



Article

The Sociotype of Dermatological Patients: Assessing the Social Burden of Skin Disease

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Abstract: Skin diseases can be the cause of a significant psychosocial burden. However, tools to screen for social interaction difficulties and diminished social networks that affect the wellbeing and mental health of the individual have not been sufficiently developed. This study is based on the sociotype approach, which has recently been proposed as a new theoretical construct implemented in the form of an ad hoc questionnaire that examines the social bonding structures and relational factors. A pilot study was conducted in Alcañiz Hospital (Spain), with a study population of 159 dermatology patients. The results showed that in both subjective estimates concerning family, friends, work, and acquaintances, and in quantitative aspects, such as social contacts, duration of conversations, and moments of laughter, there were significant differences between the sample regarding diagnostic severity, dermatological diseases, and gender. The sociotype questionnaire (SOCQ) is a useful tool to screen for social difficulties in dermatological patients.

Keywords: sociotype; social interaction; psychological burden; screening tool; dermatology



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1. Introduction

Skin diseases are among the most prevalent human illnesses; they affect between one-third and two-thirds of all individuals, irrespective of age, gender, or race [1]. They are the fourth most important cause of working years lost due to disability and have an influence on all areas of life (work, family, leisure, social activities, etc.). Furthermore, they are often a contributory factor to depression, anxiety, and other psychological disorders [2–6]. The most vulnerable population groups—children, adolescents, and the elderly—are those that suffer the worst psychosocial effects [7]. A number of recent studies have addressed the psychological consequences of skin diseases, both in a general sense and with regards to different conditions [4–6,8–11]. Results have indicated that inadequate treatment and the failure of preventative strategies is often the result of a poor evaluation of the psychosocial factors that may aggravate symptoms and prolong the recovery process.

Whilst there have been many studies that have analyzed the psychological aspects of skin diseases, the exclusively medical orientation of treatment and the relative paucity of reliable indicators have discouraged analysis of the social consequences of dermatological conditions [12]. It is in the context of a lack of viable alternatives and recognition of the true extent of the problem, as revealed by the All Party Parliamentary Group on Skin (APPGS) report [13], that we decided to consider the use of the sociotype construct. This study represents an initial examination of the quantitative aspects of the social relationships of people who suffer from skin diseases (social contacts, length or duration of conversations, and moments of laughter) [14].

The sociotype construct—and its accompanying questionnaire—aims to analyze the social interactions (bonding structures and communication relationships) that are adaptively demanded by the ‘social brain’ of the individual [15–17]. In the same way that there is scientific consensus on the validity of the constructs of the genotype and phenotype, it may also be possible to devise a metric that could be applied to the relative constancy of the social environment to which humans are evolutionarily adapted [18–20]. Therefore, the sociotype construct is proposed as an instrument that could be used to guide interventions in psychosocial and mental healthcare and provide evidence on the negative consequences of the growing social problem of loneliness [21,22]. In addition, it is also congruent with recent research in other disciplines [23–25].

The objective of this pilot study was to determine if the psychosocial burden caused by skin diseases can be detected by a sociotype questionnaire in conjunction with a number of associated quantitative factors. The innovative nature of the instrument, the relatively small sample size, and the difficulty of precise, subjective evaluation by means of self-administered questionnaires are significant limitations that can be resolved in the future by means of more extensive research projects.

2. Materials and Methods

2.1. Study Design

The sample comprised patients seen at the dermatological outpatient clinic, in Alcañiz Hospital (Spain) from October 2015 to February 2016. One hundred and fifty-nine consecutive patients were invited to participate in the study. The dermatologist examined all the participants and registered the diagnosis and the severity of their skin condition. Cases of psoriasis, acne, alopecia, eczema, neurodermatitis, and nevus were included. Participants were informed about the study and, after giving written consent, were asked to complete the questionnaire and return it to the consultant. An online Internet platform “SurveyMonkey” was used for data gathering and for statistical support.

The questions included a range of sociodemographic variables, the sociotype test, and several complementary tests on loneliness, general health, and personality. The questionnaires were self-administered or (where necessary) completed with the assistance of a researcher or a nurse. In all cases the responses were based on self-assessment.

2.2. Participants

The final number of participants ($n = 159$) was relatively low but considered as suitable for the pilot study. Inclusion criteria were: being 18 years or older, able to read and write Spanish, and not suffering from severe psychosis.

The sample was mainly composed of white adults between the ages of 18–95 years (mean = 38.09; SD = 16.58). All participants were Spanish nationals; 64.8% were women; 50.9% were married or in a relationship; 19.5% had a university degree; 45.3% were in paid employment at the time of the study.

2.3. Procedure and Ethics

The procedure took approximately thirty minutes. Each participant was given information about the study which included the aims of the project, the advantages/disadvantages of participating, a letter of informed consent, and an assurance of anonymity (in line with Spanish Organic Law 15/99 on Protection of Personal Data and Law 41/02 on Patient Autonomy). A research psychologist or a hospital nurse were on hand to give support where required. The Ethical Committee of Aragón (CEICA), Spain had previously approved the study.

2.4. Questionnaires and Measurements

The sociodemographic variables were sex, age, marital status, residence, education, employment, and income.

The Sociotype Questionnaire (SOCQ) has 16 items that evaluate the quality of relationships through the dimensions ‘Family’, ‘Friends’, ‘Acquaintances’, and ‘Education/Work’ (including 4 questions for each dimension). It uses a Likert-type scale with 6 response options from 0 (never) to 5 (always). There are another 16 complementary questions on other aspects of social relations and 15 quantitative questions on social contacts, length or duration of conversations, moments of laughter, and preferred communication channels.

The General Health Questionnaire (GHQ-12) is a well-known screening instrument used to assess psychological distress. It is user-friendly and short: There are just 12 items [26]. Its psychometric properties have been studied in several countries and different population types. The Spanish validated version [27] was used ($\alpha = 0.76$), and the correction values assigned were from 0 to 3.

The Revised UCLA Loneliness Scale (RULS) is a one-dimensional, 20-item scale designed to measure subjective feelings of loneliness and social isolation [28]. It is a revised version of the original UCLA Loneliness Scale. The Spanish validated version [29] with suitable psychometric properties was used ($\alpha = 0.94$). Participants rated each item on a Likert-type scale from 1 (never) to 4 (often).

The Eysenck Personality Questionnaire-Revised (EPQ-R) measures four dimensions that account for most of the variances in personality [30]. A Spanish version [31] with suitable psychometric properties was used. The EPQ-R dimensions are: ‘Extraversion’ ($\alpha = 0.82$), ‘Neuroticism’ ($\alpha = 0.86$), ‘Psychoticism’ ($\alpha = 0.73$), and ‘Social Desirability’ ($\alpha = 0.76$). The Spanish version has 83 items that are answered with ‘Yes’ or ‘No’.

2.5. Statistical Analysis

The statistical analysis was conducted with SPSS software (IBM SPSS Statistics for Windows, Version 19.0). The description of the population characteristics was by means of numbers and percentages for categorical variables, whilst mean and standard deviations (SD) were employed for quantitative variables. As the variables for the gender comparison and the comparison between skin diseases did not follow a normal distribution, the Mann-Whitney U test was introduced.

Spearman correlations were obtained for the most important psychological features of dermatological patients, as measured by the UCLA, GHQ-12, the EPQ-R, and the sociotype dimensions, taking into account their possible confounders—sociodemographic variables (gender, marital status, socioeconomic status) and diagnostic severity.

3. Results

3.1. Sociodemographic Data

A total of 159 patients completed the study, with the following skin conditions: 47 (29.6%) psoriasis, 19 (11.9%) acne, 10 (6.3%) alopecia, 7 (4.4%) eczema, 18 (11.3%) neurodermatitis, and 58 (36.5%) had nevus. There were 103 women and 56 men; their mean age was 38.09 (SD 16.58). Data on severity, residence, civil status, and income are given in Table 1.

Table 1. Sociodemographic data.

Sex, Women (%)	103 (64.8)
Age, Mean (SD)	38.09 (16.6)
Skin disease (%)	
Psoriasis	47 (29.6)
Acne	19 (11.9)
Alopecia	10 (6.3)
Eczema	7 (4.4)
Neurodermatitis	18 (11.3)
Nevus	58 (36.5)

Table 1. Cont.

Severity (%)	
Asymptomatic	41 (27.3)
Mild	84 (56.0)
Moderate	15 (10.0)
Severe	10 (6.7)
Civil Status (%)	
Married/cohabiting	81 (50.9)
Single	68 (42.8)
Separated/divorced	5 (3.1)
Widowed	5 (3.1)
Residence (%)	
Living alone	14 (8.8)
With a partner	40 (25.2)
With partner and sons	46 (28.9)
With family members	53 (33.3)
With Friends	4 (2.5)
Other	2 (1.3)
Education (%)	
No school certificate but able to read and write	9 (5.7)
Basic education	45 (28.3)
High school	72 (45.3)
University	31 (19.5)
Other	2 (1.3)
Employment (%)	
Student	36 (22.6)
Homemaker	22 (13.8)
Unemployed receiving benefits	2 (1.3)
Unemployed not receiving benefits	14 (8.8)
Employed	70 (44.0)
Not working due to ill health	2 (1.3)
Retired	9 (5.7)
Other	4 (2.5)
Income Level (%)	
Minimum Wage (MW)	56 (38.9)
1–2 MW	69 (43.4)
2–4 MW	16 (11.1)
>4 MW	3 (2.1)

3.2. Analysis of the Sociotype Questionnaire

3.2.1. Factorial Analysis

The results of the factorial analysis of the 16 questions used with the study sample are presented in Table 2. All the items in the four dimensions ('Family', 'Friends', 'Acquaintances' and 'Work/Study') obtained positive weights with the exception of question number three in the 'Acquaintances' dimension. Reliability for the 16 questions was tested with Cronbach's alpha (α -Cronbach = 0.83). The Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity test were used to determine the suitability of the sample for factor analysis. For the dimensions 'Family', 'Friends', and 'Acquaintances', the KMO = 0.77; Bartlett = 442.23 ($p < 0.001$); and the % of explained variance = 54.6. When the 'Work/Study' dimension was included, the KMO = 0.80; Bartlett = 213.69 ($p < 0.001$); and the % of explained variance = 54.6.

Table 2. Factorial analysis.

General Sociotype (SOCQ)	Mean	SD	h^2	w_1	w_2	w_3
Family						
I speak and relate to my family	4.49	0.91	0.54	0.07	0.72	−0.03
My family is important to me	4.85	0.49	0.32	0.01	0.59	−0.07
My family members care about me	4.67	0.76	0.47	−0.11	0.71	0.04
I have fun and laugh with my family	4.13	1.02	0.35	0.01	0.57	0.02
Friends						
I speak and relate to my friends	4.03	1.12	0.58	0.72	0.1	−0.01
I have friends to talk to and share problems	4.01	1.28	0.49	0.75	−0.06	−0.07
I feel it is important to maintain relationships with friends	4.54	0.93	0.41	0.68	−0.09	−0.01
I have fun and laugh with my friends	4.25	0.9	0.4	0.57	0.04	0.08
Acquaintances						
I speak to, and comfortably relate to, my acquaintances	3.88	1.07	0.29	0.16	0.2	0.33
It is hard for me make conversation with people that I do not know	3.25	1.32	0.39	−0.07	0.01	0.65
It is easy for me to gain the support of acquaintances	2.64	1.49	0.06	0.17	0.12	−0.01
Relationships with my acquaintances are difficult	3.8	1.05	0.66	0.02	−0.08	0.83
Work/Study			Mean	SD	h^2	w_1
I speak to, and satisfactorily relate to, my peers			4.1	1.17	0.55	0.74
I trust my peers			3.58	1.23	0.67	0.82
In conversations, my peers listen to my opinions			3.68	1.19	0.49	0.7
I am valued by my peers			3.72	1.18	0.52	0.72

Scoring: 0 (never) to 5 (always) for all items except numbers 10 and 12 that had a 'reverse' score: 5 (never) to 0 (always). The general SOCQ covers all items and is made up of 4 subscales: 'Family' (items 1 to 4); 'Friends' (5 to 8); 'Acquaintances' (items 9 to 12), and 'Work/Study' (items 13 to 16).

3.2.2. Comparison of Results According to Skin Disease

Results for the different skin conditions for the dimensions of the questionnaires (SOCQ, EPQ-R, UCLA, GHQ-12) are shown in Table 3. Means and standard deviations are shown for each category. The general SOCQ only considered the dimensions of 'Family', 'Friends', and 'Acquaintances'; the 'Work/Study' dimension was taken separately because a significant proportion of the study sample (32.1%) were not in paid employment. There were significant differences between the skin conditions in the dimensions of 'Friends', 'Extraversion', and 'Anxiety'.

Table 3. Comparison of results according to skin diseases.

	Psoriasis (n = 46)	Acne (n = 19)	Other (n = 33)	Nevus (n = 58)	p ¹
General	47.61	51.47	46.27	48.57	0.087
SOCQ (3D)	−6.87	−4.33	−9.64	−7.28	
SOCQ	17.57	18.84	17.67	18.66	0.056
Family	−2.87	−1.34	−2.63	−2.04	
SOCQ	16.5	18.68	16	16.93	0.007
Friends	− 2.87	− 2.47	− 3.84	−3.34	
SOCQ Ac-	13.54	13.95	13.5	13.51	0.932
quaintances	−3.24	−2.48	−3.35	−3.35	
SOCQ	14.98	16.95	14.17	14.86	0.143
Work/Study	−3.68	−2.42	−5.1	−3.91	
EYSENCK	12.98	14.79	11.03	13.67	0.033
Extraversion	−4.19	− 2.62	− 5.3	−3.92	
EYSENCK	11.93	10.21	13.41	11.6	0.204
Neuroticism	−5.36	−4.71	−5.35	−5.45	
EYSENCK	5.31	6.37	6.34	5.05	0.068
Psychoticism	−3.01	−3.27	−2.59	−2.92	
EYSENCK	11.69	10.79	11.94	11.11	0.648
Simulation	−3.62	−3.54	−3.64	−4.21	
UCLA	34.28	31.47	36.69	32.95	0.32
Loneliness	−9.54	−7.1	−10.98	−9.73	
GHQ-12	13.52	8.47	13.41	10.77	0.003
Anxiety	− 6.72	− 3.88	− 5.12	−5.79	

¹ The Kruskal-Wallis test was used to determine levels of significance. Significant differences in the multiple comparisons between groups are shown in bold.

3.2.3. General Correlation between the Questionnaires

A Spearman correlation analysis was conducted between the dimensions of the general SOCQ ('Family', 'Friends', 'Acquaintances', and 'Work/Study') and the following dimensions considered by the other questionnaires: 'Loneliness' (UCLA); 'Anxiety' (GHQ-12); 'Extraversion', 'Neuroticism', 'Psychoticism', and 'Simulation' (EPQ-R). Most of the relationships were significant (Table 4). The most significant correlations were between the general sociotype (SOCQ) and the other sociotype dimensions. The least correlated dimensions were 'Psychoticism' and 'Simulation'. It is worth noting that the majority of correlations between SOCQ and the other questionnaires were significant.

Table 4. General correlations between the questionnaires.

	MN	SD	1	2	3	4	5	6	7	8	9	10	11
1. General SOCQ (3D)	48.15	7.54	1.00										
2. Family	18.15	2.40	0.63 **	1.00									
3. Friends	16.82	3.29	0.78 **	0.34 **	1.00								
4. Acquaintances	13.57	3.20	0.81 **	0.43 **	0.41 **	1.00							
5. Work/Study	15.02	4.00	0.57 **	0.40 **	0.58 **	0.40 **	1.00						
6. Loneliness	33.94	9.72	−0.62 **	0.45 **	−0.53 **	−0.47 **	−0.49 **	1.00					
7. Anxiety	11.86	5.98	−0.45 **	0.37 **	−0.37 **	−0.31 **	−0.33 **	0.53 **	1.00				
8. Extraversion	13.05	4.32	0.62 **	0.32 **	0.52 **	0.52 **	0.33 **	−0.53 **	−0.37 **	1.00			
9. Neuroticism	11.90	5.35	−0.44 **	−0.27 **	−0.34 **	−0.37 **	−0.29 **	0.58 **	0.64 **	−0.33 **	1.00		
10. Psychoticism	5.56	2.95	−0.08	−0.04	−0.10	−0.02	−0.06	0.21 *	0.22 **	0.06	0.27 **	1.00	
11. Simulation	11.41	3.83	0.10	0.18 *	0.03	0.08	0.18 *	−0.13	−0.16 *	−0.04	−0.12	−0.28 **	1.00

Mean (MN) standard deviation (SD). Spearman correlation coefficient values: * $p < 0.05$; ** $p < 0.01$.

3.2.4. Quantitative Values: Social Contacts

The number of social contacts for the different dimensions of ‘Family’, ‘Friends’, ‘Acquaintances’, and ‘Work/Study’ are presented in Table 5. Results are for the complete sample population, categorized by gender and diagnostic severity: asymptomatic (27.3%); mild (56%); and moderate/severe (16.7%). The values for men and women in the dimensions of ‘Acquaintances’ and ‘Work/Study’ are particularly noteworthy.

Table 5. Differences in the number of interactions according to gender and severity.

	Sample Population	Gender		Severity		
		MN		MN		
		(SD)		(SD)		
		Male	Female	Without Symptoms	Mild	Moderate to Severe
No. Family	10.03 (7.58)	9.03 (7.27)	10.56 (7.4)	11.96 (7.61)	10.22 (7.5)	8.05 (6.9)
No. Friends	10.24 (11.86)	11.79 (12.81)	8.96 (10.16)	10.53 (16.53)	10.07 (8.88)	8.19 (6.54)
No. Acquaintances	140.2 (236.16)	188.53 (266.56)	127.95 (237.64)	127.56 (213.34)	186.68 (295.51)	77.91 (80.83)
No. Work/Study	6.68 (7.39)	8.69 (9.16)	5.28 (5.1)	6.13 –5	6.9 (6.64)	6.72 (11.21)

Values in the table appear as means (MN) and standard deviations (SD).

The relationships between the sociotype and the length or duration of conversations with family members, friends, workmates/study colleagues and acquaintances are shown in Table 6. Half the relationships are statistically significant. While the number of family members does not correlate with any of the other scales or subscales, the number of friends, work/study colleagues and acquaintances all correlate with the SOCQ global scale and the different subscales.

Table 6. Conversation times according to gender and diagnostic severity.

	Population Sample	Male MN (SD)	Female MN (SD)	Without Symptoms MN (SD)	Mild MN (SD)	Moderate to Severe MN (SD)
Time daily—Family	2.11 (1.8)	1.86 (1.81)	2.24 (1.79)	2.61 (1.86)	1.93 (1.8)	2.13 (1.72)
Time weekly—Friends	2.63 (1.9)	2.72 (1.82)	2.58 (1.96)	3.09 (1.86)	2.51 (1.89)	2.39 (1.97)
Time weekly—Acquaintances	1.45 (1.59)	1.49 (1.46)	1.44 (1.67)	1.62 (1.71)	1.34 (1.51)	1.61 (1.69)
Time—Work/Study	2 (1.98)	2.12 (1.97)	1.93 (1.99)	2.31 (2.08)	1.93 (1.94)	2 (1.95)
Time daily—Total	4.69	4.58	4.74	5.59	4.41	4.7

All the times are expressed in hours, either daily or weekly. Values in the table appear as means (MN) and standard Deviations (SD).

The results concerning the moments of laughter each day, categorized by gender, diagnostic severity, and age, are presented in Table 7.

Table 7. Number of laughs per day according to gender, diagnostic severity, and age.

	General Population	Male (%)	Female (%)	Without Symptoms (%)	Mild (%)	Moderate to Severe (%)	18–35 (%)	36–65 (%)	>65 Years (%)
laughs daily ≤4	29	6 (3.90%)	23 (15%)	1 (0.70%)	18 (12.30%)	9 (6.20%)	7 (4.60%)	19 (12.60%)	2 (1.30%)
laughs daily >4	124	48 (31.40%)	76 (49.70%)	39 (26.70%)	63 (43.20%)	16 (10.90%)	69 (45.70%)	46 (30.50%)	8 (5.30%)
	NS			<i>p</i> -value 0.002			<i>p</i> -value 0.01		

All the values in the table refer to number of people in the different categories; in between parenthesis the corresponding percentage referred to the whole sample. Significant differences are shown in bold.

4. Discussion

The psychosocial burden caused by dermatological diseases is receiving more and more attention. The previously mentioned European study [5] dealt with depression, anxiety, the impact of negative life events, and suicidal thoughts among dermatological patients who are at significantly higher risk than the general population. However, similar studies on the loss of social relationships and its consequences for people who suffer skin conditions have not really been addressed.

Results of this pilot study (despite the relatively small sample) indicated that the use of the sociotype questionnaire (SOCQ) and other complementary questionnaires can provide evidence on a series of social effects. The sociotype appears to be a reliable tool that correlates with the UCLA, GHQ-12 and the EPQ-R. The questionnaire was internally robust (Cronbach's alpha = 0.83), and the supplementary questions on social contacts, duration of conversations, and moments of laughter also provided statistically significant results. Finally, the diagnostic severity of dermatological diseases seems to have an important effect on the social lives of those that suffer them.

Regarding the sample, 64.8% of the patients in this study were women, a similar or slightly lower proportion than in other studies [32–34]. Indeed, gender bias is found in most dermatological conditions: a study of 149,614 outpatient clinics at Northwestern Medicine found a female to male ratio of 1.8:1 [35].

4.1. Robustness of the New Questionnaire

The factorial analysis of the questions related to the sociotype questionnaire is given in Table 2. Results for the 16 questions used with the sample of dermatological patients confirm the suitability of the four dimensions ('Family', 'Friends', 'Acquaintances', and 'Work/Study') that were obtained in the initial sociotype study [16]. All the questions had positive weightings and explain a large part of the variance (54.6%) for both the general SOCQ and the work/study SOCQ. The reliability of the measurements was shown by Cronbach's alpha (= 0.83); an alpha of 0.7 to 0.9 is considered as an acceptable degree of internal consistency. The Kaiser-Meyer-Olkin (KMO) and Bartlett tests of sphericity were used to confirm sampling suitability for the factor analysis. The rests for the three dimensions of 'Family', 'Friends', and 'Acquaintances' were: KMO = 0.77; Bartlett = 442.23 ($p < 0.001$); which explained 54.6% of the variance. With the four dimensions (including 'Work/Study'), the KMO = 0.80; Bartlett = 213.69 ($p < 0.001$); which also explains 54.6% of the variance. Given that the value of KMO was greater than 0.5 and the significance level of Bartlett's sphericity was less than 0.05, the sample is considered to be suitable for factor analysis in both cases.

4.2. Reliability

The sociotype questionnaire performed remarkably well with regards to its correlations, with its own dimensions and with the other questionnaires when measuring

'Loneliness' (UCLA), 'Anxiety' (GHQ-12), and 'Personality' (EPQ-R). There was high internal consistency for the correlations between the SOCQ score and its dimensions, with positive scores that were well above 0.5 (0.57, 0.63, 0.78, and 0.81). There were also significant negative correlations with 'Loneliness', 'Anxiety', and 'Neuroticism' (0.62, 0.45, and 0.44). There was a positive correlation with 'Extraversion' (0.62). All of these correlations have Spearman correlation values of <0.01 . It is also important to note that the correlation values of 'Loneliness' and 'Anxiety' with each of the four sociotype dimensions were statistically significant.

The analysis of the performances of the SOCQ, EPQ-R, UCLA, and GHQ-12 questionnaires in relation to the different pathologies (psoriasis, acne, and nevus; as well as alopecia, eczema, and neurodermatitis, taken as 'other') revealed significant differences concerning the sociotype dimension 'Friends' and EPQ-R's 'Extraversion' (Table 3). Furthermore, in the case of 'Anxiety', there were significant differences between patients' groups. Despite the significant values, the results obtained do not strongly justify (perhaps due to the small sample size) the existence of significant differences regarding the social burden of these pathologies. It is clear that more extensive research with larger samples is required.

4.3. Quantitative Sociability Questions

Values for the number of social bonds in each relational category ('Family', 'Friends', 'Acquaintances', and 'Work/Study'), presented in Table 5, are within the boundaries of the well-known "Dunbar number" [20]. Although most of the values for gender and diagnostic severity are not statistically significant (once again, this may be due to the small sample size), there are statistically significant results with regards to gender and the dimensions 'Acquaintances' and 'Work/Study'. The most direct interpretation would be that in our sample women were less socially oriented than men.

Issues concerning social bonds are highly debated in contemporary social studies. In our case, the result of 167.15 for the total sample (218.04 for men and 152.75 for women) is close to the Dunbar number of 150–200 social bonds for each individual. Nevertheless, the variances are too high and indicate that these contacts do not follow the Gaussian (normal) law; they probably follow the Planckian law, as with many other physical and biological self-organization phenomena [36]. We must of course bear in mind the innate differences between human and animal data, albeit both species being mammalian. There has been much controversy in the social networks field about these figures [17–19,37–40]. However, they have not been discussed in the biomedical literature. In a dermatological context, our results suggest that diagnostic severity is related to the loss of social bonds, as evidenced by the reduced social networks of severely diagnosed patients. Further research is required on this unexplored issue.

The results given in Table 6 (about duration of conversations in relation to diagnostic severity and gender) were not significant, with the exception of the total conversation time of the asymptomatic category when compared to the other diagnostic categories. As with social bonds, severity seemed to affect the duration of conversations, with women devoting more time to the family than other social interactions. The totals obtained (around 4–5 h per day) were close to the empirical values cited in the literature [41].

Finally, there were significant results concerning moments of laughter and the categories of diagnostic severity and age (Table 7). Moments of laughter systematically (and significantly) decreased as diagnostic severity increased, and at the same time they significantly decreased with age. These results are in line with studies that have highlighted the important role that laughter plays in the construction of social bonds [42–44]. Given that laughter is essentially concerned with ongoing relationships [45,46], if the number of social bonds and conversation times are reduced it is logical to assume that moments of laughter will also be more limited.

5. Conclusions

By way of a conclusion, it can be said that both the sociotype questionnaire and the complementary quantitative questions appear to provide evidence on the psychosocial burden that dermatological patients suffer. More specifically, the dimensions of the sociotype ('Family', 'Friends', 'Acquaintances', and 'Work/Study') may provide valuable indications as to the social interventions that will be most beneficial for the patients. In addition, we explored quantitative aspects of the relationships (structure of social bonds, conversation times, and moments of laughter) that are almost absent in the biomedical literature, although they may be useful for understanding the social environment of the patient.

The innovative nature of the instrument, the small sample size, and the difficulty of precise subjective estimations in self-administered questionnaires are important limitations, which should be resolved through more extensive future research. However, despite these limitations, several interesting outcomes have been obtained that may be useful to bear in mind with dermatological patients.

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