

Application of the SRQ20 and the protocol of psychological assessment in patients with leprosy in a Reference Centre in Brazil

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Summary This study aims to apply the protocol of psychological assessment (PAP) and the SRQ-20 to analyse the psychological profile of 130 leprosy patients, in order to evaluate the incidence of Common Mental Disorders (CMD), and screen patients with higher risk of psychological distress. The following results were found in the PAP: 31.53%, 23.8% and 16.9% reported an unsatisfactory childhood, adolescence and adulthood, respectively; 31.53% are afraid of being discriminated against and 16.9% experienced discrimination. Also, 13.07% reported drastic life changes due to leprosy; 29.23% have low self-esteem, 31.53% have real fear and 22.3% have phantasmal fear. In the SRQ-20, the prevalence of CMDs was 32.3%, with the majority being female, married, with low education (primary education), low self-esteem, and with a drastic change in life. **Conclusion:** This is one of the few studies on the psychological profile of leprosy patients demonstrating the importance of the application of investigative technologies in psychopathological screening, aiming on adherence to treatment and psychotherapy planning. Furthermore, it provides support for reflection on the integrality of healthcare for leprosy patients and the importance of psychologists in health teams.

Keywords: Leprosy, Psychological Assessment, Common Mental Disorders, Psychological treatment

Introduction

In Brazil, most professional teams that help leprosy patients don't have the psychological understanding, or the instruments to evaluate the patients in order to direct them to mental health services, nor a protocol that helps the health professionals to understand all of the emotional instability that the disease brings. Although Brazil has the second most leprosy cases in the world and there have been several research studies that have lead to progress in terms of the physical care of patients, it is easy to observe that there are still only a few studies that aim to understand psychological aspects of the patients.¹

In addition to the physical effects, the drugs that are used to treat leprosy and its reactions can have psychological effects. Dapsone, one of the drugs that comprises multidrug therapy (MDT), may cause adverse effects such as neuropsychiatric manifestations with frequent intense headaches and fatigue, which may cause psychosis. Prednisone is another drug used to treat leprosy reactions and that might cause mental disorders, such as: euphoria, mood changes, severe depression with psychotic symptoms, hyperirritability and insomnia.^{2,3}

The psychologist must have the correct instruments that help improve the assessment of the patient with leprosy, and when possible, accompany them throughout the duration of the treatment. It is important to identify the patient's emotions and reactions to the disease and evaluate them by checking if something could interfere with their acceptance of both treatment and self-care.⁴

A Psychological Assessment Protocol (PAP) was proposed by Fongaro e Sebastiani⁴ to evaluate the contents related to the life of the patient from childhood to the present day. PAP also evaluates the emotions linked to the disease, from the general emotional state and attitude towards the disease and their life. For instance, whether they were victims of discrimination; if they are afraid of being discriminated against; if there have been any drastic changes in their life since the disease, their fears regarding the disease, and so on. PAP has been effective for psychological evaluation of patients with chronic diseases.

Another instrument called the Self Reporting Questionnaire (SRQ-20), a psychological assessment scale, has been recommended by the World Health Organization⁵ for evaluating common mental disorders (CMD) in primary care services.⁶

Common mental disorders indicate medical conditions in individuals with symptoms of anxiety, depression and/or somatisation which don't fulfill all of the criteria regarding mental illness according to the International Classification of Diseases.⁷ Sometimes the stigma of leprosy can affect the mental state of the patient.⁸

Materials and Methods

TYPE OF STUDY AND POPULATIONAL SAMPLE

This is an observational cross-sectional study with a sample of 130 patients diagnosed with leprosy treated at the National Reference Center in Sanitary Dermatology and Leprosy (CREDESH) of the Clinical Hospital (HC) located at the Federal University of Uberlândia (UFU), in Minas Gerais.

CRITERIA FOR INCLUSION AND EXCLUSION

The survey included patients at the moment of diagnosis of leprosy who had not received specific treatment with MDT for leprosy and/or for leprosy reactions. The survey excluded those patients that were younger than 18, individuals with incapacity to understand or participate in the interview, patients who refused to participate in the interview and individuals from other services under the previous and/or current medication use for leprosy and/or leprosy reactions.

Methods

IMPLEMENTATION OF INSTRUMENTS AND DATA COLLECTION

Two analytical instruments, one called Psychological Assessment Protocol – PAP⁴ – and the other called SRQ-20 (Self Reporting Questionnaire) were applied. PAP includes demographic and clinical data, involves surveying the patients about their life history and their emotional state about being sick. SRQ-20 is a questionnaire to identify common mental disorders. These instruments were applied by the psychologist to patients with leprosy, with the data collection being carried out from August 2011 until September 2013.

CRITERIA FOR DEFINING THE CMD

The questionnaire contains 20 ‘yes’ or ‘no’ questions related to symptoms and problems that have occurred during the last 30 days before the interview. Each affirmative response received the value ‘1’ and the final score was the sum of these values. The final results are correlated with the probability of the presence of non-psychotic disorders, ranging from 0 (No probability) to 20 (most likely). As recommended for this instrument, the cut-off adopted was 7/8 for men and women, respectively, for the determination of the presence of CMD, with a sensitivity of 86.33% and specificity of 89.31%.⁹

STATISTICAL ANALYSIS

We used the statistical method of Multiple Logistic Regression to determine the degree of the CMD’s dependance in relation to the predictive variables described in the tables of this study, attributing significancy level of 0.05, by using the Statistical Package for the Social Sciences (SPSS), version 22.0 in Portuguese.

ETHICAL CONSIDERATIONS

The research Project for execution of the work was submitted to the Ethics Committee of the Federal University of Uberlândia, under the approval of the protocol number 499/1. CEP/UFU 150/11 on August 12, 2011.

Results

The epidemiological and clinical results for the PAP of the 130 patients evaluated are shown in Tables 1 and 2, respectively. Regarding gender, there was a small predominance of males (54.6 %; 71/130).

Table 1. Epidemiological and clinical data distribution of patients diagnosed with leprosy – Multiple logistic regression, CREDESH/HC/UFU, 2013

Variables		<i>n</i>	%	<i>P</i> value	IC 95%
Gender	Female	59	45.4	< 0.001	0.05–0.341
	Male	71	54.6		
Ethnic group	White	54	41.5	0.8268	0.61–1.87
	Mulatto	49	38.5		
	Black	27	20.8		
Level education	Illiterate	16	12.4	0.687	0.56–1.47
	Basic Education	91	69.7		
	Secondary School	19	14.7		
	Higher education	4	3.1		
Religion	Evangelic	28	21.5	0.192	0.34–1.24
	Catholic	90	69.2		
	Spiritualist	2	1.6		
	Doesn't have	9	7		
	Others	1	0.7		
Marital status	Single	18	13.8	0.851	0.70–1.34
	Married	59	45.4		
	Stable union	26	20		
	Separated	16	12.3		
	Widower	11	8.5		
Age group	18 – 25	8	6.2	0.725	0.37–1.99
	26 – 35	13	10		
	36 – 45	35	26.9		
	46 – 59	41	31.5		
	≥60	33	25.4		
Degree of disability in diagnosis	0	82	63.1	0.901	0.73–2.64
	1	31	23.8		
	2	17	13.1		
Total		130	100		

Regarding ethnicity, 41.5% (54/130) were white, 38.46% (49/130) were mixed race (brown) and 20.78% (27/130) were black. The most prevalent religion was Catholic, with 69.23% (90/130) of the participants being of that faith.

Approximately fifty percent of the sample analysed presented an elementary school education (46.15%; 60/130). The percentage with higher education was 3.1% (4/130).

More than 60% of the patients were either married (45.39%; 59/130) or in a stable relationship (20%; 26/130). The economically active population (EAP), aged between 18 and 59, was the majority (74.61%; 97/130), (Table 1).

The patients reported that the disease was diagnosed between 6 months to 7 years after the symptoms of leprosy appeared. They also report that the delay in the diagnosis is linked not only to the delay in seeking a health care facility, but often because they had been misdiagnosed as having other skin or nerve diseases. Also, even after the discovery that the symptoms could be related to leprosy, the wait for confirmation of the diagnosis in the reference centre was, on average, 1 month.

Table 2. Distribution of leprosy patients by clinical form and operational classification – Multiple logistic regression, CREDESH/HC/UFU, 2013

Clínica presentation	Operational Classification				P-value	IC 95%
	Paucibacillary		Multibacillary			
	n	(%)	n	(%)		
I	4	11.8	0	0.0	0.385	0.64–1.19
TT	9	26.5	0	0.0		
BT	21	61.8	42	44.2		
BB	0	0.0	10	10.5		
BL	0	0.0	19	20.0		
LL	0	0.0	24	25.3		
Total	34	100	95	100		

Clinical presentation I: indeterminate; TT: tuberculoid; BT: borderline-tuberculoid; BB: borderline-borderline; BL: borderline-lepromatous; LL: lepromatous leprosy.

The degree of incapacity at diagnosis (GID) of most patients was equal to zero (63.1%, 82/130) and 36.9% (48/130) with a degree of 1 or 2, where a degree of 2 (13.1%; 17/130) means deformity (Table 1).

In the studied sample, the majority of patients presented multibacillary forms of the disease (73.8%; 95/130). Regarding the clinical form, the highest frequency was of BT forms (97%; 105/130). The smaller percentage was patients with indeterminate forms (I) and tuberculoid (T) (Table 2).

Table 3 shows the distribution of patients according to attributes investigated in the PAP and the correlation with the possibility of having CMD or not.

In the PAP, 31.53% (41/130) reported an unsatisfactory childhood. According to the Statute of Children and Adolescents – SCA¹⁰ a child is a person younger than 12 years old while an adolescent is a person between the ages of 12 and 18. A patient's adulthood was described as the period after the age of 18 to the present day. 23.8% (30/130) of the patients said that their adolescence was not satisfactory and 16.9% (22/130) reported that the adult life until the current day as not being satisfactory. The other descriptions of the attributes of the PAP results are detailed in Table 3.

In this study the prevalence of CMD in patients with leprosy was 32.30% (42/130), detected by the SRQ-20. Most patients detected with CMD were female (76.19%; 32/42) with this difference being statistically significant ($P < 0.05$). The result of the odds ratio showed that females are 7.23 times more likely to have CMD in this population affected with leprosy (Table 4).

The vast majority of patients without CMD had a satisfactory childhood (75%). This result was significant, indicating an association between CMD and unsatisfactory childhood ($P < 0.05$). The results showed that only the phases of childhood and adulthood affected the occurrence of CMD (Table 5).

It was found that the variables, drastic life changes due to the disease and low self-esteem showed significant differences between the proportions of those who had and those who did not have CMD ($P < 0.05$). Of the people who didn't have CMD, there was a greater percentage of non drastic changes because of the disease (90.9%; 80/88) than those who had

Table 3. Association of PAP variables with the absence or presence of Common Mental Disorders – CMD using SRQ20 – Multiple logistic regression, CREDESH/HC/UFU, 2013

Variables		CMD				P-value (TMC)	IC 95%
		No		Yes			
		n	%	n	%		
Satisfactory childhood ¹	No	22	25.3	19	44.2	0.111	0.23–11.16
	Yes	65	74.7	24	55.8		
	Total	87	100	43	100		
Satisfactory adolescence ²	No	17	19.5	13	30.2	0.465	0.30–1.75
	Yes	70	80.5	30	69.8		
	Total	87	100	43	100		
Satisfactory adulthood ²	No	11	12.6	11	25.6	0.238	0.21–1.48
	Yes	76	87.4	32	74.4		
	Total	87	100	43	100		
Experienced discrimination ³	No	71	80.7	30	71.4	0.116	0.68–3.73
	Yes	17	19.3	12	28.6		
	Total	88	100	42	100		
Afraid of being discriminated	No	64	72.7	25	59.5	0.064	0.93–4.33
	Yes	24	27.3	17	40.5		
	Total	88	100	42	100		
Drastic life changes due to leprosy ⁴	No	80	90.9	33	78.6	0.025	0.93–7.35
	Yes	8	9.1	9	21.4		
	Total	88	100	42	100		
Self-esteem	High	69	78.4	23	54.8	0.002	1.51–7.36
	low	19	21.6	19	45.2		
	Total	88	100	42	100		
Real or phantasmal fear ⁵	Real	27	31.0	14	32.6	0.491	0.74–1.86
	Phantasmal	19	21.8	11	25.6		
	Doesn't have	41	47.1	18	41.9		
	Total	87	100	43	100		

¹ Childhood not satisfied with the presence of factors such as: severe education, violence, poor financial conditions, abandonment, alcoholism, parental separation; or other events that patients considered as factors that interfere in childhood quality.

² Adolescence or unsatisfactory adulthood when there was some event that the individual judged interference in your life: domestic violence, partner of alcoholism (a), separation, death in the family.

³ Afraid of being discriminated various situations such as: fear shown by the family of contracting leprosy are for sharing household items, objects for hygienic use, sleep in the same room, fear of contamination partner for the sexual act, or only for visiting relatives.

⁴ Drastic Changes Due to Illness: can not practice their craft, household activities and/or leisure due to physical disability.

⁵ Phantasmal fear (fear of transmission, no longer able to work, to stay with sequels, fear of losing members, the disease has no cure, dying, have to be isolated, he could never perform an activity in leisure, fat with treatment), even if your treatment. does not directed to such consequences.

CMD (78.4%; 33/42). Regarding self-esteem, there was a higher percentage with high self-esteem among the patients who didn't have CMD than in those who did (Table 5). When applying the odds ratio (OR), the results showed that people who have low self-esteem are three times more likely to have CMD.

In short, between the epidemiological variables and the PAP and SRQ-20 attributes, patients with higher prevalence of CMD were females, individuals with lower levels of

Table 4. Distribution of leprosy patients according to gender and CMD occurrence. CREDESH/HC/UFU, 2013

CMD	Gender			Variable	Coeffi.	p	OR	IC for OR	
	Male <i>n</i> (%)	Female <i>n</i> (%)	Total <i>n</i> (%)					Low	High
Yes	10 (7.7)	32 (24.6 ^a)	42 (32.3)	Gender	- 1.98	0	7-23	0.06	0.32
No	61 (46.9)	27 (20.8)	88 (67.7)	Constant	0.17	0.52	1-18		
Total	71 (54.6)	59 (45.4)	130 (100)						

^a $\chi^2 = 23.755$; *P*-value = 0.0000 (*P* < 0.001); percentages calculated relating to the total of 130 leprosy patients.

education, married, who didn't experience a satisfactory childhood or adulthood, with low self-esteem and that experienced some drastic change in life due to leprosy (Table 6).

Discussion

This study is one of the few showing the psychological profile of patients with leprosy in Brazil, and showing the importance of having a psychotherapeutic plan throughout the treatment of the disease.

Table 5. Association of the variables from the PAP with absence or presence of CMD with the method of multiple logistic regression using the SRQ20. CREDESH/HC/UFU, 2013

Variables		CMD		<i>P</i> -value (CMD)
		No <i>n</i> (%)	Yes <i>n</i> (%)	
Victim of discrimination	No	71 (80.7)	30 (71.4)	0.1167
	Yes	17 (19.3)	12 (28.6)	
	Total	88 (100)	42 (100)	
Afraid of being discriminated	No	64 (72.7)	25 (59.5)	0.0649
	Yes	24 (27.3)	17 (40.5)	
	Total	88 (100)	42 (100)	
Drastic Changes Due to Illness	No	80 (90.9)	33 (78.6)	0.0258
	Yes	8 (9.1)	9 (21.4)	
	Total	88 (100)	42 (100)	
Self-esteem	High	69 (78.4)	23 (54.8)	0.0028
	Low	19 (21.6)	19 (45.2)	
	Total	88 (100)	42 (100)	
Real or phantasmic fear	Real	27 (31.0)	14 (33.3)	0.3962
	Phantasmic	19 (21.8)	10 (23.8)	0.3993
	Doesn't have	41 (47.1)	18 (42.9)	0.3268
	Total	87 (100)	42 (100)	
Phase of illness	Bargain	24 (27.3)	6 (14.3)	0.05
	Denial	20 (22.7)	14 (33.3)	0.099
	Revolt	8 (9.1)	4 (9.5)	0.4706
	Depression	8 (9.1)	4 (9.5)	0.4706
	Acceptance	27 (30.7)	13 (31.0)	0.4861
	Secondary gain	1 (1.1)	1 (2.4)	0.2855
	Total	88 (100)	42 (100)	

Table 6. Results of multiple logistic regression for variables of epidemiological, clinical, attributes of the PAP and the CMD. CREDESH/HC/UFU, 2013

Variables	Coefficient	P-value	O.R.	IC to O.R.	
				Inferior	Superior
Childhood	-0.6055	0.1757	0.5458	0.2272	1.3112
Adolescence	-0.2598	0.5920	0.7712	0.2983	1.9941
Adulthood	-0.4589	0.4136	0.6320	0.2103	1.8991
Victim of discrimination	0.3777	0.4697	1.4589	0.5240	4.0617
Fear of being discriminated against	0.7483	0.1191	2.1135	0.8246	5.4168
Drastic life changes due to illness	0.6979	0.2305	2.0094	0.6421	6.2882
Self-esteem	1.1387	0.0102	3.1227	1.3091	7.4484
Real or phantasmic fear	-0.0529	0.8455	0.9484	0.5570	1.6150
Stage of illness	0.0390	0.6933	1.0398	0.8565	1.2623
Gender	-1.9310	0.0000	0.1450	0.0599	0.3513
Ethnic group	0.0504	0.8576	1.0517	0.6065	1.8236
Education	-0.0084	0.9695	0.9916	0.6442	1.5264
Religion	-0.2956	0.3429	0.7441	0.4039	1.3706
Marital status	-0.1033	0.5993	0.9018	0.6134	1.3259
Age group	-0.0014	0.9948	0.9986	0.6654	1.4988
Degree of incapacity at diagnosis – GID	0.1374	0.6611	1.1473	0.6207	2.1205
Operational Classification	0.0006	0.9991	1.0006	0.3148	3.1807
Clinical presentation	0.0187	0.9320	1.0189	0.6630	1.5657

Our study showed a prevalence of CMD in a little more than 1/3 of leprosy patients without the intervention of multidrug treatment. Previous studies have shown a variation in the prevalence of CMD in different populations from 20.8% to 36%.^{11–15}

The PAP data was correlated with the possibility of having CMD or not, and showed that gender was a significant factor. Although the majority of the sample was composed of men, the highest prevalence of CMD was in women, which indicates that the females have a seven times greater chance of having CMD. In previous studies with other populations in which the SRQ-20 was applied, a higher prevalence of CMD was also found in women, as demonstrated in the population of nurses¹⁶ and the population of an urban area in Bahia, in Brazil.¹⁵

The mental health of women has been studied by some researchers, and they claim that females are more vulnerable to stress than men, because of their greater emotional involvement with the lives of those around them.¹⁷

This study has shown that an unsatisfactory childhood and adulthood could be risk factors for a greater probability of developing CMD. A study conducted by Sameroff *et al.*¹⁸ on the role of the environment in determining the mental health of children found that children considered as high risk were those with mental health problems in the family, low expectations from the parents, poor mother/baby interaction, low maternal education and no family support. These children were 24 times more likely to have some kind of deficiency.

Concerning adult life, stress is one of the main environmental factors associated with mental illness. Some periods of life appear to be particularly more vulnerable to the effects of stress on the body, such as childhood. Stress during adolescence, adult or elderly life may contribute to the occurrence of mental illness, physical illness and psychological distress. Mental diseases of adults, such as depression, bipolar disorder, schizophrenia, anxiety disorders (such as post-traumatic stress disorder), disorders from alcohol, drugs and suicide, are related to stress during childhood.¹⁹

Through this study, it can be noted that self-esteem is a major factor for the occurrence of CMD. In a study with patients who have chronic diseases²⁰ 64.8% reported that the disease had interfered with their work, studies and home activities while 53.5% showed that the chronic disease had an impact on their self-esteem.

The study of Eidt²¹ argues that the issues that undermine and lead to loss of self-esteem is the discrimination suffered by patients with leprosy and the difficulties encountered in performing household and professional tasks when the physical sequelae take effect, preventing the individual from performing simple tasks such as buttoning clothes, putting on shoes or signing their names.

The survey also warns about the stigma that still exists about the disease and the lack of publicity in the media. Many patients had already had the multibacillary clinical form, with a degree of incapacity of 2, and reported that they suffered some kind of discrimination even at the moment of diagnosis. This also confirms the need for emotional support for the patient with leprosy, since despite having long-term treatment, many patients may also develop other types of both physical and emotional sequelae.²²⁻²⁴

There are certain limitations of the study. The sample consisted of patients in a Reference Centre that may differ from the general population. The questionnaire did not ask if they had any prior knowledge about leprosy and only asked how long it took for the symptoms to appear. Also, the PAP can be used only if the medical professionals that assist the patient with leprosy include a psychologist.

The approach is differential both by applying the questionnaire for screening CMD (SRQ-20) and by the use of PAP. The SRQ-20 evaluated the last 30 days of the patient's life (before the interview) and was seen as an easy tool to handle, with low cost and one that can be applied by other health professionals in primary care as long as there is a specialised expert to receive the patient. The use of PAP enabled the following of a medical guide to evaluate the patient's life history and the emotions linked to becoming ill.

The psychological interviews and questionnaires for the detection of CMD provide support for a patient's initial evaluation by focusing on the psychotherapeutic planning and adherence to treatment, aside from also providing support for the reflection about the integrality of the assistance for the leprosy patient. This way, the psychologist will be able to identify the psychological characteristics of individuals who are more susceptible to suffer from the adverse effects on their psyche, such as psychosis and/or other mood disorders related to medications, especially Dapsone, one of the components of MDT, and Prednisone, which forms the basis of the treatment for the neuritis and/or leprosy reactions.²⁵

The psychologist may also promote effective intervention proposals, promote actions of adherence to the treatment and promote the combat of social stigma in order to minimise the impact of the disease on an individual's life with leprosy, and contribute to the health team that assists them.^{26,27}

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List of acronyms and abbreviations

CREDESH – National Reference Center for Sanitary Dermatology and Leprosy
 CEP – Research and Ethics Committee
 CMD – Common Mental Disorders
 CO – Operating Rating
 SCA – Statute of Children and Adolescent
 BT – Borderline-Tuberculoid
 BB – Borderline-Borderline
 BL – Borderline-Lepromatous
 GID – Degree of Incapacity at Diagnosis
 HC – Clinical Hospital
 I – Indeterminate
 LL – Lepromatous-Leprosy
 MB – Multibacillary
 MS – Ministry of Health
 PAP – Psychological Assessment Protocol
 PB – Paucibacillary
 MDT – Multidrug Therapy
 OD – Ods Ration
 WHO – World Health Organization
 SRQ-20 – Self Reporting Questionnaire
 TT – Tuberculoid
 UFU – Federal University of Uberlândia

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