

# Evaluation of the immunological profile and the quality of life in patients with lichen sclerosus (LS)

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## Introduction

Lichen sclerosus is a chronic, distressing skin condition characterised by relapses and remissions. The explicit aetiology of LS is still not clear. Genetic, infectious, autoimmune, hormonal and environmental factors play a role in its pathogenesis. Moreover, chronic inflammation and oxidative stress may have considerable influence on its development. The disease affects males and females but is more prevalent in women. The most frequent location of lesions is the anogenital area. The symptoms of the disease include itching, burning, sexual dysfunctions, pain during voiding or defecation and may lead to decreased quality of life.

The aim of the study is to assess the impact of the disease on work productivity and the sexual quality of life in female and male patients with LS by means of selected, standardized questionnaires. Moreover, the research seeks to analyse the expression and correlation of inflammatory markers (IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, TNF $\alpha$ ) and the oxidative stress marker 8-OHdG (8-hydroxy-2-deoxyguanosine) in tissue obtained in a group of patients with phimosis who have undergone circumcision with histopathologically confirmed final diagnosis of genital LS. The process of patients' selection to the study group is still ongoing. The results of preliminary research – evaluation of expression of IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, TNF $\alpha$  by qPCR performed in 15 tissues are inconclusive due to the small sample size. Based on preliminary research the following hypotheses were formulated. 1. The quality of sexual life and work productivity in patients with genital lichen sclerosus is decreased. 2. An increased local expression of IL-22, IL-23, IL-12, IL-17, STAT3, STAT4, TNF $\alpha$ , 8-OHdG can be observed in patients with male genital lichen sclerosus. In the above poster data regarding the impact of the genital lichen sclerosus on work productivity and the sexual quality of life in females are presented.

## Materials and methods

Between January and December 2021 an online survey including: Work Productivity and Activity Impairment: General Health (WPAI:GH), Patient Health Questionnaire-9 (PHQ-9), The Sexual Quality of Life-Female (SQOL-F) questionnaires was conducted. Also, demographic and clinical data: age, the place of residence, professional activity, previous and current treatment, was collected. Fifty-one adult female patients with genital LS filled an online questionnaire and were enrolled in the study. The corresponding control group consisting of 45 healthy women was established. Cases and controls were matched based on gender, age, occupation and place of residence. Statistical analysis using the Mann Whitney U test, Chi-squared test was performed. A p-value  $\leq 0.05$  was considered statistically significant.

## Results

- 75% of women with genital LS declared that the disease significantly affects their sexual life.
- The remaining results are presented graphically in the Fig. 1, Fig. 2, Table 1, Table 2, Table 3.

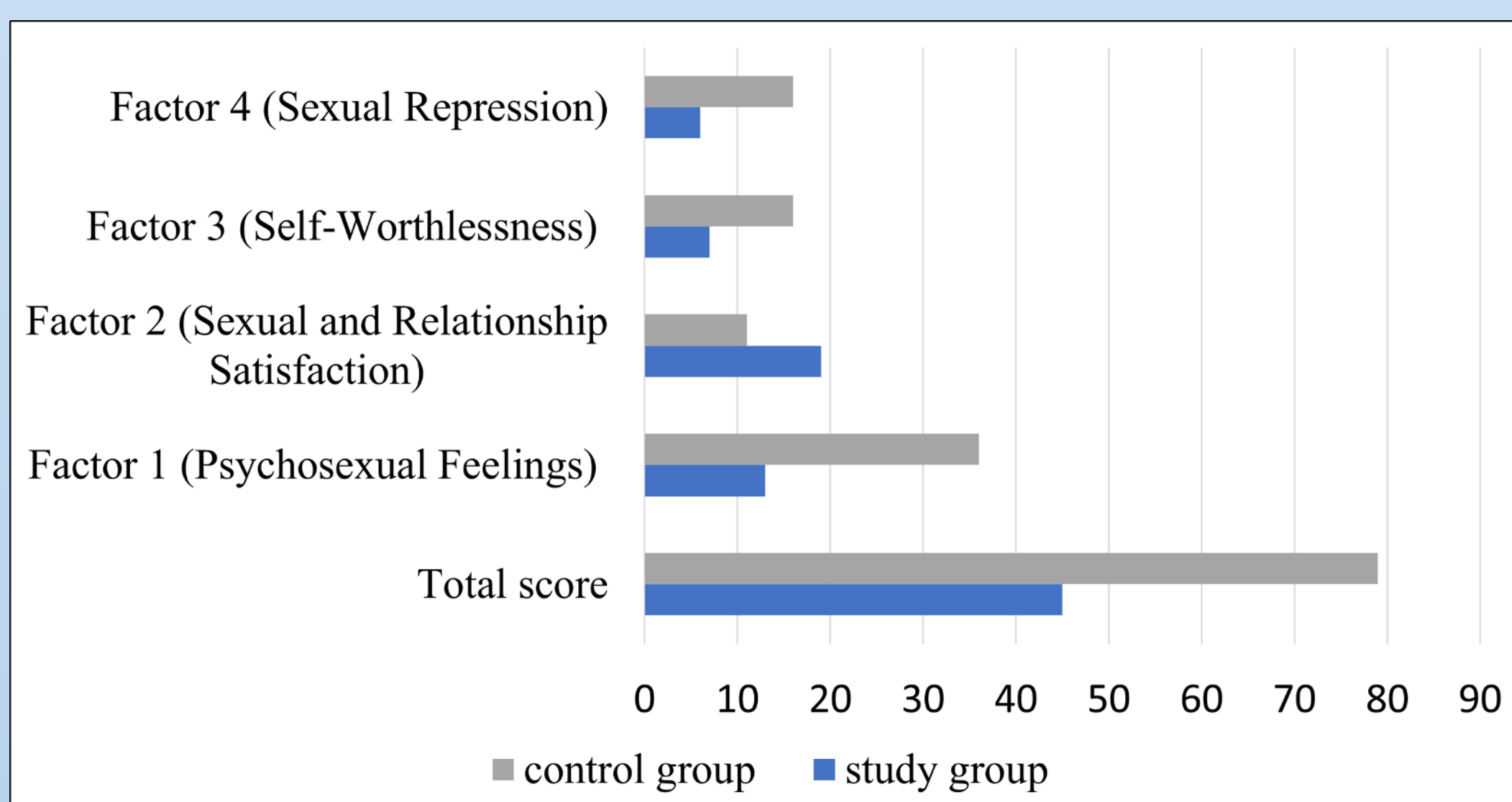


Figure 2. Comparison of the median value of the Sexual Quality of Life-Female Questionnaire results in the study and control group ( $p < 0.0001$ ).

## Conclusions

- The sexual quality of life in women with genital LS is decreased.
- Female genital LS may exert a negative impact on the professional life.
- Female genital LS is associated with a higher risk of depressive disorder.

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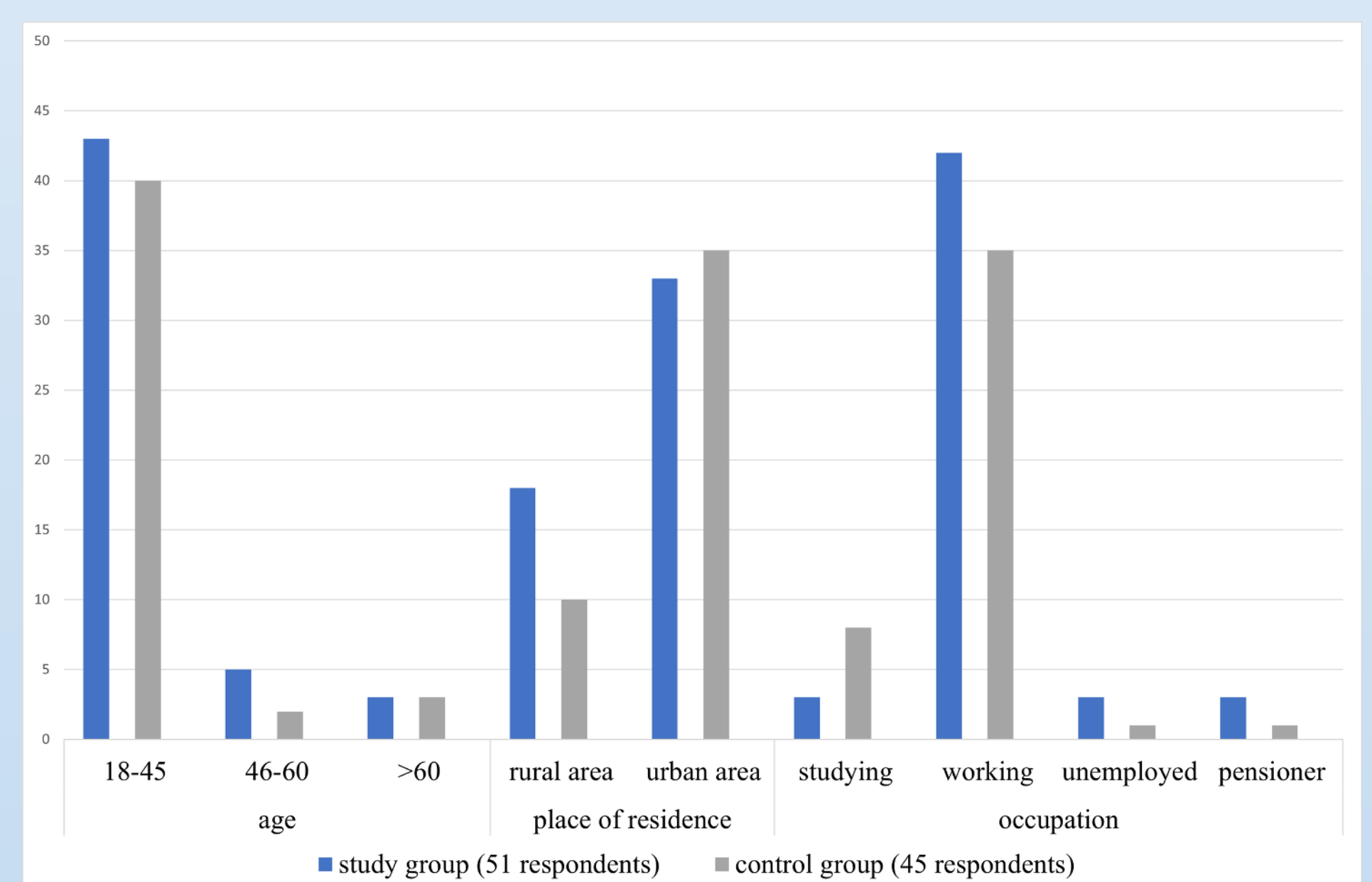


Figure 1. Characteristics of the study and control group ( $p > 0.05$ ).

Table 1. Comparison of the median value of the Patient Health Questionnaire-9 in the study and control group.

PHQ9 Parameter: Median (IQR)	study group	control group	P
Total	10(10)	6(5)	0.0006

Table 2. Frequency of depressive disorder in the study and control group based on Patient Health Questionnaire-9.

PHQ9	study group	control group	P
Major depressive syndrome	15/51 (29%)	2/45 (4%)	0.0034
Other depressive syndrome	9/51 (18%)	4/45 (9%)	>0.3408
Depressive disorder	24/51 (47%)	6/45 (13%)	0.0004

Table 3. The influence of LS on work productivity. The influence of the disease on work productivity of 44 professionally active females with genital LS based on question No. 5 from WPAI:GH questionnaire.

