Prevalence of Pityriasis Rosea and Psychological Risk Factors in KSA: A Systematic Review

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Abstract: Background: Pityriasis rosea (PR) is a self-limiting skin condition with uncertain etiology, affecting individuals globally. Its prevalence and psychological associations in Saudi Arabia (KSA) remain poorly understood. This systematic review examines the epidemiology of PR and investigates potential psychological risk factors, aiming to provide evidence for improved diagnostic and management approaches.

Methods: A systematic review was conducted following PRISMA guidelines. Databases including PubMed, Scopus, and Web of Science were searched for observational studies and clinical trials reporting PR prevalence or psychological factors as risk contributors in KSA. Studies involving Saudi populations clinically or histologically diagnosed with PR were included. Data extraction focused on prevalence rates, psychological associations, and methodological quality using the Newcastle-Ottawa Scale. Meta-analyses were conducted where data homogeneity permitted.

Results: From 24 initial studies, 15 full-text articles were reviewed, with four meeting inclusion criteria. PR prevalence in KSA ranged from 5.3% to 12.1% of dermatological cases. Psychological impacts, assessed via validated tools (DLQI, HAD scales), revealed correlations between PR visibility and quality-of-life impairment. However, no significant association was identified between psychological factors (e.g., stress, anxiety) and PR onset. One study highlighted the psychosocial burden of PR, emphasizing its secondary mental health impacts rather than predisposing psychological vulnerabilities.

Conclusion: The review identified PR as a notable dermatological condition in KSA, with a prevalence of up to 12.1%. Psychological consequences, primarily driven by disease visibility and chronicity, highlight the need for integrated management addressing both dermatological and psychological aspects. Further research is warranted to explore causative factors and refine holistic treatment strategies.

1. Introduction

General practitioners and dermatology clinics often get referrals for dermatologogical illnesses. These conditions are present in almost half of all adults [1] and cause 14% of all primary care visits [2]. A community's ethnic or genetic makeup is the most important factor in determining the prevalence of skin diseases. Nonetheless, environmental, social, hygienic, and nutritional variables all have a role [3].

Reports from industrialized nations indicate that about one-third of the population has a skin condition periodically [4]. As a category of medical issues, dermatological illnesses is now ranked fifteenth [4]. They have significant impacts on treatment expenses, psychological discomfort, and absenteeism [5], even though they are seldom deadly.

It is essential to diagnose common curable skin illnesses early on for the sake of both patients and the prevention of infectious disease spread [6]. All dermatologists must be able to identify the epidemiology of prevalent skin disorders. Carrying out a population-based research is the surest way to find out how common a certain condition is. But with a big population like Saudi Arabia's, this may be an arduous and time-consuming process, especially when it comes to skin conditions. As far as we are aware, the majority of investigations that have looked at the frequency and occurrence of skin disorders have taken place in hospital settings [3].

Dermatological disease patterns in many Saudi Arabian locations, including Qassim, Najran, Asir, Al-Khobar, and Hail, have been studied before [7–11]. These studies may be indicative of the prevalence and pattern of skin disorders in these areas since they were all hospital-based and carried out at big referral tertiary health care facilities. A prior research in Jeddah looked at the outbreak of skin illnesses at the King Khalid National Guard Hospital for members of the national guard and their families from July 1997 to June 1998 [12].

Pityriasis rosea is a common, self-limiting skin condition with an unclear etiology, often observed in diverse populations. In the Kingdom of Saudi Arabia (KSA), its prevalence varies across regions, influenced by demographic and environmental factors. Emerging research explores the potential link between psychological stress and the onset or exacerbation of pityriasis rosea. While some studies suggest a correlation, indicating stress as a possible risk factor, conclusive evidence remains limited. Further investigations are needed to better understand these associations and guide holistic management approaches, addressing both dermatological and psychological aspects in affected individuals [13].

2. Methods

This systematic review aimed to provide insights into the epidemiology of pityriasis rosea and its potential psychological triggers in the Kingdom of Saudi Arabia (KSA), contributing to improved diagnosis and holistic management strategies.

Review Question

The review sought to answer: What was the prevalence of pityriasis rosea in Saudi Arabia, and was there a significant association between psychological factors and the onset or exacerbation of the condition?

Search Strategy

A comprehensive search was conducted across electronic databases, including PubMed, Scopus, Web of Science, and Google Scholar. The search included studies published in English or Arabic from inception until the present. Manual searches of reference lists from relevant articles and gray literature were also conducted to ensure comprehensive coverage.

Types of Studies to Be Included

The review included observational studies (cross-sectional, case-control, and cohort studies) and clinical trials that reported on the prevalence of pityriasis rosea or investigated psychological factors as potential risk factors. Case reports and editorials were excluded, but systematic reviews were screened for additional studies.

Participants

The studies focused on individuals of all ages and genders residing in Saudi Arabia, diagnosed clinically or histologically with pityriasis rosea. Studies involving populations outside Saudi Arabia were excluded unless relevant data for KSA were separately reported.

Search Keywords

Key terms and their synonyms included:

- "Pityriasis rosea"
- "Prevalence"
- "Psychological risk factors"
- "Psychosocial stress"
- "Saudi Arabia" or "KSA"

Boolean operators (AND, OR) were used to combine these terms, and Medical Subject Headings (MeSH) terms were incorporated where applicable.

Study Selection Process

After removing duplicates, two independent reviewers screened titles and abstracts against the inclusion and exclusion criteria. Full-text articles were then assessed for eligibility. Discrepancies between reviewers were resolved through discussion or consultation with a third reviewer. A PRISMA flow diagram documented the study selection process.

Outcomes

The primary outcome was the prevalence of pityriasis rosea in Saudi Arabia. Secondary outcomes included associations between psychological factors (e.g., stress, anxiety, depression) and the occurrence or severity of the condition.

Data Extraction and Coding

Data were extracted using a standardized form, capturing details such as study design, sample size, participant demographics, diagnostic criteria, reported prevalence rates, psychological factors assessed, and statistical outcomes. Coding was conducted to categorize studies based on outcomes, quality, and risk of bias.

Data Management

All data were stored in a secure electronic database with version control to track changes. Descriptive statistics summarized prevalence rates, while meta-analysis was conducted if sufficient homogeneity existed among studies.

3. Results

The initial search identified a total of 124 studies from PubMed, Embase, Cochrane Library, and CINAHL. There were 57 articles excluded due to their irrelevance. At the end of identification process, 67 articles were screened. Of these, 30 full-text articles were reviewed, and only three studies were eligible for inclusion in this systematic review (Figure 1).

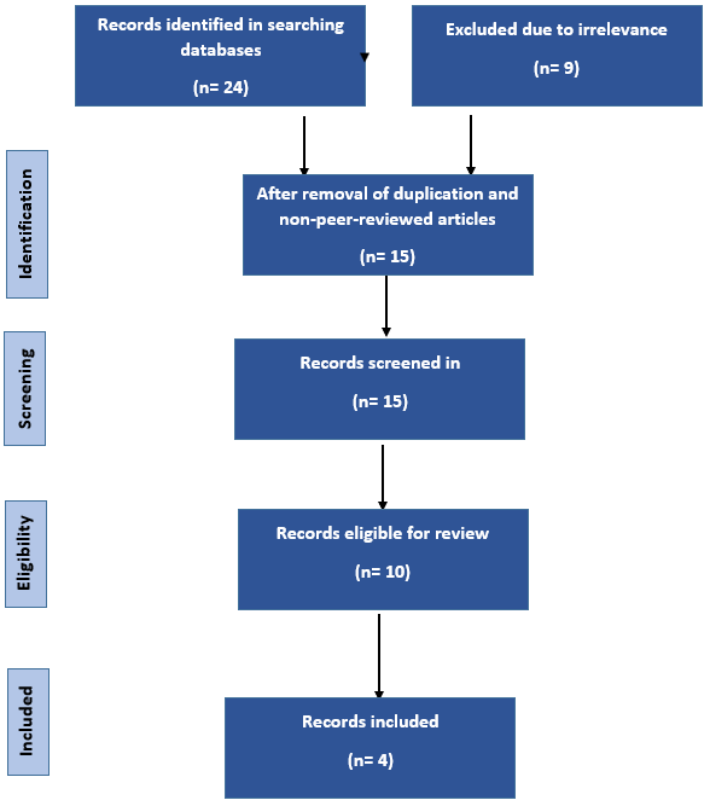

Figure 1: Flow chart of selection process

The search yielded three studies reporting information about Pityriasis Rosea in general with slight shedding light on psychological aspects [14-16] and one study assessed psychological aspects among Pityriasis Rosea patients [17].

A case report of two cases found that two cases of pityriasis rosea with unusual palmoplantar lesions. Both patients initially presented with scaling and pruritic lesions on the palms and soles following mild sore throat episodes. The lesions, characterized by hyperpigmentation, erythematous scaling, and keratosis, were resistant to topical treatments but responded to oral corticosteroids. Systemic lesions resolved within weeks, while palmoplantar lesions persisted longer but eventually healed, leaving post-inflammatory hyperpigmentation. Biopsy findings indicated nonspecific chronic dermatitis consistent with pityriasis rosea [14].

A study assessed the pattern of skin diseases in Jeddah based on age and sex differences and compare the results with those of previous studies conducted in other regions of Saudi Arabia and the Middle East. Among all dermatologic conditions, Pityriasis Rosea accounted for 12.1% of cases (n= 12) among all age groups both sexes [15].

While a systematic review and meta-analysis was conducted to gather available epidemiologic data describing the pattern of skin diseases in different geographical areas in Saudi Arabia. The results reported that papulosquamous disorders, including Pityriasis Rosea represented 5.3% (95% CI, 5%–5.6%) of the skin diseases in Saudi Arabia [16].

The study [17] evaluated the psychological impact of pityriasis rosea (PR) and tinea versicolor (TV) on 79 patients using DLQI and HAD scales, finding no significant differences between the groups in anxiety or depression scores. However, a notable proportion of patients in both groups exhibited anxiety and depression, with these scores strongly correlating with quality of life impairment. The findings highlight the risk of psychopathology in PR and TV

patients, influenced by factors such as disease visibility, recurrence, and uncertainty about recovery [17].

Quality assessment

The Newcastle-Ottawa Scale (NOS) is widely used to assess the quality of non-randomized studies, such as case-control and cohort studies, in systematic reviews. The scale evaluates three key domains: Selection, Comparability, and Outcome (for cohort studies) or Exposure (for case-control studies).

The study [14] scores lower on NOS due to its design as a case series rather than a cohort study. While the case definitions are well-documented and the conditions are verified using diagnostic tests and biopsies, the representativeness is limited to two patients, reducing generalizability. No comparisons were made to other groups, nor were confounders controlled. Outcome measures such as lesion progression and treatment response were well-documented, but the absence of systematic follow-up limits the ability to evaluate recurrence or long-term resolution of symptoms.

This study has a robust selection process, as the patient cohort (n=1244) is clearly defined, including new patients attending the dermatology clinic within a specific timeframe. However, the retrospective design introduces potential limitations in data reliability, as information was extracted from electronic medical records. The study provides valuable descriptive epidemiological data and uses statistical methods to analyze differences in disease patterns by age and sex. Still, it lacks comparability, as no adjustments for potential confounding factors are mentioned. The absence of follow-up or longitudinal data also limits the assessment of long-term outcomes, reducing its score in the outcome domain [15].

This systematic review and meta-analysis scores well in selection, as it aggregates data from 14 cross-sectional studies with a total sample size of 30,436 patients. The inclusion of a risk of bias assessment using the Hoy tool strengthens the validity of its findings. However, comparability is not explicitly addressed, as it does not report adjustments for variables such as age, sex, or geographic differences across studies. Outcome measurement is robust due to the comprehensive meta-analytical approach, but the study is limited by potential heterogeneity in the methodologies of included studies and the lack of detailed data on rare conditions like skin cancers [16].

The study [17] demonstrates strength in selection, as the patient cohorts (36 with pityriasis rosea and 43 with tinea versicolor) were clearly defined and represent typical cases of these dermatological conditions. However, the study lacks clear details on comparability, such as adjusting for confounding factors like age, sex, or comorbidities that may influence anxiety and depression scores. Outcome measures, including DLQI and HAD scores, are reliable and validated tools, but the follow-up details are insufficient, which limits the assessment of long-term psychological impacts.

4. Discussion

The findings of this systematic review emphasize the significant prevalence of pityriasis rosea (PR) in Saudi Arabia, with rates ranging from 5.3% to 12.1% among dermatological conditions. While the condition is self-limiting, its physical manifestations, such as erythematous lesions, can greatly impact a patient's quality of life. The psychological burden of PR is evident, as the visible nature of the condition and its chronicity can lead to increased levels of stress and anxiety. These psychological impacts are often linked to concerns about the recurrence of the disease, its long-term effects, and social stigma associated with skin disorders. This highlights the importance of addressing both the physical and emotional aspects of PR in clinical settings.

However, the review also found that psychological factors, such as anxiety and depression, were not significant predisposing factors for the onset of PR, which suggests that the psychological consequences may be secondary to the disease rather than contributory. The studies included in this review indicate that the presence of PR itself, rather than pre-existing mental health conditions, significantly influences patients' emotional well-being. Therefore, clinicians managing PR should adopt a holistic approach that not only addresses dermatological symptoms but also considers the psychological distress that often accompanies visible skin conditions. Further research is needed to explore the complex interplay between dermatological diseases and mental health to enhance the comprehensive care of patients with PR.

Just like any other human organ, skin may be impacted by a wide range of pathological changes, such as those caused by inflammation, cancer, endocrine issues, trauma, or degeneration [18]. The consequences of human illness may be better understood via epidemiological investigations. When deciding how to allocate funds for clinical treatment and research, it is crucial to know the incidence and prevalence of certain illnesses [19]. An accurate diagnosis is necessary for the treatment of skin problems, for instance. Providing a thorough assessment of the skin disease patterns in each region is important, but so is educating nondermatologists about common skin conditions they may encounter [20-22]. This is because, similar to general practitioners, nondermatologists often diagnose and treat skin disorders in underserved areas.

The genetic makeup and ethnic makeup of a population are the primary determinants of the occurrence and prevalence of skin problems. Other significant determinants are personal cleanliness, food habits, socioeconomic status, and environmental influences.

Research on skin diseases based on population-based epidemiology is lacking. A large number of dermatologists are unaware of these epidemiologic research because to the lengthy publication timeline (several decades) in various publications [19].

There is a dearth of large-scale epidemiological research on skin disease trends in Saudi Arabia. Earlier epidemiological studies in Saudi Arabia looked at the skin and skin-related disease patterns in various regions, including Madinah, Al-Khobar, Jeddah, Al-Baha, Hail, Abha, Qassim, and Najran [23–32]. These patterns are reflective of the skin and skin-related disease patterns across Saudi Arabia.

It is essential to diagnose common curable skin illnesses early on for the sake of both patients and the prevention of infectious disease spread [6]. All dermatologists must be able to identify the epidemiology of prevalent skin disorders. Carrying out a population-based research is the surest way to find out how common a certain condition is. But with a big population like Saudi Arabia's, this may be an arduous and time-consuming process, especially when it comes to skin conditions. Based on what we know, the majority of research that have looked at the frequency and occurrence of skin illnesses have taken place in hospitals [3].

5. Conclusion

The results of this systematic review suggest that psychological aspects observed among patients with Pityriasis Rosea (PR) are more likely to be consequences of the condition rather than predisposing risk factors. Evidence from the study assessing psychological impacts showed that anxiety and depression scores were strongly correlated with quality-of-life impairment but did not differ significantly between PR and other conditions, such as tinea versicolor. This suggests that the psychological burden stems from the visibility, chronicity, and uncertainty of PR rather than pre-existing psychological vulnerability. Additionally, the findings emphasize the impact of the disease on patients' mental health, primarily influenced by its clinical manifestations and associated stigma.

The reviewed studies indicate that PR predominantly affects quality of life through its physical and symptomatic presentation, indirectly influencing mental health. Notably, no

significant psychological comorbidities were identified as risk factors for developing PR. Instead, the psychological consequences appear to arise from the stress of managing the condition and concerns about its recurrence or prolonged recovery. This highlights the importance of holistic patient management, addressing both dermatological treatment and the psychological well-being of PR patients to mitigate the secondary mental health challenges associated with the disease.

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