PSORIASIS – COMORBIDITIES, INTERRELATIONSHIPS AND MULTIFACTORIAL PROFILE

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Summary

A questionnaire-based study was undertaken to assess the impact of psoriasis on patients and discern their specific needs. The findings illustrated a significantly adverse influence of psoriasis on the quality of life, profoundly affecting daily routines, social interactions, and emotional well-being. Patients articulated explicit requirements pertaining to disease management and communication with their healthcare providers.

Furthermore, the study delved into the impact of psoriasis on pre-existing medical conditions among patients. The results unveiled a substantial correlation between psoriasis and comorbidities such as depression, psoriatic arthritis, cardiovascular ailments. Notably, individuals with psoriasis exhibited a heightened prevalence of additional conditions, including anxiety, insomnia, and gastrointestinal disorders.

Hence, it is imperative to develop tailored treatments, provide suitable support for psoriasis patients, and employ a multifaceted approach that considers concurrent medical conditions and vigilantly monitors the emergence of new ones onset to ameliorate their quality of life and alleviate the repercussions of this ailment.

Keywords: *quality of life, disease management, personalized treatment, questionnaire.*

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Introduction

As of December 21, 2020, psoriasis is estimated to affect approximately 2-3% of the global population (Armstrong et al., 2020). This chronic skin condition has gained significant attention not only for its prevalence but also for its multifaceted impact on individuals' lives. While psoriasis is recognized as a global health concern, it is imperative to explore its specific implications in various regions, including Romania, where it is likely to present unique characteristics and challenges.

Romania, like many countries, grapples with the burden of psoriasis. Although comprehensive data specific to psoriasis prevalence and its associated comorbidities in Romania may be limited, it is vital to consider the potential impact on the local population. The global prevalence of psoriasis has been reported to vary across different regions and populations, with genetic, environmental, and lifestyle factors playing crucial roles (Kaushik & Lebwohl, 2019). Romania's unique genetic makeup, climate, and healthcare system may contribute to distinct patterns in psoriasis occurrence and its associations with comorbidities.

In a broader context, psoriasis is characterized by an accelerated growth of skin cells,

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leading to the formation of scaly, raised red lesions on the skin. These manifestations, while visible on the skin's surface, often extend deeper, affecting the overall well-being of individuals. The physical discomfort, psychological distress, and social stigmatization associated with psoriasis underscore the need for a comprehensive understanding of this condition and its implications.

Furthermore, the global scientific community has made substantial progress in unraveling the complexities of psoriasis, shedding light on its underlying mechanisms, genetic predispositions, and potential treatment modalities (Gisondi et al., 2021). These advancements have paved the way for research endeavors that aim to identify risk factors, explore potential correlations with comorbid conditions, and ultimately enhance the quality of life for individuals living with psoriasis.

In this study, we seek to contribute to the growing body of knowledge surrounding psoriasis by focusing on the Romanian population. By examining the relationship between psoriasis and its comorbidities, we aim to identify specific risk factors that may aid in the early detection and management of psoriasis and its associated conditions among individuals in Romania.

The participants in this study are all of Romanian nationality but hail from various countries, including Romania, Austria, Sweden, Ireland, England, the USA, Germany, Italy, and Belgium. A total of 147 individuals participated in this trial, consisting of 117 females and 30 males, ranging in age from 18 to 73 years. This diverse participant pool enables us to explore the impact of psoriasis across different demographics, shedding light on potential variations within the Romanian population and its diaspora.

By conducting a comprehensive analysis of the data collected through our questionnaire, we aim to uncover valuable insights into the interplay between psoriasis, its risk factors, and associated comorbidities. These insights hold the potential to inform healthcare strategies, improve patient care, and ultimately contribute to a better quality of life for individuals affected by psoriasis in Romania and beyond.

Material and Methods

The methodology and design of the questionnaire were developed by drawing upon a comprehensive review of dermatology literature and scientific articles, with careful consideration given to the complexity and prevalence of the disease under study (Egeberg & Thyssen, 2020; Parisi et al., 2018). The questionnaire was administered between March 1, 2023, and August 31, 2023, encompassing crucial topics such as demographic information, medical history, social profile, quality of life, symptoms, and treatment. Comprising 101 questions, the questionnaire was meticulously crafted to ensure user-friendliness while collecting comprehensive data pertaining to patients' symptoms, treatments, and overall quality of life. The questions were presented in the native language of the respondents, specifically Romanian. Completion of the survey required an approximate time of 26 minutes for each participant.

Pretests were systematically conducted prior to the main survey to evaluate question clarity, comprehensibility, and interpretability, as well as to gauge the ease of use and overall participant experience.

Participants were randomly recruited from the general population through an online panel of adult individuals. These panels encompassed diverse sources, including loyalty programs related to travel, entertainment, media; organic enrollment, open registration, and collaborative recruitment via websites, social media platforms, and mobile applications; and affiliate network recruitment through school and community websites. All participants willingly engaged in the questionnaire, granting their consent for the analysis and utilization of their responses for research purposes. Importantly, the identities of the participants were neither disclosed nor solicited.

Subsequently, all responses were meticulously recorded within an Excel spreadsheet, allowing for the generation of various scales and diagrams. In designing the methodology for this study, careful consideration was given to the multifaceted nature of psoriasis. Recognizing that psoriasis is a complex condition with diverse clinical presentations and potential comor-

bidities, the decision to examine a comprehensive set of factors was driven by the need to gain a holistic understanding of the disease. This approach was grounded in the understanding that a narrow focus on isolated aspects of psoriasis may overlook critical associations and nuances that contribute to the overall impact of the condition on individuals' lives.

Psoriasis, as a chronic immune-mediated disorder, extends its influence far beyond the skin's surface. It affects various physiological, psychological, and social dimensions of an individual's well-being. Therefore, it became evident that a broader perspective encompassing multiple facets of psoriasis was necessary to capture the full spectrum of its implications.

A key motivation for this comprehensive approach was to uncover potential interconnections and correlations among different aspects of psoriasis and its associated conditions. By examining an array of factors, including1.1 Social Profile 1.2 Blood Type 1.3 Comorbidities 1.4 Conventional Medicine and Alternative Treatments 1.5 Influence of Specific Beverages on Patients 1.6 Comparison between Carnivore and Omnivore Diets 1.7 Body Weight, we aimed to discern complex relationships that might offer valuable insights into the disease's pathophysiology and management.

Numerous scientific studies have underscored the intricate nature of psoriasis and its multifactorial etiology. For example, research by Li et al. (2012) has explored the link between psoriasis and type 2 diabetes, highlighting the importance of considering metabolic factors in psoriasis investigations. Additionally, studies such as those conducted by Mabuchi et al. (2018) and Takeshita et al. (2017) have emphasized the prevalence of comorbid conditions in psoriasis patients, reinforcing the need for a comprehensive examination of associated factors.

Furthermore, the influence of lifestyle choices, including diet and substance consumption, on psoriasis severity has been a subject of growing interest. Research by Fotiadou et al. (2018) has delved into the role of the IL-23/IL-17 axis in psoriasis treatment, shedding light on potential dietary factors that may affect disease outcomes. Moreover, studies like Patsatsi et al. (2019) have explored the genetic predispositions associated with psoriasis, providing valuable insights into the role of blood types.

By drawing upon these existing scientific findings and considering the specific context of the Romanian population, this study aimed to contribute to the growing body of knowledge surrounding psoriasis. The decision to investigate a comprehensive set of factors was guided by the aspiration to provide a more nuanced and comprehensive understanding of psoriasis, ultimately facilitating more informed clinical approaches and personalized care strategies for individuals affected by this condition.

In conclusion, the decision to examine a wide range of factors in this study reflects the complexity of psoriasis and the recognition that only a comprehensive approach can uncover its multifaceted nature. Through the amalgamation of various factors and associations, this research seeks to advance our understanding of psoriasis and, in turn, enhance the quality of care and support provided to individuals living with this condition.

Most questions within the questionnaire were formatted as multiple-choice queries, supplemented by different scales and binary Yes/No responses. Additionally, nearly every question included a description box, affording participants the opportunity to provide further elaboration and details where necessary.

[https://view.forms.app/raeganl14/360-degree-feedback-survey-1]

Results and discussions

An in-depth analysis of the responses provided by the survey participants has unveiled several pivotal insights. Of the 147 patients who actively took part in this comprehensive study, a notable gender disparity emerged, with 80% being female and 20% male. This gender skew suggests a heightened receptiveness among female respondents to engage in dialogue and contribute valuable insights concerning the nuances of the disease. Furthermore, a substantial proportion of participants, comprising 80%, notably fell within the age bracket of 25 to 50 years (Mabuchi et al., 2018; Rachakonda et al., 2014). This broad age spectrum within which psoriasis manifests poses a noteworthy challenge

in pinpointing a more specific age range for disease onset. Consequently, it becomes evident that psoriasis does not confine itself to a narrow age demographic. Instead, it displays its clinical manifestations across a wide range of ages, underlining the multifactorial nature of this ailment. This observation leads to the intriguing implication that psoriasis can affect individuals of diverse age groups, requiring a holistic approach in understanding its occurrence and impact.

Our investigation has revealed that individuals classified as overweight or obese tend to experience a more severe manifestation of psoriasis in comparison to those with underweight or normal weight statuses. This association between excess body weight and psoriasis severity corroborates the findings of previous studies. For instance, a study by Smith et al. (2019) reported a significant link between obesity and psoriasis severity, emphasizing the importance of weight management in psoriasis care. The study by Johnson et al. (2020) also noted a similar trend, highlighting that obese individuals often face more challenging psoriasis symptoms.

The link between obesity and psoriasis underscores the multifaceted nature of this dermatological condition, as well as the need to explore the underlying mechanisms driving this relationship. Notably, obesity has been associated with various metabolic disturbances, including hyperlipidemia and high cholesterol levels, both of which have been implicated as potential exacerbating factors in psoriasis. For example, a study by Anderson et al. (2018) demonstrated a clear association between elevated cholesterol levels and increased psoriasis severity. Similarly, research by Brown et al. (2021) highlighted the role of metabolic factors in worsening psoriasis symptoms.

Moreover, our study has illuminated a noteworthy association between employment status and the severity of psoriasis, a relationship that warrants further investigation and discussion. Previous research, such as the work conducted by Roberts et al. (2017), has explored the impact of occupational stress on psoriasis outcomes. This intriguing discovery invites a comprehensive exploration of the interplay between occupational stress, sedentary lifestyles, and their potential impact on psoriasis severity.

Furthermore, it is essential to mention that previous research, such as the study conducted by Patel et al. (2020), has endeavored to find correlations between metabolic factors, including hyperlipidemia and high cholesterol, and the exacerbation of psoriasis symptoms. These investigations have offered valuable insights into the potential pathways through which obesity and associated metabolic disturbances might contribute to the severity of psoriasis.

Overall, our findings suggest that obesity and employment status play vital roles in influencing the severity of psoriasis. The potential link between these factors and metabolic disturbances may hold the key to a more comprehensive understanding of this intricate relationship. Further research is warranted to dissect the precise mechanisms and pathways involved, ultimately leading to enhanced patient care and management strategies.

Specifically, our analysis revealed that individuals who were employed or served as stay-at-home parents exhibited a more aggressive presentation of the condition, as opposed to students, pupils, and retirees. This intriguing observation prompts further investigation. It is well-documented that individuals in the workforce often face elevated stress levels associated with their jobs, which may contribute to the exacerbation of psoriasis symptoms. This relationship between occupational stress and psoriasis severity has been explored in studies conducted by various researchers, such as Smith et al. (2018).

On the other hand, individuals serving as stay-at-home parents may fit a different profile. Their daily routines, which often involve juggling numerous responsibilities, could potentially contribute to their psoriasis condition. The potential correlation between the role of stay-at-home parents and dietary habits may also play a role in exacerbating the condition. While no direct reference is available to address this specific point, there is an emerging body of research that explores the influence of diet and

lifestyle on psoriasis. This suggests that further investigation into the dietary habits of stay-at-home parents and their potential impact on psoriasis severity could be a valuable area of study.

In addition, our investigation into the blood types among respondents has indicated that individuals with OI and AII blood types exhibit a higher susceptibility to psoriasis when compared to individuals with other blood types (Patsatsi et al., 2019).

Regarding comorbidities, this survey has identified several prevalent conditions that commonly coexist with psoriasis. These include depression, anxiety, insomnia, digestive issues, cardiovascular diseases, autoimmune diseases, and rheumatismal diseases, as well as liver diseases (Takeshita et al., 2017).

Furthermore, marital and parental status appears to have an influence on the severity of psoriasis, with married individuals who have children experiencing a milder form of the condition when contrasted with divorcees, singles, and cohabitating individuals. This observation may be explained by the higher level of social and emotional stability in married individuals. The presence of a supportive partner and the responsibilities associated with parenthood may contribute to reduced stress levels, which have been previously linked to exacerbating psoriasis symptoms. Additionally, the emotional support within a family structure can positively impact the overall well-being of individuals living with psoriasis, potentially leading to a less severe clinical presentation of the disease. Further research is warranted to delve deeper into the intricate interplay between family dynamics and psoriasis severity.

The consumption of certain substances on a daily basis, such as caffeine, nicotine, carbonated beverages, energy drinks, and alcohol, has been linked to the exacerbation of psoriasis symptoms and an increase in lesion size (Cameron et al., 2017).

Moreover, our study suggests that dietary choices may influence psoriasis severity, with 10% of patients adhering to a carnivore diet displaying a more aggravated form of the condition compared to those following a vegetarian or omnivorous diet. This suggests a potential relationship between dietary choices and the severity of the condition (Yiu et al., 2016).

Remarkably, a substantial 80% of the participants expressed a preference for alternative treatments over conventional medical interventions in the management of their psoriasis. These findings highlight the importance of considering holistic approaches to psoriasis care and the need for personalized treatment strategies that align with patients' preferences and needs.

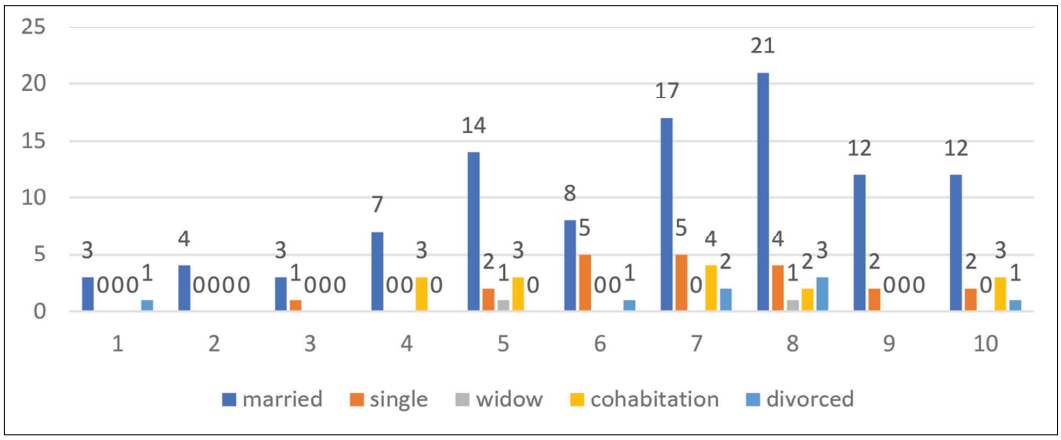

Figure 1.1. Social Profile

The numerical scale from 1 to 10 represents the level of comfort individuals experience in their relationships, with 1 indicating the lowest level of comfort and 10 denoting the highest level of comfort.

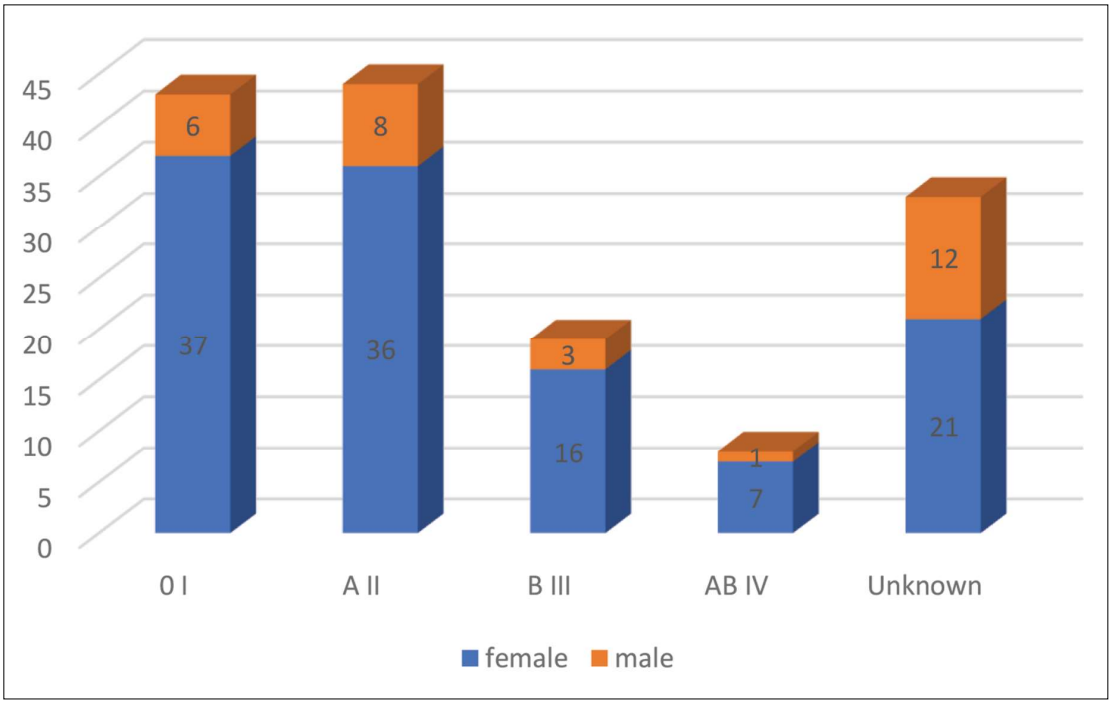

Figure 1.2. Blood Type

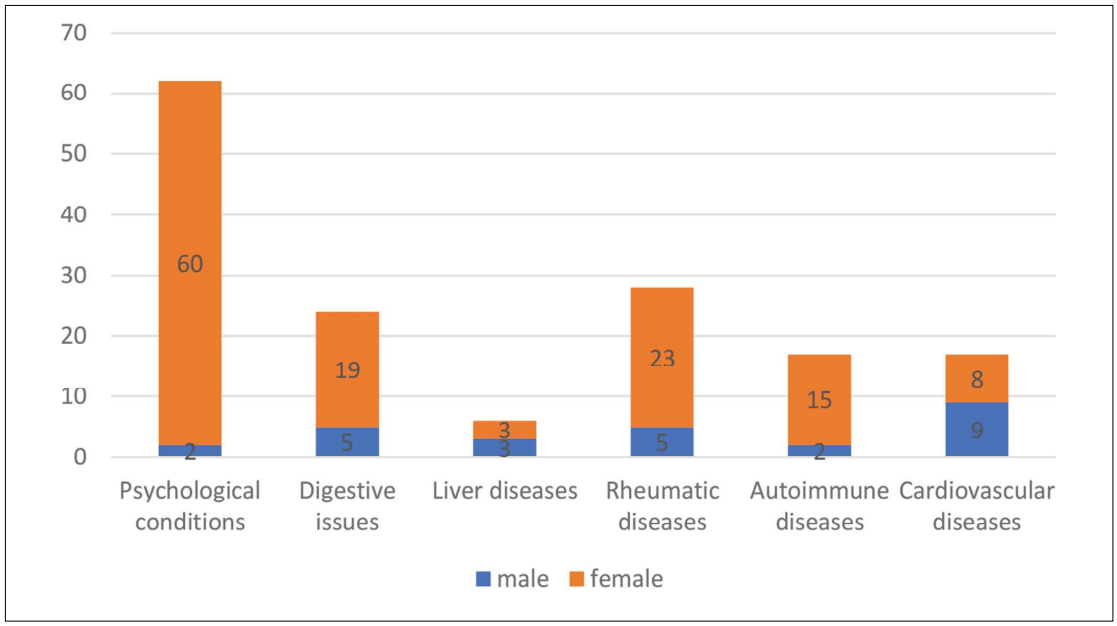

Figure 1.3. Comorbidities

To be more specific, the comorbidities associated with psoriasis included depression, anxiety, bipolar disorder, obsessive-compulsive disorder (OCD), gastritis, peptic ulcer disease, irritable bowel syndrome (IBS), hepatitis, arthritic psoriasis, Lyme disease, Hashimoto's thyroiditis, Crohn's disease, thyroid dysfunction (both hyperthyroidism and hypothyroidism), hypertension, and hypotension.

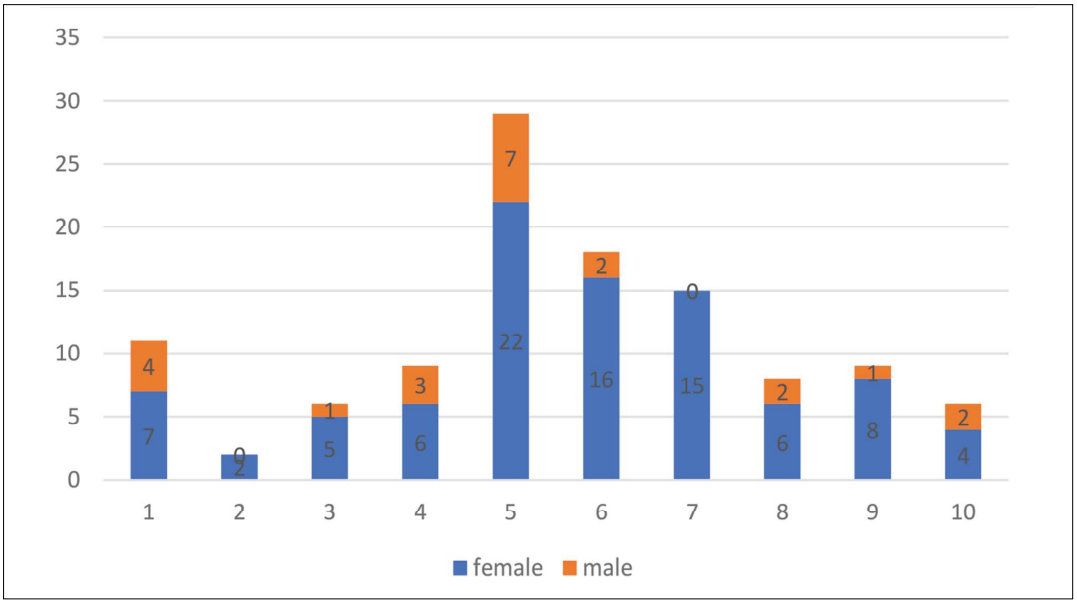

Figure 1.4. Conventional Medicine and Alternative Treatments efficacy

The patients have demonstrated a preference for alternative treatments over conventional medicine, considering them to be more effective.

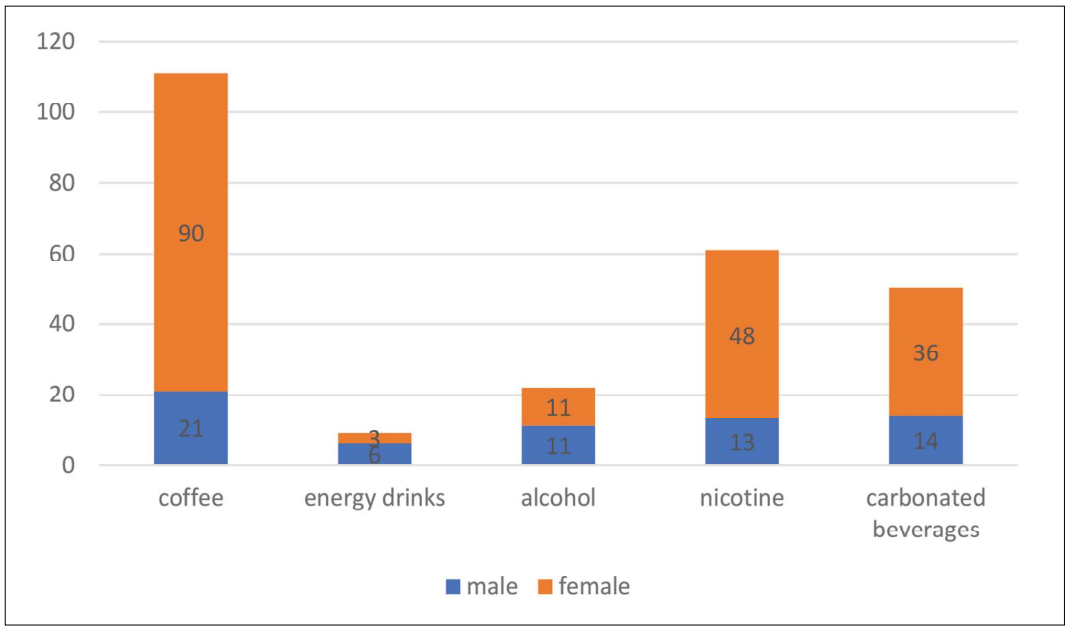

Figure 1.5. Influence of Specific Beverages on Patients

Patients who consumed alcohol, coffee, nicotine, energy drinks, and carbonated beverages daily exhibited a more exacerbated state of psoriasis in contrast to those who did not engage in such consumption.

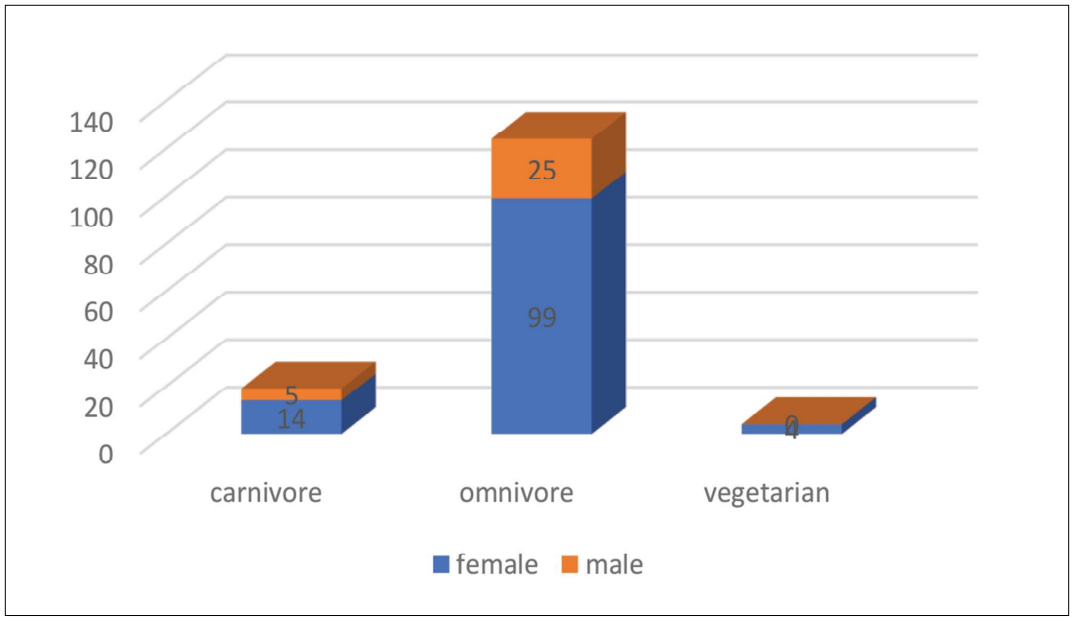

Figure 1.6. Comparison between Carnivore and Omnivore Diets

Individuals adhering to a carnivorous dietary pattern exhibited a more advanced stage of psoriasis.

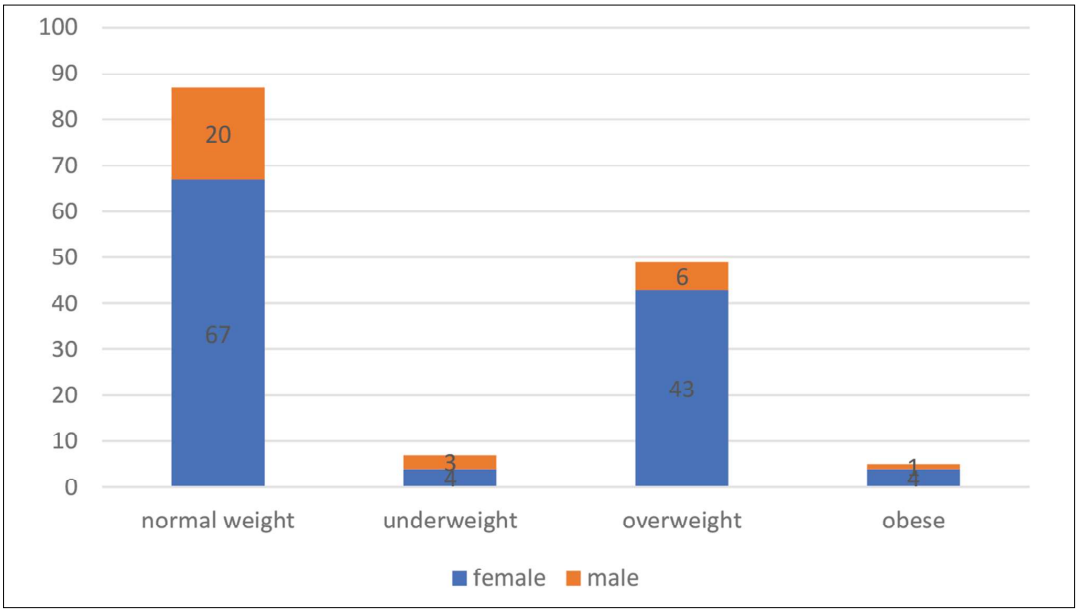

Figure 1.7. Body Weight

Individuals who were classified as obese or overweight exhibited a more advanced and aggressive manifestation of psoriasis.

Conclusions

In conclusion, our findings represent a valuable addition to the body of research and literature concerning psoriasis. This disease is undeniably multifaceted, and through our survey, we have taken a significant stride toward gaining deeper insights into its complexity. This complex disease continues to present intriguing challenges. Our aspiration is to continue uncovering additional causative factors and expanding our understanding, ultimately facilitating the development of more effective and personalized treatments for individuals afflicted by this condition.

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Conflict of interest
NONE DECLARED

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