Epidemiological profile of patients with psoriasis

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ABSTRACT
Psoriasis is a disease that affects 2 to 3% of the world's population. It is a chronic, non-communicable, painful, and disabling disease for which there is no cure. Thus, this study aims to describe the epidemiological profile, quality of life, and pharmacotherapy of patients with psoriasis. For this, a descriptive and quantitative cross-sectional study was conducted using online questionnaires that were applied to patients with psoriasis. The questionnaire included questions about socio-demographic data (gender, color, schooling, marital status), quality of life with questions related to day-to-day actions and pharmacotherapy (name of the drug, adverse reactions). We interviewed 554 individuals with a mean age of 38.72 years, with predominance of females (82.2%), white (70.1%) and with complete higher education (39.4%). The main clinical manifestations reported were scaling, itching and redness in the lesion regions. An average of 14.88 were obtained to evaluate the quality of life by the dermatology life qualify methodology. This disease causes negative impacts on patients' quality of life, mainly due to the development of other comorbidities (anxiety and depression); With this study, we confirm how psoriasis affects the quality of life of patients, since stigmatization of the individual in social environments and the adverse effects caused by drugs, in addition to promoting the appearance of other comorbidities.

Keywords: Injuries, Quality of life, Treatment, Chronic illness.

INTRODUCTION

Psoriasis is characterized as a chronic, non-communicable, painful, and disabling inflammation for which there is no cure, they experience substantial morbidity and increased rates of inflammatory arthritis, cardiometabolic diseases, and mental health disorders which causes negative impacts on patients' quality of life (ARMSTRONG; READ, 2020; BRASIL, 2022). This disease affects about 2% of the world's population (GOSSEC et al., 2018), a recent American study showed 3% of prevalence (ARMSTRONG, 2021) having a higher prevalence in white individuals (1.5 to 3%) than in blacks (0.3 to 0.7%) (SILVA; SILVA, 2007). A survey conducted between October 2015 and January 2016 through telephone consultation in 3,002 households in 26 Brazilian states revealed a prevalence of psoriasis of 1.31% in a total sample of 8,947 people (ROMITI et al., 2017). Second (SBD), psoriasis is most often manifested by the development of well-defined erythematous plaques, usually pruriginous, especially in regions of constant trauma to the skin, such as the elbow, knees, pretibial region, scalp, and sacral region (sacrum). The extent and number of plaques are variable, being able to affect all skin (ARMSTRONG; READ, 2020).

Psoriasis can occur in several clinical forms, but the most observed are: inverted located in intertriginous areas in erythema; seborrheic with manifestation in oily sites (scalp); guttate: presents after infectious conditions with small erythematous papules; erythrodermic, with generalized lesions in 75% or more of the body; Pustular psoriasis: lesions with pus in the feet and hands locally or generally. In 8% of psoriasis cases, there is an association of dermal manifestations with joint involvement, manifesting suddenly with pain in the fingertips and toes or large joints, such as the knee (BRASIL, 2019; BRASIL, 2022; ARMSTRONG; READ, 2020).

It is believed that the development of the disease occurs both by genetic factors (predisposition) and by environmental factors (stress, mechanical trauma, medications), namely the germ cycle, with an increase in the mitotic activity of the basal keratinocytes and consequent continuous peeling of the damaged skin. Another factor involved is local and systemic inflammation, which occurs due to the activation of T lymphocyte and epidermal keratinocyte, which stimulate the production of inflammatory mediators such as cytokines, which are essential for the pathogenesis of this disease (YAMANAKA; YAMAMOTO; HONDA, 2021; VILEFORT et al., 2022). The diagnosis of psoriasis is initially made by clinical analysis, observing the aspects of the lesions, their location and evolutionary characteristics, in addition to the existence of a family history (30% of patients have a relative with the disease). In atypical cases, the diagnosis becomes difficult and the dermatologist can request a biopsy of the lesions (MOSCARDI; OGAVA, 2017).

Therefore, the quality of life of patients is evaluated using the instrument Dermatology Life Quality Index (DLQI), containing 10 questions related to the experiences experienced by the patient in the week preceding the application of the questionnaire (BONA; FERREIRA; NETO, 2017). As

reported in several studies, psoriasis can be associated with a wide variety of psychological problems such as low self-esteem, sexual dysfunction, depression and suicidal ideation (NOWOWIEJSKA et al., 2022). Therefore, the quality of life of patients is evaluated using the instrument Dermatology Life Quality Index (DLQI), containing 10 questions related to the experiences experienced by the patient, in the week preceding the application of the questionnaire (BONA; FERREIRA; NETO, 2017).

It is a methodology developed by American researchers, which is used worldwide. This questionnaire has a score ranging from 0 to 30, subsequently grouped according to the impact on the quality of life: 0 to 1, nothing; 2 to 5, little; 6 to 10, moderate, 11 to 20, a lot; and 21 to 30, extremely (BATISTA, 2017). Based on this result, the patient's emotional state and a possible diagnosis of anxiety or depression are assessed, and there may be concomitant pharmacological and psychiatric and/or psychological treatment (MATTEI; COREY; KIMBALL, 2013). Psoriasis is currently considered an incurable disease, so treatment has the main purpose of prolonging periods of remission of the signs and symptoms of the disease (MELO; ROCHA; MAGALHÃES; SUSA, 2019).

The treatment is chosen according to the classification of psoriasis as: mild, moderate, and severe. Usually, it begins with the application of drugs administered topically (corticosteroids) and later, with the evolution of severity, systemic drugs (methotrexate, cyclosporine, acitretin) administered orally and / or injectables can be added, being able to associate therapy with phototherapy. In case of failure of these drugs, biological drugs can be prescribed (BRASIL, 2022).

Currently, the hope of psoriasis patients is therapies with biological drugs such as etanercept, adalimumab, infliximab and ustekinumab is considered one of the most effective in inducing remission and maintenance of the disease, in order to rehabilitate physical, and psychological function, in addition to providing quality of life (REID; GRIFFITHS, 2020). However, caution is advised regarding long-term effectiveness and safety. National and international recommendations suggest these drugs as the third line of treatment, which should be accompanied by careful monitoring to identify adverse effects (LOPES et al., 2014). Thus, this study aims to identify the epidemiological profile of patients with psoriasis, evaluate the impact of the disease on quality of life, and analyze the pharmacology used in these patients.

MATERIALS AND METHODS

The project is a descriptive and quantitative cross-sectional study that aims to analyze the profile of psoriasis patients. Because it is a project that involved contact with psoriasis patients during the collection of sociodemographic data, clinical data and general knowledge, this project was

submitted to Plataforma Brasil with the approval of the Research Ethics Committee of the Cesumar University Center – UniCesumar (CEP) with approval number CCAE 32251820.2.0000.5539.

In order to select the study population, we used the following inclusion criteria: to have a medical diagnosis of psoriasis; be over 18 years of age. With the exclusion criterion: the absence of medical diagnosis of psoriasis; be under 18 years of age.

The patients who agreed to participate were informed about the research's objectives and later signed the Informed Consent Form— ICF. The proposed procedure aims to ensure the confidentiality of the data and ensure the privacy of the subjects, as well as the protection of their image, preventing the stigma and use of information to the detriment of third parties and the community. Also preserving the self-esteem and prestige of those involved, all used only for the purposes proposed in the research protocol.

People with psoriasis were informed about the research and invited to participate through invitations sent on social networks (Facebook and Whatsapp groups). The individuals who agreed to participate answered a questionnaire elaborated using the online data collection platform structured in the "Google Forms": containing socio demographic questions such as gender, age, race, educational level, followed by questions about the clinical and therapeutic history regarding clinical form and severity degree and quality of life based on dermatology life quality index methodology , in addition to issues related to the treatments used and the adverse reactions observed. The questionnaire was applied in the period from 06/15/2020 to 09/30/2020.

Subsequently, the data provided for this research were grouped in spreadsheets of the Excel program (Microsoft® Office Excel) and analyzed statistically, and for the construction of the charts, Google Charts Tools was used to create the charts.

RESULTS AND DISCUSSION

Table 1 presents the socio-demographic data of individuals with psoriasis who participated in the research. The final sample consisted of 544 individuals of both sexes, with a mean age of 38.72 ± 5.4 years, ranging from 18 to 70 years old. The population studied was mostly natural from the Southeast region of Brazil (46%), followed by the Southern region.

Table 1 - Distribution of the profile of psoriasis patients according to socio-demographic characteristics.

Variable	Frequency	
	n	%
Total	544	100,0
Gender		
Male	106	17,6
Female	448	82,4
Age		
0–20	29	5,33
20-40	301	55,33
40-60	187	34,38
Mais de 60	30	5,51
Color/ race		
White	378	69,9
Black	22	4,0
Mixed	132	24,3
Yellow	12	2,1
Variable (continued)	**Frequency**	
	n	**%**
Marital status		
Single	205	37,8
Married	264	48,5
Divorced	52	9,6
Widower	23	4,10
Region where they live		
North	13	2
Northeast	37	7
Central-West	25	5
Southeast	251	46
South	154	28
Education		
Incomplete Elementary School	20	3,7
Complete Elementary School	22	4
Incomplete High School	46	8,4
Complete High School	156	28,6
Incomplete Higher Education	86	15,8
Complete Higher Education	214	39,4

Source: Own authorship (2023).

The present study revealed results similar to other national studies, where there was a higher predominance of females (82.4%) and white individuals (67.7%). As mentioned in the literature, psoriasis mostly affects white individuals, but equally among men and women (MELO et al., 2019).

As described in the study by Malachoski; Ribas (2021), females manifest signs and symptoms earlier than men. In a study conducted by Santos et al. (2013), a predominance of females and brown color was shown, which justified the difference between genotypes and regional phototypes. On the other hand, because of the coverage in the southeast region, where 55.2% of the population is white (CAMPOS, 2017), the present study found the predominance of such color. Another fact for the difference in the percentage between the sexes is that, in the dissemination of research in social media groups, there was broader participation of the female sex in our study.

Regarding education, individuals with complete higher education (39.4%) had a higher frequency, followed by completed high school 28.6%. In a study conducted in João Pessoa by Macêdo et al. (2014), there was a greater number of patients with incomplete high school, thus demonstrating the disparity of the level of education present in the country. As for psoriasis patients' marital status, married patients predominated (48.1%), followed by the single (37.8%). The issue of marital status is relevant, as psoriasis can cause changes in the couple's habits. As described in the literature, there may be an interference in the relationship with the partner due to psoriasis of 26% (PEREIRA, BRITO, 2012).

According to the interviewees, the manifestations of psoriasis began with the mean age of 23.18 years, being, therefore, a younger population. Usually, the onset of manifestations occurs at 30 years and the average age of the patients is 50 years (GUERREIRO; RODRIGUES; WALNUT; TÁVORA, 2018). This difference can be justified because social networks focus on more young adults.

According to the interviewees, 45.3% reported the presence of an individual with psoriasis in the family. Hereditary transmission is not fully understood; however, it is believed to develop due to a multifactorial inheritance or only a predisposition to the disease, which requires an environmental stimulus to express clinical manifestations (CHAVES, 2005).

The degree of severity reported by the patients was mainly of moderate manifestations (57.2%), followed by severe manifestations (26.7%) and mild (15.9%). This result is compatible with a study by Bona, Neto and Ferreira (2017), 73% of the interviewees were classified with psoriasis of moderate to severe severity. In addition, the most affected regions of the body, according to the interviewees, were: scalp (17.3%), whole body (13.1%), legs (11.8%), and elbow (9.6%), showing that the disease is located in regions of constant trauma. According to Queirós et al. (2017), up to 79% of psoriasis patients had their scalp reached, being the first site to present the lesions characteristic of the disease.

One of the main objectives of this study was to evaluate the quality of life of psoriasis patients and the Dermatology Life Quality Index (DLQI) methodology was used for this evaluation. The mean DLQI of the total sample was 14.88. Patients who declared mild psoriasis had a DLQI of 12.36 (SD of 2.5), those considered moderate DLQI of 15.30 (SD of 2.5), while those with severe form had a DLQI of 17 (SD of 2.5). According to these results, the patients had results in the range of 11-20; thus, they are classified with a very affected quality of life.

Therefore, the results demonstrate how the severity of the disease can influence the quality of life of psoriasis patients. Compared to the results obtained by Bona, Ferreira and Neto (2013), there was a very discrepant result because the mean value of the DLQI obtained was only 5.6 (SD of 5.1). This difference between the studies can be explained due to the difference in the mean age of the

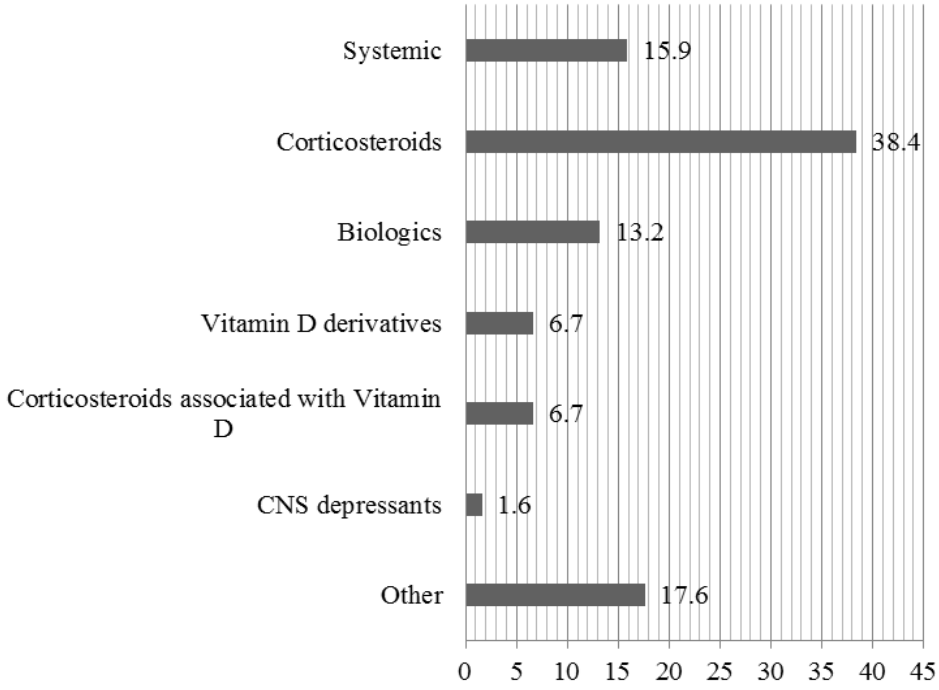
patients, since the patients had a mean age of 50 years and were being treated at the Psoriasis Outpatient Clinic of the Dermatology Service of the University Hospital of Taubaté (HUT). On the other hand, the present study covered an average age of 39.22, an age considered more active in relation to work, leisure, fun and relationship.

A study promoted by Tejada et al. (2011) with 548 Brazilian patients with dermatological diseases also analyzed the DLQI, obtaining an average of 7.7. Moreover, the disease with the highest score was psoriasis, with 15.5, close to the value found in our study.

The diseases that most impact life quality were psoriasis (median 15.5), vitiligo (13), atopic dermatitis (13), and acne (10). These data shows a similarity to that obtained in our study.

Following the purpose of this study, the pharmacotherapy used by psoriasis patients was evaluated, for this purpose an open field was made available for the interviewees to mention the medications they use. Subsequently, the drugs mentioned were grouped according to the active ingredients in: corticosteroids, systemic, biological, vitamin D analogs, combination corticosteroids and vitamin D, and others (moisturizing, anti-allergy creams, NSAIDs). Data on the drugs used presented the following results described in Chart 1.

Chart 1. Medications used in pharmacotherapy by patients with psoriasis. (Other: moisturizing creams, anti-allergy creams, NSAIDs, antifungal corticosteroids).



Source: Own authorship (2023).

As shown in Chart 1, the class of drugs most used by patients was topical corticosteroids that include clobetasol, dexamethasone, and betamethasone, among others. Corticosteroids are called the basis of topical treatment, as they are well tolerant and effective for patients with mild psoriasis

(KIM; JEROME; YEUNG, 2017). Among the systemic drugs, the following were mentioned: methotrexate (14.30%), acitretin (1.3%), cyclosporine (1.8%).

These drugs are indicated for moderate and severe severity and can be administered orally / injectable. The greater occurrence of the use of methotrexate is because it is considered the first option in systemic treatment, due to its effectiveness, safety, and easy access to patients; in cases of contraindication, it can be replaced by leflunomide, sulfasalazine, or cyclosporine.

Biological drugs were recently introduced in psoriasis therapy, and these are recommended for moderate to severe manifestations, presenting remission of the disease more quickly and still safely (LOPES et al., 2014; ARMSTRONG; READ, 2020).

The use of infliximab, etanercept, adalimumab, ustekinumab, golimumab and secukinumab has been reported in this study. A study carried out by Lopes et al. (2014) showed that of a total of 203 interviewed candidates, 190 needed biological drugs for the treatment of psoriasis (adalimumab, efalizumab, etanercept, and infliximab).

These patients obtained the drugs through an injunction (59.5%), without the need to request medication from another institution, either privately or through SUS (86.2%); and using the prerogative of free justice (72.6%). In the evaluation of adverse effects due to medication, 42.4% of the interviewees experienced some adverse effects. Then, an open field was left so that individuals could report the side effects presented due to medications.

Individuals reported the following side effects in decreasing order of prevalence: rebound effect, nausea, headache, nausea, fatigue, malaise, vomiting, fluid retention, stomach problems, hair loss, among others. According to the interviewees, the drugs that caused the most side effects are corticosteroids that cause a rebound effect, in addition, the methotrexate that is related to nausea and vomiting.

A study by Arnone et al. (2019), shows the effectiveness of corticosteroids in improving symptoms but also reports that the most frequent adverse effects were the burning sensation and burning sensation at the application site. Corticosteroids are an example of a modern drug that causes a rebound effect. This phenomenon occurs after the discontinuation (partial or complete) of the drug and produces more intense physiological and/or symptomatic manifestations than those before treatment (TEIXEIRA, 2013).

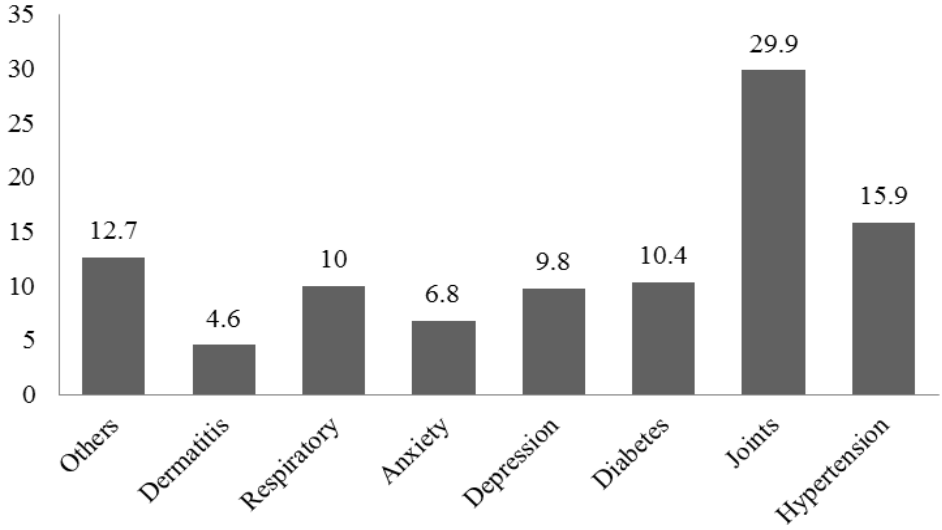
Methotrexate is a drug widely used in the treatment of psoriasis; however, it can be associated with several side effects already mentioned in the package insert, such as vomiting, nausea, stomach problems, headaches, agreement with the present study.

Patients with psoriasis have a higher risk of incident chronic kidney disease , end-stage renal disease and glomerular diseases, with renal failure need to be careful due to the possibility of

promoting changes in plasma methotrexate levels that predispose the patient to greater risks of systemic toxicity (YANG et al., 2021).

This study also evaluated the presence of other comorbidities, where 263 of the interviewees (47.56%) reported the presence of another disease (s). The main diseases are shown in Chart 2.

Chart 2. Other comorbidities reported by patients. Others (hyperthyroidism, dyslipidemia, endometriosis, gastritis, and others).



Source: Own authorship (2023).

The most frequent comorbidity reported were joint diseases, mainly psoriatic arthritis and rheumatoid arthritis, but there are studies showing the association with mental health conditions, and immune-mediated disorders (AMIN et al., 2020).

Obesity and diabetes have a strong relationship in the onset of psoriasis, because the chronic state of mild inflammation, caused by obesity, with increased levels of TNF alpha, IL-6 and c-reactive protein, also associated with an increase in BMI. Due to this state, changes in insulin resistance/sensitivity and increased oxidative stress would develop, causing free radical production (VASCONCELOS et al., 2021; PIMENTEL et al., 2022). Consequently, there is the possibility of developing diabetes or, more widely, syndrome of insulin resistance and influence of these pro-inflammatory cytokines, in the course and presentation of psoriasis (NONE; BARREIROS, 2021).

When evaluating the impact of psoriasis on patients' daily lives, a high DLQI was observed, portraying a fully affected quality of life. It can be explained by some limitations, such as the use of certain clothes, leisure, going to the hairdresser, in relationships, in sexual life, in the work environment, which occur due to a stigmatization of these individuals (NOWOWIEJSKA, 2022). This undoubtedly contributes to the development of psychosocial problems, such as depression and anxiety. As we can see in Chart 2, of the 263 individuals with other comorbidities, 12.5% have depression and 8.7% have anxiety.

Depression and anxiety may be the trigger of the onset, as psychosocial factors can help to exacerbate psoriasis in a percentage ranging from 40 to 80% of cases; or, it appears during the disease (FERREIRA; ONE; SOUSA, 2022).

CONCLUSION

The present study identified the epidemiological profile of individuals with psoriasis through social networks, highlighting characteristics of this disease in the population and demonstrating how it affects the quality of life of individuals through the dermatology life quality methodology. When evaluating the pharmacotherapy used for the disease available in Brazil and the side effects of these drugs, we found that corticosteroids cause rebound effect in several patients, while systemic medications such as methotrexate cause nausea, vomiting and headaches.

Therefore, patients with psoriasis need to have greater attention by the medical team because this disease causes stigmatization practically in all environments, causing a negative impact with the development of psychosocial diseases; it may have such an impact that 30% of patients with the disease, especially with moderate to severe type, have already considered suicides. It is expected from these results to collaborate with health professionals with the presentation of a pattern of affected individuals, assisting in the diagnosis with differentiation of other skin diseases, thus initiating a previous and humanized treatment, with prescription of drugs with more efficiency and lower adverse effects.

AUTHOR CONTRIBUTIONS

All authors contributed to the design of the study, analysis, and interpretation of the results and conclusions. All authors critically revised the manuscript, gave final approval, and agreed to be accountable for all aspects of the work.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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APPENDIX - DATA COLLECTION INSTRUMENT
EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH PSORIASIS IN THE METROPOLITAN REGION OF MARINGÁ

DATA COLLECTION INSTRUMENT

Personal Information

Name:_____

Date of Birth: / /

Gender: Male ( ) Female ( )

CITY- _____ STATE-_____

Colour: ( ) White ( ) Yellow ( ) Brown ( ) Black ( ) Indigenous

Marital status: ( ) single (a) ( ) married (a) ( ) separated, ( ) divorced ( ) widower

Level of studies:

( ) incomplete elementary school ( ) complete elementary school

( ) incomplete high school ( ) complete high school

( ) incomplete higher education ( ) complete higher education

Medical History:

1 - When you were diagnosed with psoriasis, what was your age?

2- Which body region is psoriasis manifested?

3- How severe is it?

() Mild () moderate () severe

4- Besides you, does anyone in your family present the manifestations of psoriasis?

5- What are the most common symptoms during seizures (put in order of severity)?

6- How much has your skin been affected during the last week you have been through because of itching, inflammation, pain or burning?

() extremely () a lot () a little () nothing

7- Have clinical manifestations (skin lesions) caused embarrassment or other limitations during the last week?

() extremely () a lot () a little () nothing

8-How much did your skin interfere with your shopping or sightseeing activities, at home or in public places, during last week?

() extremely () a lot () a little () nothing

9-How much has your skin interfered, in the last week, in relation to the clothes you normally wear?

() extremely () a lot () a little () nothing

10-How much has your skin affected any of your social or leisure activities in the last week?

() extremely () a lot () a little () nothing

11 - How hard has it been for you to play sports during the last week?

() extremely () a lot () a little () nothing

12 - Did your skin prevent you from going to work or study during last week?

() extremely () a lot () a little () nothing

13 - How problematic has your relationship with your partner, close friends or relatives become because of your skin?

() extremely () a lot () a little () nothing

14-To what extent did your skin create difficulties in your sex life in the past week?

() extremely () a lot () a little () nothing

Pharmacotherapy History

1- How many times have you consulted with the dermatologist during the last year?

( ) 0 ( )1 ( )2 ( )3 ( )4 ( )5 or more

2- How many medications do you currently use for the treatment of psoriasis?

( ) 0 ( )1 ( )2 ( )3 ( )4 ( )5 or more

3- How many times during the day do you use the medicine(s)?

( ) 0 ( )1 ( )2 ( )3 ( )4 ( )5 or more

4- Do you know the name of the medicines you use?

5- If so, list the name of the medicines you use.

( ) Yes ( ) No

5-What was your expectation when starting treatment?

( ) Healing ( ) decrease of injuries ( ) worsening of injuries

6- Can the medicine(s) relieve symptoms quickly?

( ) Yes ( ) No

7- Have any medications caused or still cause side effects (e.g., malaise, fatigue, nausea, vomiting, etc.)?

8- If it has a side effect, list the observed effects and which medication causes this effect.

9- How many times have you had a crisis after long periods without symptoms?

( ) 0 ( )1 ( )2 ( )3 ( )4 ( )5 or more

10- In addition to psoriasis, do you have another disease? If so, name which one.

11- Are you aware of biological therapy in psoriasis?