

# Assessment of psychological, psychiatric, and behavioral aspects of patients with cellulite: a pilot study

## Avaliação dos aspectos psicológicos, psiquiátricos e comportamentais de pacientes com celulite: estudo-piloto

### ABSTRACT

**Introduction:** About 50% of the population reports some kind of dissatisfaction related to their physical appearance. Patients' motivations for seeking cosmetic treatment are not yet fully understood.

**Objectives:** To evaluate the behavioral, psychological, and psychiatric characteristics of patients with cellulite.

**Methods:** In the first phase of this cross-sectional, descriptive and observational study, forty-six volunteers answered a self-administered questionnaire. In the second phase, a psychiatrist administered the M.I.N.I. questionnaire.

**Results:** Most interviewees described the forthcoming of cellulite during puberty. Discomfort caused by cellulite was mainly felt at the beach (87%) and pool (67,4%). Almost half of patients reported having been subject to an embarrassing comment related to their cellulite, while 78.3% felt pressure to seek treatment. The eating disorders described included the use of drugs, compulsive ingestion of food, feeling guilty after eating, and self-induced vomiting. The most frequently found specific emotional disorder was generalized anxiety.

**Conclusions:** Patients with cellulite can experience emotional distress and negative feelings in everyday situations. Changes in specific behaviors and the presence of psychological and psychiatric co-morbidities can be present in some patients.

**Keywords:** cellulitis; skin; behavior; questionnaires.

### RESUMO

**Introdução:** Cerca de 50% da população refere algum tipo de insatisfação com a aparência. Os hábitos comportamentais que motivam os pacientes a procurar tratamentos cosméticos ainda não estão completamente entendidos.

**Objetivos:** Avaliar os aspectos comportamentais, psicológicos e psiquiátricos de pacientes com celulite.

**Métodos:** Estudo transversal observacional descritivo. Na primeira etapa, 46 voluntárias responderam a questionário autoaplicável e, na segunda etapa, um psiquiatra aplicou o questionário Mini.

**Resultados:** A maioria das entrevistadas referiu o início das lesões de celulite após o início da puberdade. Os ambientes que mais causaram desconforto quanto à celulite foram praia (87%) e piscina (67,4%). Quase metade das pacientes referiu já ter recebido algum tipo de comentário constrangedor em razão da sua celulite e 78,3% delas sentem-se pressionadas a procurar tratamentos. Distúrbios de alimentação apresentados incluíram uso de drogas, ingestão compulsiva de alimentos, culpa após as refeições e indução de vômitos. O transtorno emocional específico mais encontrado foi ansiedade generalizada.

**Conclusões:** Pacientes com celulite podem apresentar desconforto emocional e sentimentos negativos em situações comuns do dia a dia. Alterações em hábitos comportamentais específicos e presença de comorbidades psicológicas ou psiquiátricas podem estar presentes em algumas pacientes.

**Palavras-chave:** celulite; pele; comportamento; questionários.

## Original Article

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## INTRODUCTION

Approximately 50% of the population has reported some degree of dissatisfaction with his or her appearance. Part of this group seeks cosmetic procedures to correct features that are considered undesirable in order to improve their self-esteem and confidence and, consequently, their quality of life.<sup>1</sup>

The demand for minimally invasive cosmetic treatments has been expanding every year; there was a 77% increase in cosmetic procedures in the United States between 2000 and 2010.<sup>2</sup> In Brazil, the demand for cosmetic treatments has always been high, and has grown considerably in recent years. Therefore, it is necessary to understand the psychological factors that underpin people's motivations for these treatments, as well as their expectations and anticipated psychological benefits.<sup>3</sup>

The term cellulite is used to describe the skin's surface when it resembles an orange peel or padding. The condition is prevalent in women of all races, especially in Caucasians.<sup>4</sup> There seems to be an important hormonal component in cellulite, given that it is rarely found in male patients, mostly affects women after menarche, and reportedly worsens with the use of contraceptives. There are three etiological hypotheses for cellulite: inflammatory factors, vascular alterations, and changes in the conjunctive tissue's septa.<sup>4</sup>

Since there is greater exposure of the body in tropical regions, cellulite has become a concern among women living countries such as Brazil. As a result, cellulite can have a significant social impact and drive the search for specific treatments.<sup>5</sup>

Making the distinction between emotionally healthy people seeking to improve their appearance and those with self-image perception disorders can be difficult in a physician's daily practice, and dermatologists may be the first professional to have contact with such patients. Ishigooka and colleagues reported that more than 47.7% of patients who seek cosmetic procedures meet some of the criteria for the diagnosis of mental disorders,<sup>6</sup> the most common of which are body dysmorphic disorder and narcissistic and histrionic personality disorders.<sup>7</sup> A recent study conducted in Brazil found that cosmetic patients had a higher prevalence of body dysmorphic disorder (14%) compared to patients from the general dermatology outpatient clinic (6.7%) and to controls without skin conditions or complaints (2%).<sup>8</sup>

Few studies in the literature address the psychological aspects of patients seeking treatment for cellulite. Based on the hypothesis that understanding the emotional context of each patient will help the dermatologist's assessment, this study's objective was to investigate the psychological and behavioral characteristics, and the presence of psychiatric symptoms, of women who sought medical care for cellulite.

## METHODS

A descriptive cross-sectional observational study was carried out involving patients who sought care for cellulite at the Brazilian Center for Studies in Dermatology (Centro Brasileiro de Estudos em Dermatologia – CBED) between 2008 and 2011. All participants signed a term of free and informed con-

sent, and the study protocol was approved by the Ethics Committee of the Hospital Moinhos de Vento de Porto Alegre (Approval Opinion number 2008/115).

The inclusion criteria were: women aged 18–45 with cellulite (regardless of the degree of severity), who had completed primary education and had the ability to understand the questionnaire, and the absence of serious systemic and/or serious skin conditions that could cause psychological distress. Volunteers who presented significant hearing or visual problems, or difficulty understanding the study's language, were excluded.

The volunteers initially answered a self-administered questionnaire with 50 questions on demographic, anthropometric, and lifestyle aspects and their use of medications. Issues linked to the psychological aspects of cellulite, symptoms related to eating disorders, and time and money spent on cosmetic procedures were also assessed.

The women who consented to participate in the second stage of the study were then interviewed by a psychiatrist (CB), who administered the key questions related to each of the psychiatric disorders contained in the Mini International Neuropsychiatric Interview (MINI). If this initial assessment was positive for any psychiatric disorder, the volunteer would be reassessed with the MINI, using questions relevant to the diagnostic criteria of the suspected disorder, in order to confirm or deny the psychiatric diagnosis.

The MINI is a short (15–30 minutes) standardized questionnaire that is consistent with the DSM-III-R/IV and CID-10 criteria. It is intended for use in clinical practice, research, primary care, and psychiatry, and can be used by clinicians after a short training session (1–3 hours).<sup>9</sup> It was developed by researchers at the Pitié-Salpêtrière Hospital in Paris and the University of Florida 10, and is widely used to select patients in multicenter psychopharmacological trials, in other clinical protocols, in psychiatry, and in primary care in Europe, the USA, and Brazil. The Brazilian translation of the updated version of the MINI DSM-IV (version 5.0) has been previously validated.<sup>10</sup>

The results regarding the reliability and validity of the MINI are broadly satisfactory. Compared to the CIDI (Composite International Diagnostic Interview) and the SCID-P (Structured Clinical Interview for DSM-III-R), the MINI proved to be broadly adequate for diagnosing disorders. Given that it cuts the evaluation time in half (or more) compared to long questionnaires, the sensitivity and specificity of the MINI are considered to be very satisfactory.<sup>10</sup>

The data were described using mean values and standard deviations for the continuous variables, and percentages for the category related information. The statistical analyses were performed using SPSS 16.0 (Chicago, IL, USA).

## RESULTS

The study included 46 volunteers. The majority of patients were Caucasian, with higher education and permanent employment, and used oral contraceptive (Table 1). Most volunteers

described the onset of cellulite during puberty. The group's body mass index (BMI) was  $23.5 \pm 3.4$  kg/m<sup>2</sup> (range: 16–39 kg/m<sup>2</sup>); only 23.9% (n = 11) of patients presented with excess body weight (BMI > 24.9 kg/m<sup>2</sup>) and only two patients were considered obese (BMI > 29.9 kg/m<sup>2</sup>).

The environments described by the patients as causing the most discomfort regarding their cellulite were the beach (87.0%), swimming pool (67.4%), gym (19.6%), and bath

(8.7%), with 4.3% reporting no discomfort. Situations and environments involving leisure (beach, swimming pool, and parties), everyday life, and media (magazines and television) were cited as responsible for stressful and uncomfortable situations by 76.1%, 39.1%, and 8.7% of the patients, respectively.

Of the volunteers evaluated, 84.8% regularly observed the presence of cellulite in other women, 28.3% reported comparing themselves to others regarding cellulite, 69.6% believed

**Tabela 1 – Characteristics of the 46 patients studied**

Variable		Frequency
Ethnicity	Caucasian	36 (78,3%)
	Black	3 (6,5%)
	Other	2 (4,5%)
	Did not complete	5 (10,9%)
Education	Secondary complete	10 (4,7%)
	Higher incomplete	13 (28,8%)
	Higher complete	21 (45,7%)
	Post-graduate	2 (4,3%)
Permanent employment	Yes	42 (91,3%)
	No	4 (8,7%)
Moment when noticed presence of cellulite	After puberty	263 (56,6%)
	> 30 years old	2 (4,3%)
	After pregnancy	2 (4,3%)
	After losing weight	2 (4,3%)
	After gaining weight	2 (4,3%)
	Other	9 (19,6%)
Family history of cellulite	Yes	41 (89,1%)
	No	2 (4,3%)
	Did not know	3 (6,5%)
Sought information about treatment for cellulite	Yes	27 (58,7%)
	No	19 (41,3%)
Other aesthetic treatments	Yes	20 (43,5%)
	No	25 (54,3%)
	Did not complete	1 (2,2%)
Menstrual cycle	Regular	33 (71,7%)
	Irregular	6 (13%)
	Menopause	1 (2,2%)
	Interrupted	2 (4,3%)
	Did not complete	4 (8,7%)
Use of contraceptive method	Oral	27 (58,7%)
	Other	7 (15,2%)
	Does not use	8 (17,4%)
	Did not complete	4 (8,7%)

that men note and observe the presence of cellulite, and 41.3% reported having received at least one embarrassing comment about their cellulite. Most volunteers (78.3%) were embarrassed about their cellulite and felt compelled to seek treatment. Table 2 describes the frequency of feelings reported by patients when they look in the mirror and observe their cellulite.

The compulsive ingestion of food at least once was reported by 84.8% of the volunteers, and more than half (58.7%) felt guilty after meals about the quantity and quality of the food they had eaten. Some volunteers mentioned the habit of inducing vomiting (10.9%) and counting calories (17.4%), with 67.4% reporting the use of weight loss medications – with or without medical advice. The volunteers also reported great concern about the presence of body fat (89.1%). Table 3 describes the drugs used by the patients for losing weight; sibutramine was the most frequently used drug. Table 4 shows the time (in hours per week) and spending (in monthly monetary units) on cellulite, the severity assessed by the volunteer, and the expectations when seeking treatment. Table 5 shows the frequency of use of different types of treatments for cellulite.

Of the patients evaluated in the study, 43.5% had already had some type of cosmetic treatment for diverse conditions. About 9.0% had undergone botulinum toxin injections, 15.2% some type of facial peel, 4.3% some type of laser, 6.5% some type of plastic surgery, and 21.7% reported other procedures.

Regarding the psychiatric diagnoses found, five patients presented with generalized anxiety disorder, one presented a specific phobia, two presented compulsive eating, and one presented attention deficit disorder with hyperactivity. The other patients did not present criteria for recognized psychiatric disorders.

## DISCUSSION

This pilot study assessed the behavioral and psychological issues of women with cellulite who seek cosmetic treatments that mitigate the condition, and researched comorbid psychiatric diagnoses. The data obtained can be of great help in future studies aimed at establishing the psychological profile of patients who seek treatment for cellulite and understanding the feelings associated with the condition, to contribute to a strong and

**Table 2 – Description of feelings related to cellulite**

Variable	Frequency (%)
Disappointment	49
Embarrassment	28,3
Frustration	21,7
Sadness	21,7
Guilt or anger	13
Tries to hide the condition	10,9
Impotence	8,7
Absence of feelings	6,5

**Table 3 – Medications used to lose weight**

Variable		Frequency
Use of weight loss medications	Yes	31 (67,4%)
	No	15 (32,6%)
Sibutramine	Yes	13 (28,3%)
	No	33 (71,7%)
Laxatives	Yes	12 (26,1%)
	No	34 (73,9%)
Prescribed formulations	Yes	8 (17,4%)
	No	38 (82,6%)
Phytotherapies	Yes	6 (13%)
	No	40 (87%)
Amphetamines	Yes	5 (10,9%)
	No	41 (89,1%)
Diuretic	Yes	5 (10,9%)
	No	41 (89,1%)

empathetic doctor/patient relationship.

Most women who seek treatment for cellulite feel uncomfortable about the condition and can develop morbid behaviors linked to the condition or become preoccupied with their appearance. The study data related to eating habits stand out. The majority of volunteers (84.8%) had eaten compulsively at

**Table 4 – Time, monthly expenditure, cellulite severity perceived by the patient, and expectations when seeking treatment**

Cellulite		Frequency
Hours per week spent treating cellulite	<3h	12 (26,1%)
	3h-6h	10 (21,7%)
	>6h	4 (8,7%)
Monthly expenditure on cellulite	> R\$ 100,00	8 (17,4%)
	< R\$ 100,00	8 (17,4%)
	Zero	27 (58,7%)
Self-assessed cellulite severity	Mild	6 (13%)
	Moderate	28 (60,9%)
	Severe	12 (26,1%)
Expectations when seeking treatment	Improve	20 (43,5%)
	Totally eliminate	16 (34,8%)
	Total	
	Other	6 (13,0%)

**Table 5 – Types of treatment for cellulite used by the studied patients**

Variable		Frequency
Diet and physical exercise	Yes	9 (19,6%)
	No	35 (76,1%)
Creams	Yes	23 (50%)
	No	22 (47,8%)
Lymphatic drainage	Yes	18 (39,1%)
	No	27 (58,7%)
Lasers	Yes	3 (6,5%)
	No	42 (91,3%)
Carboxytherapy	Yes	4 (8,7%)
	No	41 (89,1%)
Mesotherapy	Yes	4 (8,7%)
	No	41 (89,1%)
Endermotherapy	Yes	3 (6,5%)
	No	42 (91,3%)
Subcision®	Yes	4 (8,7)
	No	41 (89,1%)
Liposuction	Yes	2 (4,3%)
	No	43 (93,5%)

some point. Negative feelings such as guilt after eating (mentioned by more than half of the volunteers, 58.7%) and great concern about the amount of body fat were observed, and are fac-

tors that can be related to the indiscriminate use of anorectic and laxative medications.

In the present study 78.3% of volunteers reported feeling embarrassed by their cellulite and compelled to seek treatment. A small percentage of patients (6.5%) felt influenced by their partners to seek treatment, while 28.3% were influenced by the media.

The concern with physical appearance is directly related to leisure and daily activities, causing attitudes of isolation and low self-esteem, and others that negatively affect the quality of life.

A previous study by Hexsel and others showed that treatment of cellulite improves patients' quality of life and self-esteem.<sup>11</sup>

The authors acknowledge some limitations of the present study; its results must be interpreted with these in mind. The number of volunteers was small, the sample individuals were chosen by convenience, and all study participants sought medical care for treating cellulite, which can be considered a selection bias and a factor responsible for the high degree of discomfort found among volunteers. The absence of a control group, which has another aesthetic complaint or even no complaints about cellulite and/or other cosmetic issues, can be considered limiting. Those factors, however, do not invalidate the study's results, since this is an initial pilot study that has found a high degree of psychological discomfort in patients with cellulite. These factors can be controlled in future studies in order to obtain new data.

## CONCLUSIONS

Disruptions and emotional distress are frequently reported by patients with cellulite, who also describe negative feelings in everyday situations. Knowledge and understanding of patients with cosmetic complaints, and their feelings, habits, and behavioral and psychological characteristics – in addition to their expectations regarding the treatments – are very important for dermatologists and can lead to better results. ●

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