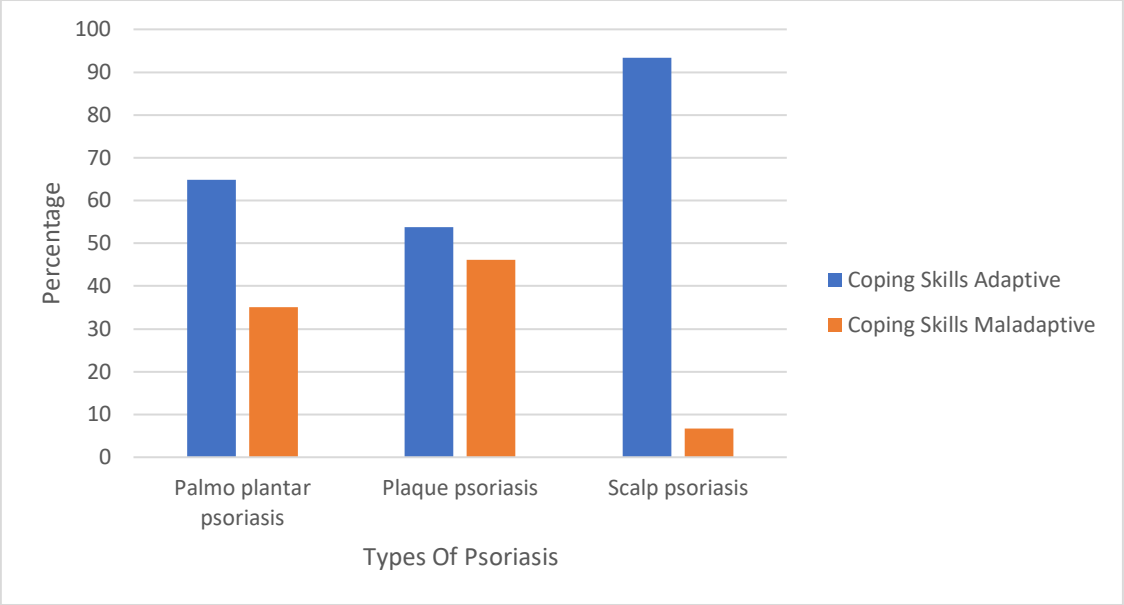
Table 21: Association between phenotype of psoriasis and Coping skills

Phenotypes of psoriasis	Coping Skills		Total	χ^2 value; p value
	Adaptive	Maladaptive		
Palmo plantar psoriasis	24(64.9)	13 (35.1)	37 (100.0)	8.530; 0.014
Chronic Plaque psoriasis	42 (53.8)	36(46.2)	78 (100.0)	
Scalp psoriasis	14 (93.3)	1(6.7)	15 (100.0)	
Total	80(61.5)	50 (38.5)	130 (100.0)	

*Figures in parentheses denote row wise percentages.

The above table shows the association between types of psoriasis and coping skills. Among participants with palmo-plantar psoriasis, nearly two-thirds (64.9%) used adaptive coping skills, while about a third (35.1%) relied on maladaptive coping skills. Among those with plaque psoriasis, slightly more than half (53.8%) had adaptive coping skills, while nearly half (46.2%) had maladaptive coping skills. In contrast, among participants with scalp psoriasis, a large majority (93.3%) used adaptive coping skills, while only a small proportion (6.7%) had maladaptive coping skills. This difference in coping skills across psoriasis types was statistically significant ($\chi^2 = 8.530$, $p = 0.014$).

Figure 6: Association between phenotype of psoriasis and Coping skills



DISCUSSION

Patients with psoriasis suffer from higher risk of having depression and the consequences of it. Many studies done previously have established the same. Our study has assessed not only the prevalence of depression in psoriasis patients but also the impact of depression on treatment compliance, and the coping mechanisms .

Demographic factors affecting depression in patients with psoriasis

In our study, we found most patients were young to middle-aged. Almost half (45.4%) fell between 21-40 years, with an average age around 38 years. Only about 10% were over 60, showing that most people developed psoriasis in their thirties or forties.

Other research from across India shows some variation in age patterns. A study from South India found psoriasis most commonly affected people between 30-40 years[95], which matches what we observed. However, another Indian tertiary care study reported more cases in the 50-60 year range (about 36%), followed by the 41-50 year group (roughly 23%)[96]. This suggests that in some populations, people seek treatment later in life. It's worth noting that psoriasis often shows two peak onset periods: one during young adulthood and another in middle age.This age distribution pattern remains fairly consistent across different regions in India, in another study done in India found slightly older patients, with most falling in the 50-60 year category (36.57%)[98].

Looking at global trends, psoriasis generally becomes more common with age, typically peaking in older adults. Worldwide data shows a left-skewed age distribution with highest prevalence between 60-70 years[97]. This likely happens because psoriasis is chronic, so cases accumulate over time. Researchers commonly recognize two onset types: Type I starting before approximately age 40, and Type II beginning after about age 40[95]. In Western countries, many

cases first appear in patients' twenties, similar to what we see in India, but the overall prevalence peaks in older age groups since the condition persists chronically[97].

Our study revealed a clear male predominance. Men accounted for about 57.7% of cases compared to 42.3% women, giving a male-to-female ratio of roughly 1.36:1.

This pattern aligns with other Indian research that consistently shows higher proportions of male patients. One study found men outnumbered women by about 2:1 (67.5% male versus 32.5% female)[96]. Another South Indian study simply highlighted that psoriasis affected more men than women. Throughout India, research typically indicates men are affected approximately twice as often as women[95]. This male predominance appears consistently across studies from various Indian regions, with male-to-female ratios ranging from 1.3:1 to 3:1[70-101-102]. Several factors might explain this difference: men may be more likely to seek dermatological treatment, while women might avoid reporting due to social stigma[81]. Additionally, environmental triggers more common in men, such as outdoor occupations or smoking habits, could play a role, though genetic susceptibility appears similar between genders.

Looking at global data, psoriasis shows a more balanced gender distribution. Large epidemiological studies have found that men and women are affected at roughly equal rates[97]. For example, a US survey reported psoriasis in 3.2% of women and 2.8% of men (a relatively small difference)[99]. While some incidence studies in Western populations occasionally show slight male predominance[100], worldwide the male-to-female ratio remains close to 1:1[97].

Our study found that more than half of psoriasis patients (55.4%) experienced at least one comorbidity, highlighting the significant burden of associated conditions. Nicotine dependence was most prevalent (26.2%), indicating high rates of smoking or tobacco use among these patients. Metabolic conditions were also common, with diabetes mellitus affecting about 16.9%

and obesity present in 16.2%, followed by hypertension in 10.8%. A smaller percentage (2.3%) had asthma. Notably, 44.6% of patients showed no comorbidities.

Research from across India similarly emphasizes metabolic and lifestyle-related comorbidities. One study identified diabetes mellitus as the most frequent comorbidity among psoriasis patients, with most being obese[95]. This study also reported considerable rates of hypertension, hypothyroidism, ischemic heart disease, alcoholism, and depression[95]. Another Indian analysis documented multiple concurrent conditions: hypertension in nearly half (48.2%), obesity in one-third (33.8%), diabetes in approximately 35.7%, dyslipidemia in 24.5%, and metabolic syndrome in 32% of patients. Depression was identified in about 13%[96]. These findings suggest that Indian psoriasis patients frequently present with components of metabolic syndrome (hypertension, obesity, dyslipidemia, diabetes) alongside psychiatric comorbidities. In one study, psoriatic arthritis, an inflammatory joint condition linked to psoriasis, was observed in roughly 10% of patients.

Chavhan et al[103] (2023) noted hypertension (22%), diabetes mellitus (19%), and obesity (13%); Nageswaramma et al[104] (2023)found diabetes mellitus (21%), hypertension (19%), and obesity (15%); while Kulkarni et al[105] (2017) reported diabetes mellitus (25%), hypertension (20%), and dyslipidemia (18%). Our current findings of diabetes mellitus (16.9%), hypertension (10.8%), and obesity (16.2%) align with this profile, though with relatively lower hypertension rates.

Our observation that over half of psoriasis patients (55.4%) had at least one comorbidity, most commonly nicotine dependence (26.2%), followed by diabetes mellitus (16.9%), obesity (16.2%), and hypertension (10.8%), corresponds with the global understanding of psoriasis as a systemic inflammatory disorder frequently linked with metabolic and behavioral comorbidities. Internationally, diabetes prevalence among psoriasis patients ranges from 15%

to 30%, hypertension from 20% to 40%, and obesity from 20% to 40%, with multiple meta-analyses confirming significantly increased risk for these conditions in psoriasis populations[107,108]. The somewhat lower rates of hypertension and obesity in our study might be attributed to a younger demographic (mean age ~38 years), regional lifestyle factors, or possible underdiagnosis.

Notably, depression affected 66.2% of our cohort—a much higher prevalence than most global estimates, which typically range between 30–50%[109,110]. This disparity may reflect cultural underreporting in global data, or use of mental health screening scales in our study. Overall, our findings reaffirm psoriasis as a disease with substantial systemic impact, mirroring international patterns while highlighting a particularly high burden of psychological distress.

In our study, the majority of patients presented with chronic plaque psoriasis (psoriasis vulgaris), accounting for about 60% of cases. The second most common form was palmo-plantar psoriasis (affecting palms and/or soles), seen in 28.5% of patients. A smaller group (around 11.5%) had scalp psoriasis as their predominant phenotype. We defined these categories based on the main sites where lesions appeared.

Research from India confirms the dominance of plaque-type psoriasis, with some variations in location-specific subtypes. One study found psoriasis vulgaris (chronic plaque) was the most common presentation, observed in about 65.7% of patients. Palmoplantar psoriasis ranked second (15.9%), followed by scalp psoriasis (9.7%). Less frequent variants were also documented: flexural (intertriginous) psoriasis (~1.1%), pustular psoriasis (0.4%), isolated nail psoriasis (0.8%), psoriatic arthritis type (~1.1%), and erythrodermic psoriasis (~3.5%)[96]. Another Indian study similarly reported that chronic plaque-type with trunk and limb involvement was most common (in over half of cases), followed by palmoplantar and scalp involvement. Guttate psoriasis (small droplet-shaped lesions, often following streptococcal

infection) was relatively uncommon in adult Indian cohorts. Overall, Indian data confirm plaque psoriasis as the primary phenotype, with palmar/plantar and scalp involvement as the next most frequent forms, while other types remain quite rare[96].

Globally, plaque psoriasis is also overwhelmingly the most prevalent type. It's commonly cited that plaque psoriasis represents about 80-90% of all psoriasis cases[111]. Other forms collectively make up the remaining 10-20%. For instance, guttate psoriasis is the next most common acute form (often seen in younger patients), while inverse (flexural) psoriasis, pustular, and erythrodermic psoriasis occur relatively infrequently. Many patients experience overlapping patterns (such as plaque psoriasis with some scalp involvement or nail changes). A U.S. study by Merola et al[112] (2016) specifically classified psoriasis phenotypes and found chronic plaque to be most common, with scalp psoriasis involvement in roughly 45-56% of cases and palmoplantar psoriasis in about 12-16%. These high percentages for scalp and palms indicate that many plaque psoriasis patients have lesions in these difficult-to-treat areas, even when they also have plaques elsewhere. Notably, nail psoriasis can occur with any subtype and affects up to ~50% of patients at some point, though isolated nail psoriasis is rare[96].

Prevalence of Depression in Psoriasis Patients

Our study identified clinically significant depression in 66.2% of psoriasis patients. This prevalence falls on the higher end compared to global reports, which have varied widely from as low as ~10% to as high as 60% depending on the population and assessment methods[113]. Many international studies report depression rates in psoriasis between 30-55%[114], though some have observed even higher figures in specialized settings.

Using a screening instrument (PHQ-9), we found that about two-thirds of participants (66.2%) experienced depressive symptoms .Nearly half of the individuals (46.5%) had mild depression, while about one-third (31.3%) experienced moderate depression. Moderately severe depression

was noted in around one in six participants (15.1%), and severe depression was seen in a small proportion (6.9%).

Earlier Indian research using strict clinical diagnostic criteria found relatively lower rates. For example, Mattoo et al. (2001) reported that approximately 24.7% of psoriasis patients had significant psychiatric morbidity by a screening test (GHQ), and about 7-8% were diagnosed with a depressive disorder (major depression or dysthymia) following psychiatric evaluation[115]. Many others had adjustment disorders related to disease-induced stress. In contrast, more recent Indian studies using self-reported questionnaires show much higher prevalence of depressive symptoms. A pilot study from Rajasthan found 86-90% of psoriasis patients had some level of depression or anxiety when assessed with standard scales (68% mild, 22% moderate-to-severe depression)[116]. Another cross-sectional study from Madhya Pradesh using PHQ-9 and other tools found 78.9% of psoriasis patients screened positive for depression[70].

These discrepancies (ranging from under 10% to over 70% across different studies) reflect variations in thresholds and definitions – not every patient with mild depressive symptoms would receive a clinical diagnosis of depression, but they will be considered in the screening tools such as PHQ9. Our finding of ~66% (with one-third being mild cases) aligns with studies that included mild forms of depression[116]. If we consider only moderate-to-severe depression as clinically significant, about one-third of our patients were affected, which remains substantial. A recent hospital-based Indian study using psychiatric interviews reported ~22% of psoriasis patients had diagnosable depressive episodes (and ~48% had some psychiatric disorder when including anxiety and others)[117]. Collectively, Indian data suggest that at least one in five psoriasis patients suffers from major depressive illness, and a much larger percentage (perhaps up to half) experience milder mood disturbances or stress-related disorders due to their skin condition.

Globally, the link between psoriasis and depression is well-established. The estimated prevalence of depression among psoriasis patients varies widely, but most analyses indicate it's substantially higher than in the general population. Reviews frequently cite a range of roughly 10% to 55% of psoriasis patients having some form of clinically significant depressive symptoms[118]. This wide range stems from differences in study populations (community vs. hospital patients) and depression measurement methods (screening questionnaires yield higher percentages than clinical interviews). For example, a U.S. population-based study (NHANES) found about 16.5% of psoriasis sufferers had major depressive disorder, compared to ~7-9% in people without psoriasis[119]. Similarly, a large Taiwanese claims database study reported 11.52% of psoriasis patients had a depression diagnosis, versus 7.73% in the general population, corresponding to an almost 1.5-fold higher risk[120]. Even this 11-16% prevalence for clinical depression is significant – it means roughly 1 in 8 psoriasis patients may have diagnosable major depression, which aligns with our hospital-based findings when focusing on the moderate-to-severe cases.

We also examined whether depression rates differed by the clinical type of psoriasis. The major subtypes represented in our sample were chronic plaque psoriasis, palmoplantar psoriasis, and scalp psoriasis. Our analysis indicated that patients with the classic plaque-type psoriasis had the highest prevalence of depression compared to those with predominantly palmoplantar or scalp involvement. In other words, individuals with widespread plaques on the trunk and limbs seemed more likely to be depressed in our cohort, whereas those with disease confined to the palms/soles or scalp showed somewhat lower rates. This finding could be influenced by disease extent – plaque psoriasis often covers larger and more visible surface areas, potentially causing greater self-consciousness and social avoidance, which fuel depression. It is also possible that many of our palmoplantar or scalp psoriasis patients had more localized disease and thus less overall life impact, though these limited subtypes can still be debilitating in specific ways.

The literature on depression in different psoriasis subtypes is not extensive, but there are some insights. Notably, involvement of certain critical sites (like the face, scalp, hands, and feet) can have an outsized psychosocial effect. For example, studies have found that palmoplantar psoriasis – even though it affects a limited body area – can significantly impair quality of life by causing pain, difficulty in walking or manual work, and social embarrassment. A U.S. study by Merola et al[112] (2016) reported that patients with palmoplantar psoriasis suffered greater health-related quality-of-life impairment than those with moderate-to-severe plaque psoriasis[121] These patients were more likely to report problems in mobility, self-care, and daily activities, and often required intensive topical treatments Similarly, scalp psoriasis (another "special site" variant) can lead to distress due to visible flaking and hair loss, and it tends to be recalcitrant. Indeed, a review noted that scalp and palmoplantar psoriasis are often more resistant to therapy and impose a burden disproportionate to their body surface area, with patients reporting greater physical and psychosocial impairment compared to conventional plaque lesions[122] This would suggest that one might expect higher depression or distress in those special-site subtypes. Interestingly, however, not all studies have found a clear-cut difference in psychological distress between psoriasis phenotypes. For instance, a survey of 579 patients in Spain found that while palm/sole involvement was linked to more physical disability, there was no significant difference in *psychological* distress or overall mental health scores between patients with palmoplantar psoriasis and those without it[122] . That study implies that all forms of psoriasis, when of equivalent severity, can be psychologically burdensome, and that depression may not strictly depend on the subtype but rather on factors like visibility, symptom severity (itch/pain), and individual coping.

Our finding of higher depression prevalence in plaque-type psoriasis may therefore reflect the greater average extent of disease in those patients (plaques often cover larger areas, including potentially visible regions), rather than an inherent effect of plaque morphology itself. It is also

possible that in our setting, patients with primarily palmoplantar or scalp psoriasis had milder disease or received more aggressive treatment early (since these subtypes prompt specific therapies), thereby mitigating some psychosocial impact. In any case, the key point is that all clinical variants of psoriasis carry a risk of depression. If anything, published data underscore that even "localized" variants like palmoplantar psoriasis can cause serious psychosocial strain (e.g. due to pain or inability to perform daily tasks)[122]. Thus, clinicians should be attentive to depression across all psoriasis phenotypes. Our results contribute to this discussion by suggesting that those with widespread plaque disease are a particularly at-risk group in our population. Further studies with larger samples of each subtype would be valuable to confirm whether any phenotype (site or morphology) has an independent association with depression, or if the observed differences dissipate after controlling for severity and visibility.

Impact of Depression on Treatment compliance in Psoriasis Patients

Our cross-sectional study revealed significant findings that align with recent research on other chronic conditions as very few studies were found which were done in India which studies impact of depression on treatment compliance of patients of psoriasis with depression. With 66.2% of our psoriasis cohort experiencing depression, our results reinforce the understanding that mental health comorbidities are prevalent across various chronic illnesses. The significant correlation we found ($r=0.490$, $p<0.001$) between depression severity and poor treatment adherence mirrors findings by Reddy et al.[71] (2021), who identified psychoeducation as crucial for adherence, and Ok et al.[73] (2022), who determined that depression reduced compliance in elderly patients with chronic diseases.

Furthermore, our examination of coping strategies revealed that 50% of depressed psoriasis patients employ maladaptive coping methods versus only 15.9% of non-depressed patients. This finding provides a potential mechanistic explanation for adherence difficulties that

supports and expands upon Kanakaraj et al.[75] (2024), who noted patterns of non-adherence in depressed versus non-depressed groups among HIV patients. The high rate of treatment discontinuation (25.6% among depressed psoriasis patients) parallels Khan et al.[77] (2024), who reported 64.3% of mental health patients discontinued treatment within a year.

The convergence of evidence across these diverse chronic conditions—from our psoriasis research to studies on psychiatric disorders, HIV, rheumatoid arthritis, and various chronic diseases in elderly populations—underscores the critical importance of integrating mental health assessment and intervention into chronic disease management protocols to improve treatment outcomes. Our findings particularly emphasize the need for dermatologists to screen for depression and implement strategies to promote adaptive coping mechanisms among psoriasis patients.

This research investigated the connection between symptoms of depression and medication adherence in psoriasis patients through established assessment tools—the PHQ-9 for measuring depression and the Morisky-Green-Levine Scale (MGLS) for evaluating adherence. A notable finding was the substantial negative relationship between depression intensity and treatment compliance. Individuals with elevated PHQ-9 scores demonstrated greater likelihood of poor adherence on the MGLS, with a moderate negative correlation ($r = –0.49$, $p < 0.001$). This trend indicates that increasing depressive symptoms correspond with declining ability or willingness to follow prescribed treatments.

Depression appears to undermine treatment adherence through a reciprocal mechanism. Mental distress can diminish motivation, attention, and consistent behaviors necessary for regular medication usage. Simultaneously, poor treatment compliance may lead to persistent or worsening skin manifestations, further compromising psychological wellness. This detrimental

cycle has been documented in previous investigations, where depression has been demonstrated to compromise treatment effectiveness, satisfaction, and continuation in dermatological disorders[127,128].

The interplay between depression and inadequate adherence was additionally influenced by the clinical presentation of psoriasis. Chronic plaque psoriasis, the predominant variant in this cohort, corresponded with the highest depression rates (78.2%) and lowest high-adherence percentages (~35%). In contrast, scalp psoriasis—a less visible and more confined form—exhibited the lowest depression frequency (20%) and greatest adherence (80%). Patients with palmoplantar psoriasis showed intermediate patterns. These associations were statistically meaningful ($p = 0.003$ for adherence variation across presentations), emphasizing how lesion location and visibility impact both emotional and behavioural treatment outcomes.

These results align with research suggesting that visible or stigmatizing lesions, particularly on exposed regions like the face, hands, or scalp (when symptomatic), correlate with increased psychological difficulties and reduced adherence[129,130]. Griffiths et al.(2007) have highlighted the significance of phenotype-based classification in comprehending disease burden[122]. Furthermore, subjective disease impact—beyond objective severity—has been shown to correlate more closely with psychiatric outcomes, highlighting the importance of patient-centered evaluations[131].

From a clinical perspective, these findings emphasize the necessity for systematic psychological assessment in psoriasis patients. Depression is both prevalent in this population and significantly affects treatment results. Dermatologists and primary care physicians managing psoriasis must be attentive to adherence barriers and incorporate concise instruments like the PHQ-9 during follow-up appointments[132]. Addressing depressive symptoms promptly may prevent treatment interruptions and enhance overall disease trajectory.

Additionally, simplifying treatment regimens, collaborative decision-making, and psychological education may improve adherence, particularly for patients struggling with motivation or hopelessness. In severe or resistant cases, partnership with mental health specialists may be necessary to optimize treatment response and quality of life.

The research results underscore that depression represents a substantial obstacle to treatment adherence in psoriasis patients. This relationship exists across phenotypes but is most evident in patients with chronic plaque psoriasis. Integration of mental health screening, supportive communication, and individualized adherence approaches is essential to disrupt the cycle of poor compliance and disease progression.

Coping Skills Among Psoriasis Patients with Depression

This investigation also examined how coping approaches differ between psoriasis patients with and without depression, and how these patterns may relate to overall psychological functioning and treatment behaviors. Coping mechanisms were categorized using the Brief COPE scale, grouped into adaptive (approach-oriented) and maladaptive (avoidant or emotion-focused) strategies, following the classification proposed by Eisenberg et al[133] .(2012)

Our analysis revealed a significant distinction in coping profiles between depressed and non-depressed participants. Among patients with depression (PHQ-9 ≥10), 50% demonstrated maladaptive coping as their primary approach, compared to only 15.9% in non-depressed patients, a statistically significant difference ($\chi^2 = 14.29$, $p < 0.001$). Conversely, adaptive coping strategies were employed by 84.1% of non-depressed patients, but only by 50% of those with depression. This marked contrast suggests that depression in psoriasis is closely associated with a shift toward less effective coping mechanisms.

These outcomes align with previous research highlighting the psychological vulnerability of individuals with chronic conditions who depend on maladaptive coping. Approaches such as

denial, venting, behavioural disengagement, and self-blame—common among our depressed participants—have been shown to correlate with poorer psychological outcomes and reduced adherence in chronic illness contexts[134]. In contrast, adaptive coping strategies—such as acceptance, planning, and active coping—foster resilience and engagement with treatment[135].

The utilization of maladaptive coping may also function as a mediator between depression and poor adherence in psoriasis patients. Depression frequently leads to cognitive avoidance, hopelessness, and emotional withdrawal, which can manifest as forgetfulness, lack of motivation, or deliberate noncompliance with treatment. This is supported by a systematic review which concluded that avoidant coping is consistently associated with lower treatment adherence, particularly in patients with comorbid depression[136].

Furthermore, alcohol and substance use, though not specifically quantified in our sample, are well-documented as maladaptive coping strategiesi in psoriasis and are associated with both worsened disease severity and increased psychiatric morbidity[137]. Such behaviors may temporarily alleviate emotional distress but often perpetuate a negative feedback loop of poor coping, increased disease burden, and reduced adherence.

From a psychosocial perspective, it is important to note that coping strategies are modifiable. Interventions such as Cognitive Behavioral Therapy (CBT), motivational interviewing, and psychoeducation have been shown to enhance adaptive coping and reduce reliance on avoidant mechanisms[138]. The Brief COPE can be used not only for assessment but also to guide intervention strategies tailored to individual patient profiles.

In clinical practice, screening for coping styles—especially in patients already exhibiting depressive symptoms—can inform risk stratification and intervention planning. Patients who primarily use maladaptive coping may benefit from additional psychological support, including stress management training and referral to mental health services. This may be particularly

beneficial in high-risk phenotypes such as chronic plaque psoriasis, where both depression and maladaptive coping are prevalent.

This study highlights a clear association between depression and maladaptive coping in psoriasis. Depressed patients are significantly more likely to rely on avoidant or unhelpful coping strategies, which may partially explain the reduced treatment adherence observed in this group. These findings underscore the importance of integrating coping style assessment into the management of psoriasis, particularly for those with comorbid psychiatric symptoms. Targeted psychological interventions aimed at enhancing adaptive coping could improve both mental health outcomes and treatment engagement in this population.

CONCLUSION

The investigation conducted in this specific field demonstrates that approximately two-thirds of people diagnosed with psoriasis simultaneously experience symptoms indicative of depression, thus revealing a significant association between these conditions that merits additional exploration.

Within the group of patients characterized by depressive symptoms, the degree of adherence to prescribed treatment protocols was markedly reduced, as evidenced by a pronounced negative correlation between depression severity and treatment compliance; as depressive symptoms intensified, there was a corresponding decline in patients' commitment to following their treatment regimens.

Psoriasis patients experiencing depression demonstrated a greater tendency to employ maladaptive coping mechanisms, which are typically less effective and potentially harmful, whereas their counterparts without depressive symptoms predominantly utilized adaptive coping strategies that are considered beneficial and constructive in managing their condition.

These significant observations emphasize the crucial necessity of incorporating comprehensive mental health assessments, evaluations of coping mechanisms, and interventions focused on improving treatment adherence within the holistic management protocols for psoriasis; by directly addressing depression and promoting adaptive coping strategies, there is considerable potential to enhance both treatment adherence rates and overall clinical outcomes related to the disease.

STRENGTHS OF THE STUDY

1. The investigation includes a larger sample size compared to many previous studies examining psoriasis and its psychological impact.
2. Validated assessment instruments were employed—PHQ-9 for depression, MGLS for adherence, and Brief COPE for coping styles.
3. No Indian studies have examined depression's impact on treatment adherence and coping in psoriasis, making this research relatively unique in the field.

LIMITATIONS OF THE STUDY

1. The investigation is cross-sectional, preventing the establishment of a causal relationship between depression and treatment adherence.
2. Self-reported questionnaires were utilized, potentially introducing recall bias.
3. Possible confounding variables were not analyzed, which might affect depression and adherence, including age, disease duration, gender, and other comorbidities
4. Findings cannot be generalized to all psoriasis variants.

SUMMARY

- This was a cross-sectional descriptive study conducted in KLE Dr Prabhakar Kore Hospital and Research Centre under the Department of Psychiatry, including 130 psoriasis patients
- Objectives of the study were to assess the impact of depression on treatment compliance in patients with psoriasis, and to assess the coping skills among patients of psoriasis with depression
- Our study revealed demographic characteristics with a mean participant age of 38.07 ± 14.48 years and a gender distribution of 57.7% male and 42.3% female. A substantial majority (66.2%) of participants exhibited depressive symptoms, varying severity levels: 46.5% had mild depression, 31.3% moderate depression, 15.1% moderately severe depression, and 6.9% severe depression.
- Depression significantly impacted treatment compliance, as evidenced by only 33.7% of depressed patients demonstrating high adherence compared to 59.1% of non-depressed patients. Similarly, 25.6% of depressed patients showed low adherence versus merely 2.3% of non-depressed patients, with statistical analysis confirming a significant positive correlation between depression and poor treatment adherence ($r=0.490$, $p<0.001$).
- Regarding coping strategies, half (50%) of depressed patients employed maladaptive coping mechanisms compared to only 15.9% of non-depressed patients ($p<0.001$), while adaptive coping strategies were predominantly observed in non-depressed patients (84.1%)

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ANNEXURE Ⅰ: CONSENT FROMS

INFORMED CONSENT

CONSENT FOR PARTICIPATION IN RESEARCH '"A CROSS SECTIONAL DESCRIPTIVE STUDY OF THE IMPACT OF DEPRESSION ON TREATMENT COMPLIANCE IN PATIENTS WITH PSORIASIS"

Principal Investigator: REG. NO. BQ0122005

Name of the participant-

Introduction and purpose of the study You are being asked to participate in an observational study by REG. NO BQ0122005 a postgraduate student in the Department of Psychiatry at Jawaharlal Nehru Medical College, KLE University, Belgaum, Karnataka, to investigate the impact of Depression on treatment compliance in patients with Psoriasis.

Explanation of procedure: After obtaining written informed consent from you, a short interview will be conducted, followed by an assessment by applying two scales that would help me in screening for depression and knowing about the treatment compliance of the patients.

Withdrawal from participation in the study: Participation in this study is voluntary. You will be free to decide whether to participate in this study or continue participating once enrolled. If you decide to withdraw your participation, you will be free to do so. Please convey your decision to the principal investigator.

Possible benefits of participating in the study: You will not get any benefit from participating in the study. The gathered data will help the population at large.

Possible risks from participating in the study: There are no risks associated with taking part in this research. If medical attention is required, it will be given without charge.

Privacy and confidentiality: Information collected from you will be coded to prevent any person from identifying you. Your identity has not been revealed. The data collected will be kept confidential, and only processed or aggregated data will be used for publication.

Financial incentives: You will not receive any payments for participating in this study.

The cost of investigations not applicable

Authorization for publication of aggregated data: The results obtained after processing the aggregated data will be published for scientific purposes or presented to scientific groups. However, your identity has not been revealed.

Legal rights: By signing this consent form, we are not waiving any of your legal rights.

Questions: In case of any questions with regard to this study, you are free to contact:

REG NO BQ0122005

Postgraduate, Department of Psychiatry, J.N. Medical College

KAHER, Belagavi-590010

If you have any questions about your rights or research participation, you may

contact Chairman ethical committee:

DR. HARSHA HEGDE

Chairperson,

Jawaharlal Nehru Medical College,

Ethical Committee for human research

Belagavi- 590010

Participant's name:

Sign/thumb print:

Investigators sign:

CONSENT STATEMENT

I am making a voluntary decision to participate in the study **"A CROSS-SECTIONAL DESCRIPTIVE STUDY OF THE IMPACT OF DEPRESSION ON TREATMENT COMPLIANCE IN PATIENTS WITH PSORIASIS**." My signature below indicates that I have decided to participate, and I have read the information provided above, or the information provided above has been read to me in a language that I understand best. I was given the opportunity to ask questions, and they were answered satisfactorily.

Name of the participant:

Signature or left-thumb impressions of the participant

Name of the witness:

Signature or left thumb impression of the witness:

Name of the investigator:

Signature of the investigator:

ಮಾಹಿತಿಯುಕ್ತ ಒಪ್ಪಿಗೆ

ಸಂಶೋಧನೆಯಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಿಗೆ "ಸೋರಿಯಾಸಿಸ್ ರೋಗಿಗಳಲ್ಲಿ ಖಿನ್ನತೆಯು ಚಿಕಿತ್ಸಾ ಅನುಸರಣೆಯ ಮೇಲೆ ಬೀರುವ ಪರಿಣಾಮದ ಒಂದು ಅಡ್ಡ-ಛೇದಿತ ವಿವರಣಾತ್ಮಕ ಅಧ್ಯಯನ"

ಪ್ರಧಾನ ಸಂಶೋಧಕ: ನೋಂದಣಿ ಸಂಖ್ಯೆ BQ0122005

ಭಾಗವಹಿಸುವವರ ಹೆಸರು-

ಅಧ್ಯಯನದ ಪರಿಚಯ ಮತ್ತು ಉದ್ದೇಶ: ನೋಂದಣಿ ಸಂಖ್ಯೆ BQ0122005, ಜವಾಹರಲಾಲ್ ನೆಹರು ಮೆಡಿಕಲ್ ಕಾಲೇಜು, ಕೆಎಲ್ಇ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ, ಕರ್ನಾಟಕದ ಮನೋವೈದ್ಯಕೀಯ ವಿಭಾಗದ ಸ್ನಾತಕೋತ್ತರ ವಿದ್ಯಾರ್ಥಿಯು ನಡೆಸುವ ನಿರೀಕ್ಷಣಾತ್ಮಕ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಿಮ್ಮನ್ನು ಕೇಳಲಾಗುತ್ತಿದೆ, ಇದರ ಉದ್ದೇಶವು ಸೋರಿಯಾಸಿಸ್ ರೋಗಿಗಳಲ್ಲಿ ಖಿನ್ನತೆಯು ಚಿಕಿತ್ಸಾ ಅನುಸರಣೆಯ ಮೇಲೆ ಬೀರುವ ಪರಿಣಾಮವನ್ನು ಅಧ್ಯಯನ ಮಾಡುವುದಾಗಿದೆ.

ಕಾರ್ಯವಿಧಾನದ ವಿವರಣೆ: ನಿಮ್ಮಿಂದ ಲಿಖಿತ ಮಾಹಿತಿಯುಕ್ತ ಒಪ್ಪಿಗೆಯನ್ನು ಪಡೆದ ನಂತರ, ಒಂದು ಸಂಕ್ಷಿಪ್ತ ಸಂದರ್ಶನವನ್ನು ನಡೆಸಲಾಗುವುದು, ನಂತರ ಎರಡು ಮಾಪಕಗಳನ್ನು ಅನ್ವಯಿಸುವ ಮೂಲಕ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದು, ಇದು ನನಗೆ ಖಿನ್ನತೆಯ ಸ್ಕ್ರೀನಿಂಗ್ ಮಾಡಲು ಮತ್ತು ರೋಗಿಗಳ ಚಿಕಿತ್ಸಾ ಅನುಸರಣೆಯ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ಸಹಾಯ ಮಾಡುತ್ತದೆ.

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವಿಕೆಯಿಂದ ಹಿಂದೆ ಸರಿಯುವುದು: ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವಿಕೆಯು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಬೇಕೆ ಅಥವಾ ಒಮ್ಮೆ ದಾಖಲಾದ ನಂತರ ಭಾಗವಹಿಸುವುದನ್ನು ಮುಂದುವರಿಸಬೇಕೆ ಎಂದು ನಿರ್ಧರಿಸಲು ನೀವು ಮುಕ್ತರಾಗಿರುತ್ತೀರಿ. ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯನ್ನು ಹಿಂಪಡೆಯಲು ನೀವು ನಿರ್ಧರಿಸಿದರೆ, ಹಾಗೆ ಮಾಡಲು ನೀವು ಮುಕ್ತರಾಗಿರುತ್ತೀರಿ. ದಯವಿಟ್ಟು ನಿಮ್ಮ ನಿರ್ಧಾರವನ್ನು ಪ್ರಧಾನ ಸಂಶೋಧಕರಿಗೆ ತಿಳಿಸಿ.

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವಿಕೆಯಿಂದ ಸಂಭಾವ್ಯ ಪ್ರಯೋಜನಗಳು: ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದರಿಂದ ನಿಮಗೆ ಯಾವುದೇ ಪ್ರಯೋಜನ ಸಿಗುವುದಿಲ್ಲ. ಸಂಗ್ರಹಿಸಿದ ಮಾಹಿತಿಯು ಸಾಮಾನ್ಯ ಜನಸಂಖ್ಯೆಗೆ ಸಹಾಯ ಮಾಡುತ್ತದೆ.

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವಿಕೆಯಿಂದ ಸಂಭಾವ್ಯ ಅಪಾಯಗಳು: ಈ ಸಂಶೋಧನೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಯಾವುದೇ ಅಪಾಯಗಳಿಲ್ಲ. ವೈದ್ಯಕೀಯ ಗಮನ ಅಗತ್ಯವಿದ್ದರೆ, ಅದನ್ನು ಉಚಿತವಾಗಿ ನೀಡಲಾಗುವುದು.

ಗೌಪ್ಯತೆ ಮತ್ತು ವಿಶ್ವಾಸಾರ್ಹತೆ: ನಿಮ್ಮಿಂದ ಸಂಗ್ರಹಿಸಲಾದ ಮಾಹಿತಿಯನ್ನು ಯಾವುದೇ ವ್ಯಕ್ತಿಯು ನಿಮ್ಮನ್ನು ಗುರುತಿಸುವುದನ್ನು ತಡೆಯಲು ಕೋಡ್ ಮಾಡಲಾಗುವುದು. ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಲಾಗಿಲ್ಲ. ಸಂಗ್ರಹಿಸಲಾದ ಮಾಹಿತಿಯನ್ನು ಗೌಪ್ಯವಾಗಿ ಇರಿಸಲಾಗುವುದು, ಮತ್ತು ಕೇವಲ ಸಂಸ್ಕರಿಸಿದ ಅಥವಾ ಒಟ್ಟುಗೂಡಿಸಿದ ಮಾಹಿತಿಯನ್ನು ಮಾತ್ರ ಪ್ರಕಟಣೆಗೆ ಬಳಸಲಾಗುವುದು.

ಆರ್ಥಿಕ ಪ್ರೋತ್ಸಾಹಧನಗಳು: ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಿದ್ದಕ್ಕಾಗಿ ನೀವು ಯಾವುದೇ ಪಾವತಿಗಳನ್ನು ಪಡೆಯುವುದಿಲ್ಲ.

ತನಿಖೆಗಳ ವೆಚ್ಚ: ಅನ್ವಯಿಸುವುದಿಲ್ಲ

ಒಟ್ಟುಗೂಡಿಸಿದ ಮಾಹಿತಿಯ ಪ್ರಕಟಣೆಗೆ ಅಧಿಕಾರ: ಒಟ್ಟುಗೂಡಿಸಿದ ಮಾಹಿತಿಯನ್ನು ಸಂಸ್ಕರಿಸಿದ ನಂತರ ಪಡೆದ ಫಲಿತಾಂಶಗಳನ್ನು ವೈಜ್ಞಾನಿಕ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಪ್ರಕಟಿಸಲಾಗುವುದು ಅಥವಾ ವೈಜ್ಞಾನಿಕ ಗುಂಪುಗಳಿಗೆ ಪ್ರಸ್ತುತಪಡಿಸಲಾಗುವುದು. ಆದಾಗ್ಯೂ, ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಲಾಗಿಲ್ಲ.

ಕಾನೂನು ಹಕ್ಕುಗಳು: ಈ ಒಪ್ಪಿಗೆ ನಮೂನೆಯಲ್ಲಿ ಸಹಿ ಮಾಡುವ ಮೂಲಕ, ನಾವು ನಿಮ್ಮ ಯಾವುದೇ ಕಾನೂನು ಹಕ್ಕುಗಳನ್ನು ತ್ಯಜಿಸುತ್ತಿಲ್ಲ.

ಪ್ರಶ್ನೆಗಳು: ಈ ಅಧ್ಯಯನಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳಿದ್ದರೆ, ನೀವು ಸಂಪರ್ಕಿಸಲು ಮುಕ್ತರಾಗಿದ್ದೀರಿ: ನೋಂದಣಿ ಸಂಖ್ಯೆ BQ0122005 ಸ್ನಾತಕೋತ್ತರ, ಮನೋವೈದ್ಯಕೀಯ ವಿಭಾಗ, ಜೆ.ಎನ್. ಮೆಡಿಕಲ್ ಕಾಲೇಜು KAHER, ಬೆಳಗಾವಿ-590010

ನಿಮ್ಮ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಅಥವಾ ಸಂಶೋಧನಾ ಭಾಗವಹಿಸುವಿಕೆಯ ಬಗ್ಗೆ ನಿಮಗೆ ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳಿದ್ದರೆ, ನೀತಿ ಸಮಿತಿಯ ಅಧ್ಯಕ್ಷರನ್ನು ಸಂಪರ್ಕಿಸಬಹುದು: ಡಾ. ಹರ್ಷ ಹೆಗಡೆ ಅಧ್ಯಕ್ಷರು, ಜವಾಹರಲಾಲ್ ನೆಹರು ಮೆಡಿಕಲ್ ಕಾಲೇಜು, ಮಾನವ ಸಂಶೋಧನೆಗಾಗಿ ನೈತಿಕ ಸಮಿತಿ ಬೆಳಗಾವಿ- 590010

ಭಾಗವಹಿಸುವವರ ಹೆಸರು: ಸಹಿ/ಹೆಬ್ಬೆಟ್ಟಿನ ಗುರುತು: ಸಂಶೋಧಕರ ಸಹಿ:

ಒಪ್ಪಿಗೆ ಹೇಳಿಕೆ

ನಾನು **"ಸೋರಿಯಾಸಿಸ್ ರೋಗಿಗಳಲ್ಲಿ ಖಿನ್ನತೆಯು ಚಿಕಿತ್ಸಾ ಅನುಸರಣೆಯ ಮೇಲೆ ಬೀರುವ ಪರಿಣಾಮದ ಒಂದು ಅಡ್ಡ-ಛೇದಿತ ವಿವರಣಾತ್ಮಕ ಅಧ್ಯಯನ"** ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಸ್ವಯಂಪ್ರೇರಿತ ನಿರ್ಧಾರ ತೆಗೆದುಕೊಳ್ಳುತ್ತಿದ್ದೇನೆ. ನನ್ನ ಕೆಳಗಿನ ಸಹಿಯು ನಾನು ಭಾಗವಹಿಸಲು ನಿರ್ಧರಿಸಿದ್ದೇನೆ ಎಂಬುದನ್ನು ಸೂಚಿಸುತ್ತದೆ, ಮತ್ತು ನಾನು ಮೇಲೆ ಒದಗಿಸಿದ ಮಾಹಿತಿಯನ್ನು ಓದಿದ್ದೇನೆ, ಅಥವಾ ಮೇಲೆ ಒದಗಿಸಿದ ಮಾಹಿತಿಯನ್ನು ನಾನು ಅತ್ಯುತ್ತಮವಾಗಿ ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವ ಭಾಷೆಯಲ್ಲಿ ನನಗೆ ಓದಿ ಹೇಳಲಾಗಿದೆ. ನನಗೆ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುವ ಅವಕಾಶ ಕೊಡಲಾಗಿತ್ತು, ಮತ್ತು ಅವುಗಳಿಗೆ ತೃಪ್ತಿಕರವಾಗಿ ಉತ್ತರಿಸಲಾಯಿತು.

ಭಾಗವಹಿಸುವವರ ಹೆಸರು:

ಭಾಗವಹಿಸುವವರ ಸಹಿ ಅಥವಾ ಎಡಗೈ ಹೆಬ್ಬೆಟ್ಟಿನ ಗುರುತು:

ಸಾಕ್ಷಿದಾರರ ಹೆಸರು:

ಸಾಕ್ಷಿದಾರರ ಸಹಿ ಅಥವಾ ಎಡಗೈ ಹೆಬ್ಬೆಟ್ಟಿನ ಗುರುತು:

ಸಂಶೋಧಕರ ಹೆಸರು: ಸಂಶೋಧಕರ ಸಹಿ:

माहितीपूर्ण संमती

संशोधनामध्ये सहभागी होण्यासाठी संमती "सोरिआसिस असलेल्या रुग्णांमध्ये नैराश्याचा उपचार अनुपालनावर होणारा प्रभाव यांचा एक छेदनी वर्णनात्मक अभ्यास"

प्रमुख संशोधक: नोंदणी क्रमांक BQ0122005

सहभागीचे नाव-

अभ्यासाची ओळख आणि उद्देश: आपल्याला नोंदणी क्रमांक BQ0122005, जवाहरलाल नेहरू मेडिकल कॉलेज, केएलई विद्यापीठ, बेळगाव, कर्नाटक येथील मनोचिकित्सा विभागातील पदव्युत्तर विद्यार्थी यांच्याद्वारे आयोजित केलेल्या निरीक्षणात्मक अभ्यासात सहभागी होण्यास विचारले जात आहे, ज्याचा उद्देश सोरिआसिस असलेल्या रुग्णांमध्ये नैराश्याचा उपचार अनुपालनावर होणारा प्रभाव अभ्यासणे आहे.

प्रक्रियेचे स्पष्टीकरण: आपल्याकडून लेखी माहितीपूर्ण संमती प्राप्त केल्यानंतर, एक लघु मुलाखत घेतली जाईल, त्यानंतर दोन स्केल्स लागू करून मूल्यांकन केले जाईल जे मला नैराश्याचे स्क्रीनिंग करण्यात आणि रुग्णांच्या उपचार अनुपालनाबद्दल जाणून घेण्यासाठी मदत करेल.

अभ्यासातील सहभागातून माघार घेणे: या अभ्यासात सहभाग स्वेच्छिक आहे. आपण या अभ्यासात सहभागी होण्याचा किंवा एकदा नोंदणी केल्यानंतर सहभागी राहण्याचा निर्णय घेण्यास मुक्त असाल. आपण आपला सहभाग मागे घेण्याचा निर्णय घेतल्यास, आपण असे करण्यास मुक्त असाल. कृपया आपला निर्णय प्रमुख संशोधकाला कळवावा.

अभ्यासात सहभागी होण्याचे संभाव्य फायदे: अभ्यासात सहभागी होऊन आपल्याला कोणताही फायदा मिळणार नाही. गोळा केलेला डेटा मोठ्या प्रमाणावर लोकसंख्येला मदत करेल.

अभ्यासात सहभागी होण्यापासून संभाव्य धोके: या संशोधनात भाग घेण्याशी संबंधित कोणतेही धोके नाहीत. वैद्यकीय लक्ष आवश्यक असल्यास, ते विनामूल्य दिले जाईल.

गोपनीयता आणि विश्वासार्हता: आपल्याकडून गोळा केलेल्या माहितीला कोडिंग केले जाईल जेणेकरून कोणत्याही व्यक्तीला आपली ओळख होणार नाही. आपली ओळख उघड केली गेली नाही. गोळा केलेला डेटा गोपनीय ठेवला जाईल, आणि केवळ प्रक्रिया केलेला किंवा एकत्रित डेटा प्रकाशनासाठी वापरला जाईल.

आर्थिक प्रोत्साहने: या अभ्यासात सहभागी होण्यासाठी आपल्याला कोणतेही पैसे मिळणार नाहीत.

तपासणीचा खर्च: लागू नाही

एकत्रित डेटाच्या प्रकाशनासाठी अधिकृतता: एकत्रित डेटावर प्रक्रिया केल्यानंतर मिळालेले निकाल वैज्ञानिक उद्देशांसाठी प्रकाशित केले जातील किंवा वैज्ञानिक गटांना सादर केले जातील. तथापि, आपली ओळख उघड केली गेली नाही.

कायदेशीर अधिकार: या संमती पत्रावर स्वाक्षरी करून, आम्ही आपले कोणतेही कायदेशीर अधिकार सोडत नाही.

प्रश्न: या अभ्यासाबद्दल कोणतेही प्रश्न असल्यास, आपण संपर्क करण्यास मुक्त आहात: नोंदणी क्रमांक BQ0122005 पदव्युत्तर, मनोचिकित्सा विभाग, जे.एन. मेडिकल कॉलेज KAHER, बेळगाव-590010

आपल्या अधिकारांबद्दल किंवा संशोधन सहभागाबद्दल आपल्याला कोणतेही प्रश्न असल्यास, आपण नैतिक समितीच्या अध्यक्षांशी संपर्क साधू शकता: डॉ. हर्षा हेगडे अध्यक्ष, जवाहरलाल नेहरू मेडिकल कॉलेज, मानवी संशोधनासाठी नैतिक समिती बेळगाव- 590010

सहभागीचे नाव: स्वाक्षरी/अंगठ्याचा ठसा: संशोधकाची स्वाक्षरी:

संमती विधान

मी **"सोरिआसिस असलेल्या रुग्णांमध्ये नैराश्याचा उपचार अनुपालनावर होणारा प्रभाव यांचा एक छेदनी वर्णनात्मक अभ्यास"** या अभ्यासात सहभागी होण्याचा स्वेच्छिक निर्णय घेत आहे. माझी खालील स्वाक्षरी दर्शवते की मी सहभागी होण्याचा निर्णय घेतला आहे, आणि मी वर दिलेली माहिती वाचली आहे, किंवा वर दिलेली माहिती मला मी सर्वोत्तम समजू शकेल अशा भाषेत वाचून दाखवली गेली आहे. मला प्रश्न विचारण्याची संधी दिली गेली, आणि त्यांना समाधानकारकपणे उत्तर दिले गेले.

सहभागीचे नाव:

सहभागीची स्वाक्षरी किंवा डाव्या अंगठ्याचा ठसा:

साक्षीदाराचे नाव:

साक्षीदाराची स्वाक्षरी किंवा डाव्या अंगठ्याचा ठसा:

संशोधकाचे नाव: संशोधकाची स्वाक्षरी:

सूचित सहमति

"सोरिआसिस वाले रोगियों में उपचार अनुपालन पर अवसाद के प्रभाव का एक अनुप्रस्थ काटने वाला वर्णनात्मक अध्ययन" में भागीदारी के लिए सहमति

प्रधान अन्वेषक: पंजीकरण संख्या BQ0122005

भागीदार का नाम-

अध्ययन का परिचय और उद्देश्य: आपसे पंजीकरण संख्या BQ0122005, जवाहरलाल नेहरू मेडिकल कॉलेज, केएलई विश्वविद्यालय, बेलगाम, कर्नाटक के मनोचिकित्सा विभाग में स्नातकोत्तर छात्र द्वारा आयोजित एक अवलोकन अध्ययन में भाग लेने के लिए कहा जा रहा है, जिसका उद्देश्य सोरिआसिस वाले रोगिओं में उपचार अनुपालन पर अवसाद के प्रभाव की जांच करना है।

प्रक्रिया का स्पष्टीकरण: आपसे लिखित सूचित सहमति प्राप्त करने के बाद, एक संक्षिप्त साक्षात्कार आयोजित किया जाएगा, उसके बाद दो पैमानों को लागू करके मूल्यांकन किया जाएगा जो मुझे अवसाद की जांच करने और रोगियों के उपचार अनुपालन के बारे में जानने में मदद करेंगे।

अध्ययन में भागीदारी से वापसी: इस अध्ययन में भागीदारी स्वैच्छिक है। आप इस अध्ययन में भाग लेने या एक बार नामांकित होने के बाद भाग लेना जारी रखने का निर्णय लेने के लिए स्वतंत्र होंगे। यदि आप अपनी भागीदारी वापस लेने का निर्णय लेते हैं, तो आप ऐसा करने के लिए स्वतंत्र होंगे। कृपया अपना निर्णय प्रधान अन्वेषक को बताएं।

अध्ययन में भाग लेने के संभावित लाभ: आपको अध्ययन में भाग लेने से कोई लाभ नहीं मिलेगा। एकत्रित डेटा बड़े पैमाने पर आबादी की मदद करेगा।

अध्ययन में भाग लेने से संभावित जोखिम: इस शोध में भाग लेने से जुड़े कोई जोखिम नहीं हैं। यदि चिकित्सा ध्यान की आवश्यकता होती है, तो यह बिना शुल्क के दिया जाएगा।

गोपनीयता और विश्वसनीयता: आपसे एकत्रित की गई जानकारी को कोड किया जाएगा ताकि कोई भी व्यक्ति आपकी पहचान न कर सके। आपकी पहचान प्रकट नहीं की गई है। एकत्रित डेटा को गोपनीय रखा जाएगा, और केवल संसाधित या समेकित डेटा को प्रकाशन के लिए उपयोग किया जाएगा।

वित्तीय प्रोत्साहन: आपको इस अध्ययन में भाग लेने के लिए कोई भुगतान नहीं मिलेगा।

जांच की लागत: लागू नहीं

समेकित डेटा के प्रकाशन के लिए प्राधिकरण: समेकित डेटा को संसाधित करने के बाद प्राप्त परिणामों को वैज्ञानिक उद्देश्यों के लिए प्रकाशित किया जाएगा या वैज्ञानिक समूहों को प्रस्तुत किया जाएगा। हालांकि, आपकी पहचान प्रकट नहीं की गई है।

कानूनी अधिकार: इस सहमति पत्र पर हस्ताक्षर करके, हम आपके किसी भी कानूनी अधिकार का त्याग नहीं कर रहे हैं।

प्रश्न: इस अध्ययन के संबंध में किसी भी प्रश्न के मामले में, आप संपर्क करने के लिए स्वतंत्र हैं: पंजीकरण संख्या BQ0122005 स्नातकोत्तर, मनोचिकित्सा विभाग, जे.एन. मेडिकल कॉलेज KAHER, बेलगावी-590010

यदि आपके अपने अधिकारों या शोध भागीदारी के बारे में कोई प्रश्न हैं, तो आप नैतिक समिति के अध्यक्ष से संपर्क कर सकते हैं: डॉ. हर्ष हेगड़े अध्यक्ष, जवाहरलाल नेहरू मेडिकल कॉलेज, मानव अनुसंधान के लिए नैतिक समिति बेलगावी- 590010

भागीदार का नाम: हस्ताक्षर/अंगूठे का निशान: अन्वेषक के हस्ताक्षर:

सहमति कथन

मैं **"सोरिआसिस वाले रोगियों में उपचार अनुपालन पर अवसाद के प्रभाव का एक अनुप्रस्थ काटने वाला वर्णनात्मक अध्ययन"** में भाग लेने का स्वैच्छिक निर्णय ले रहा/रही हूँ। मेरे नीचे के हस्ताक्षर से पता चलता है कि मैंने भाग लेने का निर्णय लिया है, और मैंने ऊपर दी गई जानकारी को पढ़ लिया है, या ऊपर दी गई जानकारी मुझे ऐसी भाषा में पढ़कर सुनाई गई है जिसे मैं सबसे अच्छी तरह से समझता/समझती हूँ। मुझे प्रश्न पूछने का अवसर दिया गया था, और उन्हें संतोषजनक ढंग से उत्तर दिया गया था।

भागीदार का नाम:

भागीदार के हस्ताक्षर या बाएं अंगूठे का निशान:

गवाह का नाम:

गवाह के हस्ताक्षर या बाएं अंगूठे का निशान:

अन्वेषक का नाम: अन्वेषक के हस्ताक्षर:

ANNEXURE Ⅱ: PROFORMA

DATA COLLECTION PROFORMA

A CROSS-SECTIONAL DESCRIPTIVE STUDY OF THE IMPACT OF DEPRESSION ON TREATMENT COMPLIANCE IN PATIENTS WITH PSORIASIS

Study ID Number: _____

Date of Assessment: _____

SECTION A: SOCIO-DEMOGRAPHIC DETAILS

1. **Age:** _____ years
2. **Gender:** □ Male □ Female
3. **Religion:** □ Hindu □ Muslim □ Christian □ Sikh □ Jain □ Buddhist □ Others (Specify): _____
4. **Marital Status:** □ Married □ Unmarried □ Divorced/Separated □ Widowed
5. **Education:** □ Illiterate □ High School □ Graduate □ Post Graduate

SECTION B: CLINICAL DETAILS - PSORIASIS

1. **Duration of Psoriasis:** _____ years _____ months
2. **Phenotype of Psoriasis:** _____
3. **Treatment :** _____
4. **Duration of Current Treatment:** _____ months

SECTION C: COMORBIDITIES

1. **Nicotine Dependency:** □ Yes □ No
2. **Diabetes Mellitus:** □ Yes □ No
3. **Obesity:** □ Yes □ No

4. **Hypertension:** □ Yes □ No
5. **Asthma:** □ Yes □ No
6. **Cardiovascular Disease:** □ Yes □ No
7. **Dyslipidemia:** □ Yes □ No
8. **Thyroid Disorders:** □ Yes □ No
9. **Other Comorbidities (Specify):** _____

SECTION D: DEPRESSION ASSESSMENT

Patient Health Questionnaire-9 (PHQ-9)

Depression Status: □ Present □ Absent

Depression Severity: □ None/Minimal depression (1-4) □ Mild depression (5-9) □ Moderate depression (10-14) □ Moderately severe depression (15-19) □ Severe depression (20-27)

SECTION E: TREATMENT ADHERENCE ASSESSMENT

Morisky Green Levine Scale (MGLS) [Full scale to be administered - scores range from 0-4]

Treatment Adherence Level: □ High compliance (Score 0) □ Medium compliance (Score 1-2) □ Low compliance (Score 3-4)

SECTION F: COPING SKILLS ASSESSMENT

Brief COPE Scale [Full scale to be administered - 28 items]

Approach (Adaptive) Coping Score: _____

Avoidant (Maladaptive) Coping Score: _____

Predominant Coping Strategy: □ Adaptive □ Maladaptive

SECTION G: EXAMINER'S NOTES

Observations: _____

Examined by: _____

Signature: _____

ANNEXURE Ⅲ: TOOLS

ATTACHMENT 1: PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Instructions: Over the last 2 weeks, how often have you been bothered by any of the following problems?

No.	Problem	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
1	Little interest or pleasure in doing things	□	□	□	□
2	Feeling down, depressed, or hopeless	□	□	□	□
3	Trouble falling or staying asleep, or sleeping too much	□	□	□	□
4	Feeling tired or having little energy	□	□	□	□
5	Poor appetite or overeating	□	□	□	□
6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	□	□	□	□
7	Trouble concentrating on things, such as reading the newspaper or watching television	□	□	□	□
8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	□	□	□	□

No.	Problem	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
9	Thoughts that you would be better off dead or of hurting yourself in some way	□	□	□	□

Total Score: _____ Depression Severity:

- None/Minimal depression (1-4)
- Mild depression (5-9)
- Moderate depression (10-14)
- Moderately severe depression (15-19)
- Severe depression (20-27)

ATTACHMENT 2: MORISKY GREEN LEVINE SCALE (MGLS)

Instructions: Please answer the following questions about your medication-taking behavior.

No.	Question	Yes (1)	No (0)
1	Do you ever forget to take your medicine?	□	□
2	Are you careless at times about taking your medicine?	□	□
3	When you feel better, do you sometimes stop taking your medicine?	□	□
4	Sometimes if you feel worse when you take the medicine, do you stop taking it?	□	□

Total Score: _____

Treatment Adherence Level:

- High compliance (Score 0)
- Medium compliance (Score 1-2)
- Low compliance (Score 3-4)

ATTACHMENT 3: BRIEF COPE SCALE by Brief COPE (Carver, 1997)

Instructions: These items deal with ways you've been coping with the stress in your life related to your psoriasis. There are many ways to try to deal with problems. These items ask what you've been doing to cope with this one. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

Response Scale: 1 = I haven't been doing this at all 2 = I've been doing this a little bit 3 = I've been doing this a medium amount 4 = I've been doing this a lot

No.	Item	1 2 3 4
1	I've been turning to work or other activities to take my mind off things	□ □ □ □
2	I've been concentrating my efforts on doing something about the situation I'm in	□ □ □ □
3	I've been saying to myself "this isn't real"	□ □ □ □
4	I've been using alcohol or other drugs to make myself feel better	□ □ □ □
5	I've been getting emotional support from others	□ □ □ □
6	I've been giving up trying to deal with it	□ □ □ □
7	I've been taking action to try to make the situation better	□ □ □ □
8	I've been refusing to believe that it has happened	□ □ □ □
9	I've been saying things to let my unpleasant feelings escape	□ □ □ □
10	I've been getting help and advice from other people	□ □ □ □
11	I've been using alcohol or other drugs to help me get through it	□ □ □ □

No.	Item	1	2	3	4
12	I've been trying to see it in a different light, to make it seem more positive	□	□	□	□
13	I've been criticizing myself	□	□	□	□
14	I've been trying to come up with a strategy about what to do	□	□	□	□
15	I've been getting comfort and understanding from someone	□	□	□	□
16	I've been giving up the attempt to cope	□	□	□	□
17	I've been looking for something good in what is happening	□	□	□	□
18	I've been making jokes about it	□	□	□	□
19	I've been doing something to think about it less, such as watching TV, reading, daydreaming, sleeping, or shopping	□	□	□	□
20	I've been accepting the reality of the fact that it has happened	□	□	□	□
21	I've been expressing my negative feelings	□	□	□	□
22	I've been trying to find comfort in my religion or spiritual beliefs	□	□	□	□
23	I've been trying to get advice or help from other people about what to do	□	□	□	□
24	I've been learning to live with it	□	□	□	□
25	I've been thinking hard about what steps to take	□	□	□	□
26	I've been blaming myself for things that happened	□	□	□	□
27	I've been praying or meditating	□	□	□	□
28	I've been making fun of the situation	□	□	□	□

Scoring:

As per Eisenberg et al. (2012)

Approach (Adaptive) Coping Items (2, 5, 7, 10, 12, 14, 15, 17, 20, 23, 24, 25) Total Score: _____

Avoidant (Maladaptive) Coping Items (1, 3, 4, 6, 8, 9, 11, 13, 16, 19, 21, 26) Total Score: _____

Religion Items (22, 27) Total Score: _____

Humor Items (18, 28) Total Score: _____

Predominant Coping Strategy: □ Adaptive (higher score on Approach items) □ Maladaptive (higher score on Avoidant items)

Serial No.	Gender	Age	Age Group	Relationshi	Religion	Education	omorbiditie	soriasis Typ	Duration
1	Male	35	31–50	Married	Hindu	High Schoc	Obesity	Plaque Pso	6
2	Male	37	31–50	Married	Hindu	Graduate	Diabetes	Plaque Pso	7
3	Male	18	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Palmo-plar	4.5
4	Male	27	18–30	Unmarried	Buddhist	High Schoc	Nicotine D	scalp Psori	3
5	Female	24	18–30	Unmarried	Hindu	High Schoc	Asthma	Scalp Psori	3.5
6	Male	38	31–50	Married	Hindu	Graduate	Diabetes, N	Plaque Pso	6
7	Male	42	31–50	Married	Hindu	Graduate	Diabetes, N	Plaque Pso	7
8	Female	58	51–70	Married	Hindu	Graduate	Hypertensi	Plaque Pso	16
9	Female	26	18–30	Unmarried	Hindu	High Schoc	Obesity	Scalp Psori	4
10	Male	49	31–50	Married	Hindu	Graduate	Nicotine D	Plaque Pso	5.5
11	Female	54	51–70	Married	Hindu	High Schoc	Hypertensi	Plaque Pso	20
12	Male	48	31–50	Married	Hindu	Graduate	Nicotine D	Plaque Pso	10
13	Male	28	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Palmo-plar	4.5
14	Male	25	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Palmo-plar	2
15	Female	26	18–30	Unmarried	Hindu	High Schoc	None	Scalp Psori	3.5
16	Female	21	18–30	Unmarried	Hindu	High Schoc	None	Scalp Psori	4
17	Male	26	18–30	Unmarried	Hindu	Graduate	Obesity	Plaque Pso	3.5
18	Female	35	31–50	Married	Hindu	High Schoc	Diabetes, C	Palmo-plar	7.5
19	Female	21	18–30	Unmarried	Hindu	High Schoc	Asthma	Scalp Psori	4
20	Female	40	31–50	Married	Hindu	High Schoc	Obesity	Plaque Pso	9
21	Male	29	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Palmo-plar	5
22	Male	27	18–30	Unmarried	Hindu	Graduate	None	Palmo-plar	1
23	Female	19	18–30	Unmarried	Hindu	Graduate	None	Scalp Psori	4.5
24	Male	26	18–30	Married	Hindu	Graduate	Nicotine D	Palmo-plar	3
25	Female	59	51–70	Married	Hindu	Graduate	Hypertensi	Plaque Pso	25
26	Male	42	31–50	Married	Hindu	Graduate	Nicotine D	Plaque Pso	9
27	Male	35	31–50	Married	Hindu	High Schoc	Diabetes	Plaque Pso	9
28	Female	32	31–50	Unmarried	Hindu	High Schoc	Diabetes	Plaque Pso	7
29	Male	44	31–50	Married	Hindu	Illiterate	Nicotine D	Plaque Pso	8.25
30	Male	27	18–30	Married	Muslim	Illiterate	None	Palmo-plar	4
31	Male	25	18–30	Married	Hindu	High Schoc	None	Palmo-plar	4
32	Male	44	31–50	Married	Muslim	High Schoc	Obesity	Plaque Pso	9
33	Male	47	31–50	Married	Hindu	Illiterate	Diabetes, N	Plaque Pso	7
34	Male	30	18–30	Married	Hindu	Postgradua	Nicotine D	Palmo-plar	4.5
35	Male	35	31–50	Married	Muslim	High Schoc	Nicotine D	Plaque Pso	9.5
36	Female	52	51–70	Married	Hindu	Illiterate	Hypertensi	Plaque Pso	18
37	Female	49	31–50	Married	Hindu	High Schoc	Diabetes	Plaque Pso	7
38	Male	18	18–30	Unmarried	Hindu	Graduate	Nicotine D	Palmo-plar	4
39	Female	46	31–50	Married	Hindu	Graduate	Obesity	Plaque Pso	8
40	Male	20	18–30	Unmarried	Hindu	Illiterate	Nicotine D	Palmo-plar	3.5
41	Male	38	31–50	Married	Hindu	High Schoc	Diabetes	Plaque Pso	6.5
42	Male	38	31–50	Married	Hindu	Graduate	Diabetes	Plaque Pso	6
43	Female	18	18–30	Married	Hindu	High Schoc	None	Scalp Psori	2
44	Male	48	31–50	Married	Hindu	Graduate	Nicotine D	Plaque Pso	9
45	Male	22	18–30	Married	Hindu	High Schoc	Nicotine D	Palmo-plar	4
46	Female	56	51–70	Married	Hindu	High Schoc	Hypertensi	Plaque Pso	25

47	Male	18	18–30	Married	Hindu	High Schoc	None	Palmo-plar	4
48	Male	34	31–50	Married	Hindu	Graduate	Diabetes	Plaque Pso	8
49	Male	42	31–50	Married	Hindu	Graduate	Nicotine D	Plaque Pso	8
50	Male	28	18–30	Married	Hindu	High Schoc	Nicotine D	Palmo-plar	4
51	Female	55	51–70	Married	Hindu	Graduate	Hypertensi	Plaque Pso	19
52	Male	46	31–50	Married	Hindu	Illiterate	Diabetes, N	Plaque Pso	7
53	Female	53	51–70	Married	Hindu	Illiterate	None	Plaque Pso	20
54	Female	29	18–30	Married	Hindu	Graduate	None	Scalp Psori	4
55	Male	42	31–50	Married	Jain	Postgradua	None	Plaque Pso	7
56	Male	21	18–30	Unmarried	Hindu	Graduate	Nicotine D	Palmo-plar	4
57	Male	34	31–50	Married	Hindu	Graduate	Diabetes, C	Plaque Pso	8
58	Male	36	31–50	Married	Hindu	Graduate	Obesity	Plaque Pso	9
59	Male	26	18–30	Married	Hindu	Illiterate	None	Palmo-plar	3.5
60	Male	31	31–50	Married	Muslim	High Schoc	None	Plaque Pso	9
61	Male	40	31–50	Married	Hindu	High Schoc	None	Plaque Pso	7
62	Male	30	18–30	Married	Muslim	High Schoc	Obesity	Palmo-plar	4
63	Female	59	51–70	Married	Hindu	High Schoc	Hypertensi	Plaque Pso	16
64	Male	26	18–30	Unmarried	Hindu	Graduate	None	Palmo-plar	4
65	Female	46	31–50	Married	Hindu	Illiterate	Diabetes	Plaque Pso	8
66	Male	24	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Palmo-plar	4
67	Male	20	18–30	Unmarried	Hindu	Postgradua	None	Palmo-plar	4
68	Female	43	31–50	Married	Hindu	High Schoc	None	Plaque Pso	9
69	Female	57	51–70	Married	Muslim	High Schoc	None	Plaque Pso	18
70	Female	21	18–30	Unmarried	Hindu	High Schoc	None	Scalp Psori	1
71	Male	20	18–30	Unmarried	Hindu	High Schoc	None	Palmo-plar	4
72	Male	30	18–30	Married	Hindu	Graduate	None	Palmo-plar	4
73	Female	67	51–70	Married	Hindu	High Schoc	Hypertensi	Plaque Pso	22
74	Male	18	18–30	Unmarried	Hindu	High Schoc	None	Palmo-plar	4
75	Male	21	18–30	Married	Sikh	High Schoc	None	Palmo-plar	4
76	Male	43	31–50	Married	Muslim	High Schoc	Diabetes, N	Plaque Pso	6
77	Male	45	31–50	Married	Hindu	High Schoc	Nicotine D	Plaque Pso	6
78	Female	63	51–70	Married	Muslim	High Schoc	None	Plaque Pso	28
79	Male	25	18–30	Married	Muslim	Illiterate	None	Palmo-plar	4
80	Female	50	31–50	Married	Muslim	High Schoc	None	Plaque Pso	9
81	Female	51	51–70	Married	Hindu	Illiterate	Hypertensi	Plaque Pso	20
82	Female	19	18–30	Unmarried	Hindu	High Schoc	None	Scalp Psori	4
83	Female	38	31–50	Married	Hindu	High Schoc	None	Plaque Pso	8
84	Male	43	31–50	Married	Hindu	Graduate	Nicotine D	Plaque Pso	8
85	Female	29	18–30	Married	Muslim	High Schoc	None	palmo-plar	3
86	Male	45	31–50	Married	Hindu	High Schoc	Diabetes, N	Plaque Pso	9
87	Female	25	18–30	Unmarried	Hindu	Graduate	None	Scalp Psori	4.5
88	Male	46	31–50	Married	Hindu	High Schoc	None	Plaque Pso	5.5
89	Female	70	51–70	Married	Hindu	Postgradua	None	Plaque Pso	30
90	Female	42	31–50	Married	Hindu	Postgradua	None	Plaque Pso	9.5
91	Female	63	51–70	Married	Hindu	Postgradua	None	Plaque Pso	30
92	Female	65	51–70	Married	Muslim	High Schoc	Hypertensi	Plaque Pso	32
93	Male	40	31–50	Married	Hindu	High Schoc	Obesity	Plaque Pso	9.5

94	Male	21	18–30	Unmarried	Buddhist	High Schoc	None	Palmo-plar	3.5
95	Female	49	31–50	Married	Hindu	High Schoc	None	Plaque Pso	6.25
96	Male	36	31–50	Married	Hindu	Illiterate	Nicotine D	Plaque Pso	7
97	Female	40	31–50	Married	Hindu	High Schoc	None	Plaque Pso	9
98	Female	67	51–70	Married	Hindu	Illiterate	Hypertensi	Plaque Pso	29
99	Male	47	31–50	Married	Hindu	Illiterate	None	Plaque Pso	9.5
100	Female	37	31–50	Married	Hindu	High Schoc	Diabetes	Plaque Pso	7
101	Male	18	18–30	Unmarried	Hindu	Illiterate	None	Palmo-plar	3.5
102	Female	20	18–30	Unmarried	Muslim	Illiterate	None	Scalp Psori	4
103	Male	44	31–50	Married	Hindu	High Schoc	None	Plaque Pso	6
104	Male	42	31–50	Married	Hindu	Graduate	Obesity	Plaque Pso	9
105	Female	67	51–70	Married	Hindu	Graduate	None	Plaque Pso	35
106	Male	41	31–50	Married	Hindu	High Schoc	None	Plaque Pso	7
107	Male	41	31–50	Married	Hindu	Graduate	None	Palmo-plar	8.5
108	Female	61	51–70	Married	Muslim	Illiterate	Hypertensi	Plaque Pso	15
109	Female	67	51–70	Married	Hindu	High Schoc	Hypertensi	Plaque Pso	25
110	Male	20	18–30	Unmarried	Hindu	High Schoc	None	Plaque Pso	4
111	Male	50	31–50	Married	Hindu	High Schoc	Diabetes, N	Palmo-plar	6
112	Male	28	18–30	Unmarried	Hindu	Graduate	None	Plaque Pso	3.5
113	Female	21	18–30	Unmarried	Hindu	High Schoc	None	Scalp Psori	1
114	Male	20	18–30	Unmarried	Hindu	Illiterate	None	Palmo-plar	4
115	Female	62	51–70	Married	Hindu	High Schoc	Hypertensi	Plaque Pso	11
116	Female	21	18–30	Married	Hindu	High Schoc	None	Scalp Psori	4
117	Female	34	31–50	Married	Hindu	High Schoc	None	Plaque Pso	6.5
118	Female	60	51–70	Married	Hindu	High Schoc	None	Plaque Pso	7
119	Male	38	31–50	Unmarried	Hindu	High Schoc	Nicotine D	Plaque Pso	8
120	Female	42	31–50	Married	Hindu	High Schoc	None	Plaque Pso	6
121	Female	44	31–50	Married	Jain	High Schoc	None	Plaque Pso	7
122	Female	63	51–70	Married	Hindu	High Schoc	None	Plaque Pso	27
123	Female	30	18–30	Married	Hindu	Illiterate	Asthma	Palmo-plar	4
124	Male	26	18–30	Unmarried	Hindu	Graduate	None	Palmo-plar	4
125	Male	27	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Plaque Pso	4.75
126	Male	18	18–30	Unmarried	Hindu	Illiterate	Nicotine D	Plaque Pso	3.3
127	Female	67	51–70	Married	Hindu	High Schoc	None	Plaque Pso	20
128	Male	30	18–30	Unmarried	Hindu	High Schoc	Nicotine D	Palmo-plar	3.5
129	Male	53	51–70	Married	Muslim	High Schoc	None	Palmo-plar	15
130	Male	60	51–70	Married	Hindu	Graduate	None	Palmo-plar	21

riasis Durat	PHQ9_Q1	PHQ9_Q2	PHQ9_Q3	PHQ9_Q4	PHQ9_Q5	PHQ9_Q6	PHQ9_Q7	PHQ9_Q8	PHQ9_Q9
5–10 years	0	1	0	0	0	1	0	1	1
5–10 years	0	0	0	0	0	1	0	1	1
3–5 years	1	0	1	0	0	0	1	0	1
3–5 years	1	0	1	0	1	0	1	1	1
3–5 years	1	0	0	1	1	0	0	0	1
5–10 years	0	1	0	1	0	1	0	0	1
5–10 years	1	1	0	1	1	1	0	0	1
>10 years	1	1	1	1	1	1	1	1	1
3–5 years	0	1	1	0	1	0	0	1	0
5–10 years	0	1	1	1	1	1	0	1	0
>10 years	0	1	1	1	1	1	1	1	1
5–10 years	0	1	1	1	2	2	2	2	3
3–5 years	1	1	1	0	0	0	0	0	1
<3 years	0	0	0	1	1	0	1	0	1
3–5 years	0	0	0	0	1	0	1	1	1
3–5 years	1	0	1	0	0	1	1	0	1
3–5 years	0	0	0	0	1	1	1	0	1
5–10 years	2	2	2	2	2	2	2	2	1
3–5 years	1	1	1	0	1	1	0	1	1
5–10 years	0	1	0	1	1	1	0	1	1
3–5 years	0	1	0	1	1	0	1	0	0
<3 years	0	1	1	1	1	0	1	0	1
3–5 years	0	0	1	0	1	1	0	1	0
3–5 years	0	0	0	1	0	0	0	1	1
>10 years	2	3	2	2	2	2	2	2	2
5–10 years	1	0	1	1	1	1	0	0	1
5–10 years	1	1	1	1	2	1	2	2	3
5–10 years	0	0	1	1	0	0	1	1	0
5–10 years	1	0	0	1	1	1	0	0	1
3–5 years	1	0	0	0	1	0	1	0	0
3–5 years	1	0	0	0	0	1	0	0	0
5–10 years	1	1	1	0	1	0	1	0	3
5–10 years	1	1	1	1	1	1	1	1	1
3–5 years	1	0	1	1	0	0	1	0	0
5–10 years	0	0	0	1	1	1	1	0	0
>10 years	1	1	1	1	1	1	1	1	1
5–10 years	1	1	1	1	1	1	0	0	3
3–5 years	1	0	0	1	1	0	0	1	0
5–10 years	0	1	1	1	0	1	0	0	0
3–5 years	1	1	1	1	0	1	0	0	3
5–10 years	0	0	1	0	0	1	0	1	1
5–10 years	1	0	1	1	0	1	1	0	3
<3 years	1	0	0	1	1	0	0	1	0
5–10 years	0	1	1	0	0	0	0	1	1
3–5 years	1	1	0	1	0	1	1	0	3
>10 years	1	1	1	1	1	1	1	1	1

3–5 years	1	0	0	1	1	1	1	1	3
5–10 years	0	1	0	1	0	0	1	0	0
5–10 years	0	0	1	0	0	0	1	0	0
3–5 years	1	1	0	1	1	0	0	0	0
>10 years	1	0	1	1	1	1	1	1	1
5–10 years	1	0	0	0	1	0	0	1	1
>10 years	1	1	1	1	1	1	0	0	1
3–5 years	1	0	0	0	0	0	1	1	0
5–10 years	0	1	1	1	1	1	0	0	3
3–5 years	1	1	0	1	1	1	0	0	1
5–10 years	0	1	0	1	0	0	1	1	1
5–10 years	1	1	1	2	2	2	2	2	1
3–5 years	1	0	1	0	0	0	0	0	1
5–10 years	1	0	0	0	0	1	1	0	1
5–10 years	0	0	0	0	1	0	0	1	0
3–5 years	0	0	1	1	1	1	0	1	3
>10 years	1	1	1	1	1	1	1	0	1
3–5 years	2	2	1	2	2	2	2	1	3
5–10 years	1	0	1	1	0	1	1	0	3
3–5 years	1	1	1	0	0	0	0	0	0
3–5 years	0	0	0	1	0	1	0	1	1
5–10 years	1	1	0	0	1	0	0	1	0
>10 years	1	1	1	1	1	1	1	1	1
<3 years	1	0	0	1	0	1	0	1	0
3–5 years	1	1	1	1	0	0	0	0	3
3–5 years	1	1	0	1	0	1	1	1	3
>10 years	1	1	1	1	1	1	1	1	1
3–5 years	0	0	1	1	1	0	0	0	1
3–5 years	1	2	2	1	2	2	2	2	3
5–10 years	1	2	1	0	0	0	2	1	1
5–10 years	0	0	1	1	0	0	1	0	0
>10 years	1	1	1	1	1	1	0	2	1
3–5 years	0	0	0	0	0	1	1	1	0
5–10 years	2	2	1	2	2	2	2	2	3
>10 years	2	0	1	1	1	1	1	1	1
3–5 years	1	0	0	1	0	1	0	1	0
5–10 years	1	0	0	1	0	1	1	0	0
5–10 years	2	2	1	1	1	2	2	2	1
3–5 years	1	1	1	1	1	0	1	0	3
5–10 years	1	1	1	2	1	2	1	2	3
3–5 years	0	0	0	0	0	1	0	0	1
5–10 years	1	2	2	1	2	1	1	2	1
>10 years	1	0	1	1	1	1	1	1	1
5–10 years	2	2	2	2	1	1	1	2	1
>10 years	0	1	1	1	1	1	1	1	1
>10 years	1	1	1	1	1	1	1	1	1
5–10 years	1	2	1	1	2	1	2	1	3

3–5 years	2	2	2	1	2	2	2	2	3
5–10 years	1	2	1	2	1	2	1	1	3
5–10 years	2	2	1	1	2	2	1	2	1
5–10 years	2	1	1	2	1	1	2	1	2
>10 years	1	1	1	1	1	1	1	1	1
5–10 years	2	1	1	1	1	2	2	2	3
5–10 years	1	2	2	2	2	1	2	1	1
3–5 years	1	1	1	1	1	1	1	2	3
3–5 years	1	0	0	0	1	0	0	1	0
5–10 years	2	2	2	2	1	2	1	1	1
5–10 years	1	1	1	1	1	2	2	2	3
>10 years	2	2	2	2	2	2	2	2	3
5–10 years	2	1	1	2	1	2	2	1	2
5–10 years	2	2	1	1	2	1	1	2	2
>10 years	2	2	2	3	2	2	2	2	2
>10 years	1	1	2	2	3	2	2	1	0
3–5 years	1	1	1	1	2	2	1	1	3
5–10 years	1	1	1	1	1	1	1	2	3
3–5 years	1	2	2	1	2	2	2	2	3
<3 years	1	0	0	0	1	0	0	0	0
3–5 years	2	1	1	1	2	2	2	1	3
>10 years	2	2	3	2	2	3	2	2	3
3–5 years	1	1	0	1	0	1	1	0	0
5–10 years	1	2	1	2	2	1	2	2	1
>10 years	3	3	2	2	2	3	2	2	3
5–10 years	2	2	2	1	1	2	2	1	1
5–10 years	1	2	2	2	1	2	1	1	1
5–10 years	2	2	2	2	1	2	1	1	1
>10 years	2	3	3	2	3	2	2	2	3
3–5 years	1	1	1	1	2	1	1	1	3
3–5 years	2	2	1	1	1	1	1	3	3
3–5 years	2	2	2	2	1	2	1	2	3
3–5 years	1	1	2	2	1	2	1	2	1
>10 years	2	2	3	2	3	2	3	2	3
3–5 years	2	1	1	2	2	1	1	2	1
>10 years	3	3	2	2	2	2	2	2	2
>10 years	1	1	3	3	3	2	3	3	2

PHQ9_Tota	ession Cate	MGLS-Q1	MGLS-Q2	MGLS-Q3	MGLS-Q4	MGLS_Sco	Adherence Level	COPE-Q1
4	No Depres	0	0	0	0	0	Medium Adherence	2
3	No Depres	0	0	0	0	0	Medium Adherence	1
4	No Depres	1	0	0	0	1	Medium Adherence	4
6	Mild	0	1	0	0	1	Medium Adherence	3
4	No Depres	0	0	0	0	0	High Adherence	2
4	No Depres	0	0	0	0	0	High Adherence	1
6	Mild	0	0	0	0	0	Medium Adherence	2
9	Mild	0	1	1	1	3	Low Adherence	4
4	No Depres	0	0	0	0	0	High Adherence	3
6	Mild	0	0	0	0	0	High Adherence	2
8	Mild	1	1	0	1	3	Low Adherence	3
14	Moderate	0	1	1	0	2	Medium Adherence	3
4	No Depres	0	0	0	0	0	Medium Adherence	3
4	No Depres	0	0	0	0	0	Medium Adherence	4
4	No Depres	0	0	0	0	0	High Adherence	1
4	No Depres	0	0	0	0	0	High Adherence	1
4	No Depres	0	0	0	0	0	High Adherence	4
17	Moderatel	0	0	0	0	0	High Adherence	3
7	Mild	0	0	0	0	0	High Adherence	1
6	Mild	0	0	0	0	0	Medium Adherence	2
4	No Depres	0	0	0	0	0	High Adherence	4
6	Mild	0	0	0	0	1	Medium Adherence	2
4	No Depres	0	0	0	0	0	High Adherence	4
3	No Depres	0	0	0	0	0	Medium Adherence	3
19	Moderatel	0	0	0	0	0	High Adherence	1
6	Mild	0	0	1	0	1	Medium Adherence	3
14	Moderate	1	1	1	1	4	Low Adherence	1
4	No Depres	0	0	0	0	0	High Adherence	4
5	Mild	1	0	0	0	1	Medium Adherence	4
3	No Depres	1	0	0	0	1	Medium Adherence	2
2	No Depres	0	0	0	0	0	High Adherence	3
8	Mild	0	0	0	0	0	High Adherence	1
9	Mild	1	1	0	0	2	Medium Adherence	2
4	No Depres	1	0	0	0	1	Medium Adherence	4
4	No Depres	0	0	0	1	1	Medium Adherence	4
9	Mild	0	1	1	1	3	Low Adherence	3
9	Mild	0	0	0	0	0	High Adherence	2
4	No Depres	0	0	0	0	0	High Adherence	2
4	No Depres	0	1	1	1	3	Low Adherence	3
8	Mild	0	1	1	0	2	Medium Adherence	1
4	No Depres	0	1	1	0	2	Medium Adherence	2
8	Mild	0	0	0	0	0	High Adherence	4
4	No Depres	0	0	0	0	0	High Adherence	3
4	No Depres	0	1	0	0	1	Medium Adherence	3
8	Mild	0	0	1	0	1	Medium Adherence	3
9	Mild	0	1	0	0	1	Medium Adherence	2

9	Mild	0	0	0	1	1	Medium Adherence	2
3	No Depres	0	0	0	0	0	High Adherence	3
2	No Depres	0	0	0	0	0	High Adherence	1
4	No Depres	0	0	0	1	1	Medium Adherence	2
8	Mild	1	1	1	0	3	Low Adherence	4
4	No Depres	1	0	1	0	2	Medium Adherence	3
7	Mild	1	1	1	0	3	Low Adherence	4
3	No Depres	0	0	0	0	0	High Adherence	3
8	Mild	1	1	1	0	3	Low Adherence	1
6	Mild	0	0	0	1	1	Medium Adherence	3
5	Mild	0	0	1	1	2	Medium Adherence	3
14	Moderate	0	1	1	1	3	High Adherence	2
3	No Depres	0	0	0	0	0	High Adherence	4
4	No Depres	0	0	0	1	1	Medium Adherence	3
2	No Depres	0	0	0	0	0	High Adherence	2
8	Mild	0	0	0	0	0	High Adherence	2
8	Mild	1	1	1	0	3	Low Adherence	3
17	Moderatel	1	1	1	0	3	High Adherence	3
8	Mild	0	1	0	0	1	Medium Adherence	1
3	No Depres	0	0	0	0	0	High Adherence	3
4	No Depres	0	1	0	0	1	Medium Adherence	4
4	No Depres	0	0	0	0	0	High Adherence	1
9	Mild	0	1	0	0	1	Medium Adherence	1
4	No Depres	0	0	0	0	0	High Adherence	3
7	Mild	0	0	0	0	0	High Adherence	1
9	Mild	1	0	1	0	2	Medium Adherence	4
9	Mild	1	1	1	1	4	Low Adherence	2
4	No Depres	0	0	0	0	0	High Adherence	4
17	Moderatel	0	1	0	0	1	High Adherence	4
8	Mild	0	1	1	1	3	Low Adherence	3
3	No Depres	0	0	0	1	0	High Adherence	4
9	Mild	1	1	1	1	4	Low Adherence	2
3	No Depres	0	0	0	0	0	High Adherence	1
18	Moderatel	0	0	0	0	0	High Adherence	2
9	Mild	1	0	0	0	1	Medium Adherence	4
4	No Depres	0	0	0	0	0	High Adherence	1
4	No Depres	0	0	0	0	0	High Adherence	2
14	Moderate	0	0	0	0	0	High Adherence	4
9	Mild	0	0	1	1	2	Medium Adherence	2
14	Moderate	0	0	0	1	0	High Adherence	3
2	No Depres	0	0	0	0	0	High Adherence	3
13	Moderate	0	1	0	0	1	Medium Adherence	4
8	Mild	0	1	1	0	2	Medium Adherence	1
14	Moderate	0	1	0	0	1	High Adherence	3
8	Mild	1	0	0	0	1	Medium Adherence	2
9	Mild	1	0	0	0	1	Medium Adherence	2
14	Moderate	0	0	0	1	1	High Adherence	2

18	Moderatel	0	1	0	1	2	Medium Adherence	2
14	Moderate	0	1	1	0	2	Medium Adherence	4
14	Moderate	0	0	0	0	0	High Adherence	4
13	Moderate	0	0	0	0	0	High Adherence	1
9	Mild	1	0	1	0	2	Medium Adherence	3
15	Moderatel	1	1	1	0	3	High Adherence	1
14	Moderate	0	0	0	0	0	High Adherence	4
12	Moderate	1	1	1	0	3	Low Adherence	2
3	No Depres	1	0	1	0	2	Medium Adherence	3
14	Moderate	0	1	0	1	2	Medium Adherence	2
14	Moderatel	1	1	0	1	3	Low Adherence	4
19	Moderatel	1	0	1	1	3	Low Adherence	2
14	Moderate	0	0	0	1	1	Medium Adherence	1
14	Moderate	1	0	1	0	2	Medium Adherence	1
19	Moderatel	1	1	1	1	4	Low Adherence	3
14	Moderate	1	0	1	1	3	Low Adherence	2
13	Moderate	0	0	0	0	0	High Adherence	4
12	Moderate	0	1	1	0	2	Medium Adherence	4
17	Moderatel	0	0	1	1	2	Medium Adherence	2
3	No Depres	1	1	0	0	2	Medium Adherence	1
15	Moderatel	0	0	0	0	0	High Adherence	3
21	Severe	0	1	1	1	3	High Adherence	4
5	Mild	0	0	0	0	0	High Adherence	4
14	Moderate	1	1	0	0	2	Medium Adherence	1
22	Severe	1	0	0	0	1	High Adherence	2
14	Moderate	1	1	1	1	4	Low Adherence	4
13	Moderate	0	1	0	1	2	Medium Adherence	1
14	Moderate	0	0	1	0	1	Medium Adherence	3
22	Severe	1	1	1	1	4	Low Adherence	3
12	Moderate	0	0	0	0	0	High Adherence	4
14	Moderate	0	0	0	0	0	High Adherence	2
17	Moderatel	0	1	1	1	3	Low Adherence	2
13	Moderate	0	0	1	0	1	Medium Adherence	2
22	Severe	0	1	1	1	3	Low Adherence	1
13	Moderate	0	1	1	1	3	Low Adherence	4
20	Severe	1	1	1	1	4	Low Adherence	2
21	Severe	1	1	1	1	4	High Adherence	4

COPE-Q2	COPE-Q3	COPE-Q4	COPE-Q5	COPE-Q6	COPE-Q7	COPE-Q8	COPE-Q9	COPE-Q10	COPE-Q11
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COPE-Q12	COPE-Q13	COPE-Q14	COPE-Q15	COPE-Q16	COPE-Q17	COPE-Q18	COPE-Q19	COPE-Q20	COPE-Q21
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4	3	4	2	3	3	3	4	2	4
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COPE-Q22	COPE-Q23	COPE-Q24	COPE-Q25	COPE-Q26	COPE-Q27	COPE-Q28	Approach	Avoidant	Inference
1	3	3	3	4	3	4	41	34	Approach
2	3	4	4	1	2	2	31	28	Approach
2	3	2	1	2	2	4	25	31	Avoidant
3	4	3	2	4	1	1	28	40	Avoidant
2	4	3	3	3	3	4	37	23	Approach
3	4	3	3	2	3	4	32	23	Approach
3	4	3	3	2	1	2	39	33	Approach
1	3	2	3	3	2	2	31	34	Avoidant
3	3	3	3	2	4	3	35	27	Approach
1	3	3	4	1	4	4	30	24	Approach
1	1	1	1	4	2	3	28	36	Avoidant
1	3	1	4	4	3	2	30	36	Avoidant
2	2	3	2	2	4	2	29	38	Avoidant
4	1	4	4	4	3	1	36	41	Avoidant
4	4	4	2	3	3	3	36	33	Approach
2	3	4	4	3	2	1	35	28	Approach
2	3	3	3	3	4	3	29	26	Approach
3	2	2	1	1	2	3	30	33	Avoidant
4	4	3	4	3	3	3	31	26	Approach
2	4	4	4	3	2	3	35	28	Approach
3	3	4	1	4	3	4	27	35	Avoidant
4	4	1	3	2	1	3	36	30	Approach
1	2	4	3	1	2	1	31	25	Approach
4	2	4	4	1	1	4	31	26	Approach
1	1	1	3	4	3	3	31	33	Avoidant
3	4	3	4	4	1	3	30	38	Avoidant
2	1	1	4	4	4	3	23	29	Avoidant
2	4	4	4	1	4	3	40	25	Approach
2	4	2	4	4	3	1	38	36	Approach
3	2	2	3	2	2	3	33	28	Approach
4	4	4	2	4	1	1	36	31	Approach
4	1	2	1	2	2	4	23	25	Avoidant
3	2	2	3	2	3	1	32	37	Avoidant
1	4	4	4	3	4	2	32	29	Approach
1	1	3	3	4	2	4	25	36	Avoidant
2	1	1	1	4	4	4	24	33	Avoidant
1	4	4	3	4	4	4	33	26	Approach
1	1	1	2	4	3	4	26	33	Avoidant
4	1	2	2	1	1	3	36	30	Approach
4	4	3	2	3	3	3	28	30	Avoidant
1	3	3	2	3	1	1	34	29	Approach
1	3	2	4	3	3	3	33	30	Approach
4	4	2	3	4	3	1	30	28	Approach
3	1	1	4	3	4	2	38	29	Approach
4	1	2	2	3	2	3	33	25	Approach
3	3	4	2	1	3	3	32	36	Avoidant

3	3	4	2	2	1	3	29	25	Approach
1	1	4	2	4	2	3	34	30	Approach
4	4	4	4	4	3	4	34	31	Approach
4	3	1	2	3	3	4	32	27	Approach
2	3	2	1	3	4	1	27	32	Avoidant
2	4	2	1	2	2	3	31	39	Avoidant
3	4	2	3	2	1	3	40	33	Approach
1	3	3	3	1	4	1	34	32	Approach
2	3	1	4	1	3	2	36	32	Approach
4	4	2	2	4	3	3	31	33	Avoidant
2	1	4	2	3	4	4	30	33	Avoidant
1	2	4	3	4	3	3	31	33	Avoidant
4	3	3	3	2	3	1	33	28	Approach
2	1	2	3	2	2	2	36	31	Approach
4	2	2	3	4	2	2	38	29	Approach
4	3	4	2	4	4	2	42	31	Approach
2	4	4	3	2	2	1	23	27	Avoidant
2	1	1	2	2	3	2	24	35	Avoidant
4	1	3	3	2	2	2	35	29	Approach
4	4	4	4	2	2	3	31	28	Approach
3	4	4	3	1	4	2	32	28	Approach
1	4	3	3	4	1	3	33	31	Approach
4	3	4	4	3	4	3	31	38	Avoidant
2	3	3	1	3	1	1	37	32	Approach
2	1	1	1	4	3	2	31	25	Approach
4	2	3	1	2	2	4	34	29	Approach
4	2	2	3	1	3	1	23	26	Avoidant
1	4	4	3	2	2	4	33	29	Approach
3	3	2	4	1	1	4	34	29	Approach
1	1	4	3	4	2	2	38	35	Approach
4	4	4	4	1	2	4	39	29	Approach
2	4	4	1	4	1	4	28	31	Avoidant
4	2	4	1	1	1	2	34	31	Approach
2	4	3	3	1	3	2	27	21	Approach
1	1	1	3	4	4	3	26	35	Avoidant
3	1	1	2	4	1	2	36	33	Approach
1	3	3	4	1	1	2	30	28	Approach
2	3	3	3	4	4	4	32	38	Avoidant
1	2	1	3	1	2	1	30	24	Approach
4	2	4	3	4	1	4	35	40	Avoidant
4	2	1	1	1	3	4	29	24	Approach
2	3	4	3	4	3	2	37	33	Approach
1	4	3	2	1	4	4	37	31	Approach
2	4	4	3	2	3	4	34	30	Approach
1	3	1	2	3	2	2	24	36	Avoidant
4	1	3	4	4	2	4	28	33	Avoidant
2	2	2	1	3	1	3	34	31	Approach

4	2	2	3	2	4	2	33	23	Approach
2	1	3	1	3	3	1	37	32	Approach
3	1	1	3	4	1	3	23	31	Avoidant
1	1	1	2	2	2	3	35	31	Approach
3	2	2	1	4	1	3	24	34	Avoidant
4	2	2	1	1	2	3	31	28	Approach
4	4	1	1	4	1	3	37	33	Approach
4	3	3	2	3	2	3	29	37	Avoidant
4	1	3	1	4	4	2	40	38	Approach
2	4	4	3	2	3	1	32	29	Approach
4	2	3	3	4	4	2	30	33	Avoidant
3	1	2	3	4	3	2	35	29	Approach
3	1	1	2	1	3	4	29	21	Approach
4	4	1	4	1	2	2	29	26	Approach
2	4	2	4	2	1	3	36	39	Avoidant
2	3	3	4	1	4	3	29	35	Avoidant
4	2	4	4	1	2	3	40	31	Approach
4	4	1	1	4	4	1	36	41	Avoidant
1	2	3	3	3	1	4	31	37	Avoidant
1	2	2	3	2	2	2	32	27	Approach
1	1	4	1	2	3	2	28	22	Approach
4	4	1	1	4	2	3	32	38	Avoidant
2	2	1	1	3	2	2	32	24	Approach
1	1	3	1	4	2	3	27	32	Avoidant
1	2	1	3	1	3	3	31	26	Approach
2	1	3	4	2	3	2	36	30	Approach
3	2	2	3	4	2	3	26	38	Avoidant
3	4	4	1	1	3	3	41	37	Approach
2	4	1	1	1	3	1	25	33	Avoidant
3	1	2	2	1	1	2	36	33	Approach
2	2	4	4	4	3	3	43	30	Approach
1	4	4	2	1	1	4	27	35	Avoidant
2	1	2	4	1	4	2	40	33	Approach
2	1	2	1	4	3	2	26	39	Avoidant
1	1	3	3	1	1	1	30	27	Approach
2	2	1	4	3	4	2	26	29	Avoidant
3	3	2	2	3	4	1	25	30	Avoidant