# Some Epidemiological Aspects Of Sensitive Skin Syndrome In Female In Varna Region

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***Abstract*—Sensitive Skin Syndrome (SSS) is officially definite as syndrome with unpleasant sensations like itching, pain, numbness in response to stimuli that usually do not cause such sensations. In most of the cases it is self-defined condition without objective pathological findings. The aim of the study was to establish the epidemiological aspects of SSS in female in Varna region. Objective and Methods. The presented study includes 304female self-diagnosed with SSS. Demographic data were collected from registers of Medico-Aesthetic Center "Medea" Varna from April 2017 till April 2019. The model of the study investigates age distribution, location, frequency according to the skin phototype, presence of other dermatoses, and seasonal fluctuations. Results. Results show the overall frequency of SSS was 31, 97%. As 174 (57, 23%) diagnosed in aesthetic visitors and 130 (42, 77%) in those with some health problem. The distribution according to the underlining health problem was as follow: acne vulgaris 28 (21, 55%), seborrhea 26(20%), atopic skin 27(19, 99%), allergies 33(25, 39%), others 18(13, 07%). Prevalence of SSS in middle age 41-45 (19, 09%) was established, and the most affected zones were face -54, 9%, and more precisely -cheeks- 61, 7%, and eyelids-14, 2%.Conclusion. SSS is a serious health problem. The data from our study show that age factors have a significant impact on this syndrome. In addition, skin type and phototype also influenced SSS. On the contrary the underlying changes in skin status have no significant role. The literature sources reveal that this is first epidemiological study of SSS in our country.***

***Keywords—Sensitive Skin Syndrome; epidemiology; female***

## INTRODUCTION

The official definition of sensitive skin is accepted by the International Forum for the Study of Itch (IFSI). This syndrome is determined by the appearance of unpleasant sensations (stinging, burning, pain, pruritus, and tingling sensations)in response to stimuli that usually do not cause such sensations [1].

In 1987 Maibachused the term Cosmetic Intolerance Syndrome, describing the condition of increased skin sensitivity without any visible changes [2]. The term "status cosmeticus" is later adopted [3].Literary and clinical observations show an increase in patients complaining of sensitive skin [4, 5]. Predominantly this is a self-diagnosis based entirely on the patient's history [6]. The condition is provoked not only by cosmetic products but also by a number of environmental factors [7].

On the other hand the lack of objective indicators makes it difficult to study, analyze and forecast SSS. The necessity of this study is due to the increasing of its importance and the lack of an adequate approach to these patients.

## OBJECTIVE AND METHODS

To assess the tendencies in distribution of SSS were analyzed data collected from registers of Medico-Aesthetical Centre "Medea" Varna from April 2017 till April 2019. Data include reports of 972 female visitors at a mean age 43.17±14.45years (range 22-68 years) with different skin or aesthetic problems. Diagnosis SSS was self-assessed in 304 cases (31, 97%); 174 (57, 23%) aesthetic visitors and 130 (42, 77%) with health problem.

We analyzed age distribution, seasonal distribution, location, and frequency according to the skin phototype.

Patients were asked to record their current skin sensitivity using the 10-item version of Sensitive Scale. As well as the problem of SSS, this scale is relatively new and exists in a 14-item and a 10-itemvariants [8-9]. The Sensitive Scale-10 was the dermatology-specific instrument developed by a group of 4 experts. It comprises 10 items, giving a sum score ranging between 0 and 140.The skin irritability was measured from 0 to 10 by a visual analog scale. This validated self-assessment questionnaire has been used in many epidemiological studies of SSS in different countries and is available in English, Chinese, Portuguese, Spanish and Italian languages [10-11].

For the purpose of our study the 10 item Sensitive Scale was translated to Bulgarian.

Patients gave written informed consent for data collection and analysis.

The statistical analysis was performed with SPSS v.21.0 for Windows. Hypotheses were tested using $\chi^2$-

criteria (for the descriptive profile data). Results with p<0.001 were interpreted as statistically significant.

## RESULTS

Results show the overall frequency of SSS was 31, 97%. As 174 (57, 23%) diagnosed in aesthetic visitors and 130 (42, 77%) in those with some health problem. The distribution according to the underlining health problem was as follow: acne vulgaris 28 (21, 55%), seborrhoeic dermatitis 26(20%), atopic skin 27(19, 99%), allergies 33(25, 39%), others 18(13, 07%).

Results from distribution according the age show the prevalence of SSS in middle age 41-45 (19,09%), 31-35 (18,77%) and lower level in older female 61 and up -4,59% with no difference with or without additional health problem. The exact distribution is shown on Fig. 1 and Fig 2.

In analyzing the possible seasonal distribution of the disease the following results were reported. We estimate the little prevalence in winter and spring. The highest rate is found during the months January mean 5.14% ( range 2.7% -6.6% ) , February –mean 4.57% ( range 2.81% -5.17% ) and - December mean 4.44% (range 3.63% -6.14% ), followed by April mean 4,09% (range 3.23% -5.14% ), and May-mean 3.57% ( range 2.81% -4.17% ).

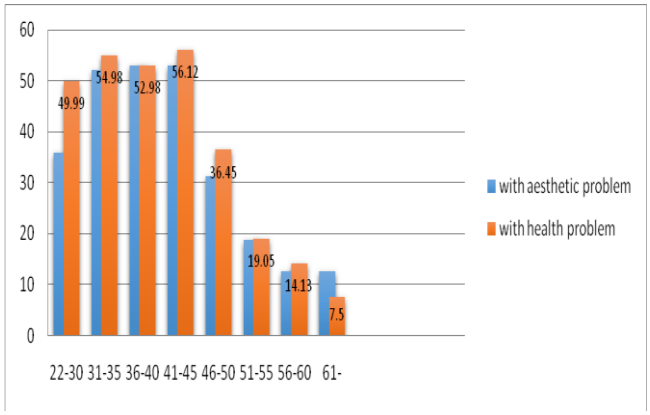


Fig.1. Distribution according age with or without additional health problem

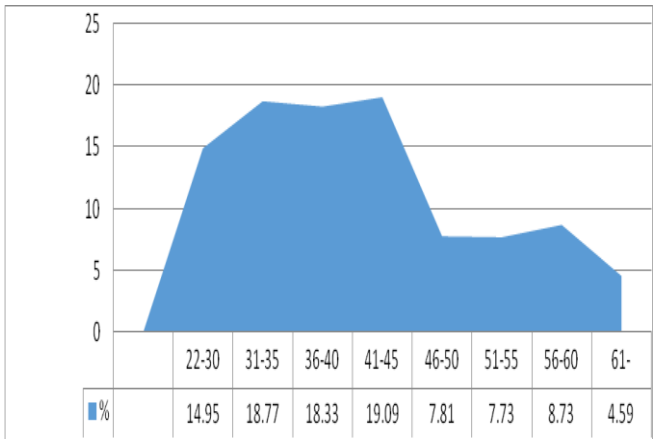


Fig.2 Distribution according age

Results from distribution according the location show the face -54, 9% as the main location, starting from the region of cheeks- 61,7%, eyelids-14,2%, then naso-labial folds-11,09%, forehead-8,31% and chin-4,7% at the last. Other locations are neck-15, 02% and necklines-12, 08%, palms-9, 8% and soles -8,

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2%.The exact distributions is shown on Fig.3 and Fig. 4

The following baseline distribution level was taken into account when processing the phototype distribution: from all 972 visitors 631 (65.22%) were III phototype; 145(14, 91%) II phototype; 196(19, 87%) IV phototype. There were no participant with phototype I V and VI. Data of distribution according the phototype are illustrated on Fig. 5.

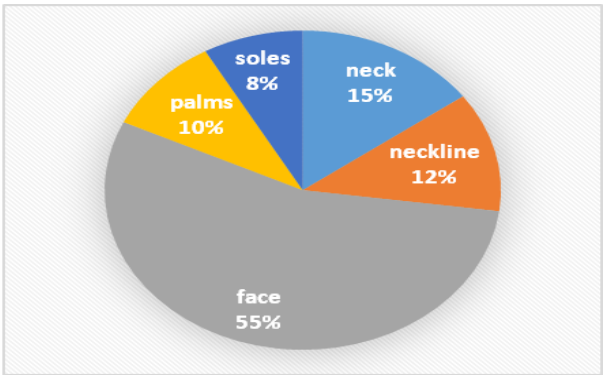


Fig.3. Distribution according location

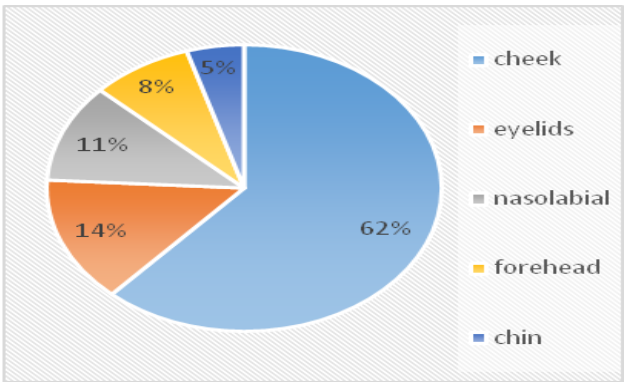


Fig.4. Distribution according location

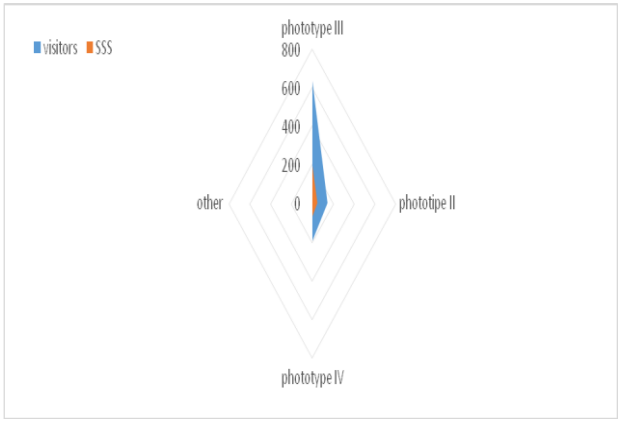


Fig. 5. Distribution according phototype

## DISCUSSION

The SSS as a stand-alone condition is relatively new. On the one hand, its rapid spread grows the interest of investigators. On the other hand, the lack of objective symptom makes it extremely difficult to study and analyze. In the literature there are few studies on it epidemiology [11]. The different authors indicate prevalence between 54, 47% to 25, 80% [12, 13] In the study of 1006 people (using the quota method), Misery and al (2005) establish that 52% of them determine their skin as sensitive or very sensitive, as 59% are female [14]. Taieb C. et al (2014) investigate SSS in two countries with different population and environmental factors. The authors' data show the distribution of SSS ranging from 22, 3 % to 45, 7 % [4]. Kim YR, et al (2018) reported the distribution of SSS in the range of 56, 8% [15].In their study the distribution according to ethnicity is also considered as racial differences show the prevalence in Caucasians [15].This study finds incidence of SSS-31, 97%. This correlates most to data pointed out in study of population of Portugal, Greece and Spain [4]. Relatively large range in incidence of the disease could be explained by the different environmental factors as well as the different social and lifestyle factors. The relatively subjective determination of sensitive and very sensitive skin is also irrelevant.

Many data suggest that the peak of the disease is between 35 and 50 years of age with a little prevalent in female than male [7]. Falcone D at al. (2017) pointed out SSS in 42% in premenopausal women and 32% for peri- and postmenopausal female [16]. The data obtained in our study showed the prevalence of SSS in middle age 41-45 (19, 09%), 31-35 (18, 77%) and lower level in older female 61 and up -4, 59%. The probable explanations could be the focus groups in the study (in most cases, patients over 18 years of age). The quality and quantity of used cosmetics, the changed of skin reactivity as well as the development of it adaptive qualities should be taken into account [4, 7, 17, 18].

Regardless of the still unclear pathogenetic mechanism of sensitive skin, the role of all factors

associated with the change in skin reactivity, hydration and fluctuations in skin barrier function the seasonal modulation should be assumed. Boulter E. et al (2013) published data on the relationship between homeostasis of skin barrier (corneal layer) and the age and season [19].Slominski and colleagues (2013) found seasonal variations in hormonal activity [20].Misery at al. (2007) investigate for the first time seasonal changes in SSS. They pointed out data that patients with sensitive skin and very sensitive skin were more numerous in secluded summer than in winter [21]. In our study seasonal modulation in SSS also was established. On the contrary our results showed peak of the disease during the winter and spring seasons. Most high percentage was recorded at January mean 5.14% , February –mean 4.57% and - December mean 4.44%, followed by April mean 4,09%, and May- mean 3.57% .

In 2004 Marriott and co-authors performed a study aiming to measure the sensitivity of different anatomical regions of the face [22]. Later Farage (2009) investigated 1039 people and published data for sensitive facial skin77.3%, body skin 60.7% and 56.3% in the genital area [23]. Some authors reported volar part of forearms and scalp as mentioned zones of sensitive skin [17, 18]. This study finds the highest distribution according the location in face skin -54, 9% and especially, in the region of cheeks- 61, 7%. Other locations are neck-15, 02% and necklines-12, 08%, palms-9, 8% and soles -8, 2%.

## LIMITATION

Due to the specificity of the medical center and the relatively small number of men visiting it, they were not included in this study. Other important limitation is subjectivity in determining the term and condition of sensitive skin.

## CONCLUSION

This is the first study of SSS in Varna region. Sensitive skin is a relatively new problem of modern society. Patients suffer from significant limitations and discomfort. The cause is unclear which makes treatment extremely difficult.

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