



## Characteristics and Clinical Profile of Vitiligo Patients in Dermatology and Venereology Outpatient Clinic Unit at Dr. Soetomo General Academic Hospital Surabaya

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### ABSTRACT

**Background:** Vitiligo is a depigmentation disorder characterized by the progressive loss of melanocytes from the epidermis and hair follicles. Vitiligo affects all age groups and is defined by acquired, idiopathic, progressive, different-sized, circumscribed, milky white depigmentation. Characteristics and clinical patterns of vitiligo will also help to understand the pathogenesis of the disease. **Purpose:** The aim of this study is to evaluate the characteristics profile and clinical features of vitiligo patients. **Methods:** The research material was taken from the medical record of vitiligo patients in the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Hospital Surabaya from 2018-2020. **Result:** This study was obtained by a number of new vitiligo patients 115 (0.3%) of the total number of new outpatient clinic visits of Dermatovenereology Dr. Soetomo General Hospital Surabaya. The majority of the gender is female (53.9%), late adolescence (26.96%), students (25.22%), and the onset of vitiligo 1-5 years (30.43%). The most common risk factors were idiopathic (51.3%) and clinical types are non-segmental vitiligo (53.04%). **Conclusion:** Vitiligo predominantly affects in females with active age groups of 17-25 years old, and students.

**Keywords:** vitiligo, characteristics, clinical features, human and disease.

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### BACKGROUND

Vitiligo is an acquired depigmenting disorder of the skin resulting from the progressive loss of melanocytes.<sup>1</sup> The prevalence of vitiligo varies by age and geographical site.<sup>2</sup> It affects 0.5–2% of the world's population and is considered as a multifactorial factor, clinical manifestations, and response to treatment.<sup>3,4</sup>

Characteristics of the lesion consist of well-defined macules or depigmented patches that are frequently asymptomatic. This condition is usually progressive and only rarely regresses on its own. Vitiligo can affect any age, but it is most frequent between the ages of 10-40, with a median age of 24.<sup>5</sup>

The general epidemiology of vitiligo has not been thoroughly explained in Indonesia. Retrospective data

on vitiligo patients in the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Hospital Surabaya is still quite high although there is a slight decrease, there were 51 patients in 2012, 70 patients in 2013, 67 patients in 2014, and 50 patients in 2017.<sup>6,7</sup> The youngest patient was 2 years old, and the oldest was 71 years old, with the highest distribution in the 25-44 year age group there 61 patients (32.3%), and the lowest distribution in the >65 year age group there 5 patients (0.1%).<sup>6</sup>

The increase in vitiligo instances cannot be separated from the disease's triggering circumstances. Genetic factors, stress, physical damage, autoimmune, internal disorders, biochemistry, viral infection, and

melanocyte release mechanisms have all been linked to the development of vitiligo.<sup>8</sup>

Vitiligo is classified into two clinical types based on its pattern of distribution segmental and non-segmental. It has social implications and still remains a disease difficult to treat.<sup>9</sup>

The aim of this study is to find out the incidence, characteristics, and clinical profile of patients of vitiligo patients during the last 3 years in the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Academic Hospital from 2016 to 2018.

## METHODS

The design study is a descriptive retrospective design. The data was performed by collecting the medical records of new vitiligo patients, including identity, history taking, examination, diagnosis, treatment, follow-up and counseling with cross-sectional approach. The selection of sample by total sampling methods was taken from attendance registers in the Division of Cosmetics Outpatient Clinic

Dermatovenereology Dr. Soetomo General Academic Hospital from 2018 to 2020. Ethical clearance was from the Ethical Committee of Dr. Soetomo General Academic Hospital Surabaya in April 2022 (0892/LOE/301.4.2/IV/2022).

## RESULT

The number of vitiligo new patient visits in the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Academic Hospital Surabaya over 3 years (2018 - 2020) was 115 patients, contributing 1.4% of the patients in the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Academic Hospital Surabaya or 0.3% of patients who visited the Dermatovenereology Outpatient Clinic Dr. Soetomo General Academic Hospital Surabaya. The new vitiligo patients were mostly in the 17–25 years age group, which are 31 patients (26.96%) with the most occupation were students (25.22%). The data showed that the number of female (53.9%) patients was higher than the number of male (46.1%) patients (Table 1).

**Table 1.** Demographic distribution of vitiligo patients

Variable	Total (n=115)
Gender, n (%)	
- Male	53 (46.1)
- Female	62 (53.9)
Age (years, n(%))	
- 0 - 5	8 (6.96)
- 6 - 11	8 (6.96)
- 12 - 16	5 (4.35)
- 17 - 25	31(26.96)
- 26 - 35	9 (7.83)
- 36 - 45	15 (13.04)
- 46 - 55	23 (20)
- 56 - 65	12 (10.43)
- > 66	4 (3.48)
Occupation, n (%)	
- Housewife	21 (18.26)
- Student	29 (25.22)
- Teacher	4 (3.48)
- Public Employees	18 (15.65)
- Police/ Government employees / Soldier	2 (1.74)
- Self-employed	23 (20)
- Laborer	2 (1.74)
- Farmer	1 (0.87)
- Driver	2 (1.74)
- Not yet working	13 (11.30)

**Table 2.** The distribution of the chief complaint of new vitiligo patients

Anamnesis	Total (n=115)
Main complaint, n (%)	
- Milky white depigmentation	115 (100)
- Itching	0
Onset of vitiligo, n (%)	
- 1-6 month	31 (26.96)
- 7-12 month	25 (21.74)
- 1-5 years	35 (30.43)
- 5-10 years	4 (3.48)
- >10 years	20 (17.39)

The chief complaint of patients was shown in table 2 that all patients complaint about milky white depigmentation (100%) with the disease onset 1-5 years (30.43%). In this study, the most common risk factors for vitiligo patients in the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Hospital Surabaya from 2018-2020 were

idiopathic (51.3%) and stress/psychic/emotional (28.7%) (Table 3).

The most cases of vitiligo was diagnosed as non-segmental vitiligo (53.04%) there are vitiligo vulgaris (48.69%), and acrofacial (4.35%); and remainder of them were diagnosed as segmental vitiligo (46.95%) (Table 4).

**Table 3.** Distribution of risk factors patient

Variable	Total
Risk factor, n (%)	
- Idiopathic	59 (51.3)
- Family / genetic history	17 (14.8)
- Stress / psychic / emotional	33 (28.7)
- Physical trauma	10 (8.7)
- Systemic disease	10 (8.7)
Asthma	1 (10)
Pulmonary TB	1 (10)
Malignancy	1 (10)
Heart disease / hypertension	2 (20)
Epilepsy	1 (10)
Type 2 Diabetes Mellitus (DMT2)	4 (40)
- Autoimmune disease	6 (5.2)
Thyroid	4 (45.4)
Psoriasis	0 (0)
Alopecia	1 (9.09)
Type 1 Diabetes Mellitus (DMT1)	0 (0)
Pernicious anemia	1 (9.09)

**Table 4.** Distribution of vitiligo lesion types

Lesion type, n (%)	Total (n=115)
Segmental	54 (46.96)
- Focal	30 (26.09)
- Segmental	24 (20.87)
Non-Segmental	61 (53.04)
- Vulgaris	56 (48.69)
- Acrofacial	5 (4.35)

## DISCUSSION

The current study reported as much as 1.4% of new vitiligo patients from total new visits in the

Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Hospital Surabaya. Details of vitiligo new patient visits to all

patients annually were 40 patients in 2018, 51 patients in 2019, and 24 patients in 2020. Compared to prior retrospective research by Rahmayanti et al., there was tends to be stable every year, with details of number 51 patients in 2012, 70 patients in 2013 and 67 patients in 2014.<sup>6</sup> Based on these data, it showed that the number of new vitiligo cases, in general slight decrease. This was possibly due to an improvement in the quality of services provided, with the addition of a variety of health centers such as visiting private clinics, general practitioners, dermatologists, and general hospitals. Furthermore, because of the COVID-19 pandemic in 2020, the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Academic Hospital has limitations on visits which has resulted in a decrease of patients.

This study found that the ratio of female (53.9%) patients was greater than male (46.1%) patients. A similar study by Rahmayanti, which reported that female vitiligo patients visited more than men, namely 68.1% with a female to male ratio of 2.1:1.<sup>6</sup> Women are more likely to notice changes in their skin pigmentation and how they affect cosmetics, especially when vitiligo lesions emerge on the face, thus they may seek treatment more frequently.

The most age group affected by vitiligo cases in the Division of Cosmetics Outpatient Clinic Dermatovenereology, Dr. Soetomo General Hospital Surabaya was 17–25 years, which are 31 patients (26.96%), followed by age group of 46–55 years, which equals to 23 (20%) patients. The similar study by Degboe and Gauthier, showed a predominance of vitiligo patients appear before the age 30 year old (70–80%), and before the age of 20 years (50%).<sup>10</sup> The age distribution in vitiligo patients can help with medication selection, such as in pediatric and elderly patients should be cautious in topical corticosteroid therapy about the risk of increased drug absorption. The most occupation of vitiligo patients was student (25.22%), self-employed (20%) and housewife (18.26%). This result was conducted by Dwiwana study, who reported that the majority occupations of vitiligo patients were students (30.99%) and housewife (21.49%).<sup>11</sup> The result of the occupation in this study were less useful because they were unable to investigate factors that may have triggered the onset of vitiligo in patients.

All patients (100%) of vitiligo who visited the Division of Cosmetics Outpatient Clinic Dermatovenereology, Dr. Soetomo General Hospital Surabaya in 2018–2020 had a main complaint of milky white patches and the onset of disease was 1–5 years (30.43%). White patches are the main clinical manifestations that appear in new patients with vitiligo

accompanied by homogeneous depigmentation.<sup>12</sup> Vitiligo is often confused with several diseases, such as leprosy or and also often associated with some religious beliefs such as black magic or being under spell; patients frequently consult other public health as well, causing delays in dermatology consultations.<sup>10</sup>

The most risk factors of vitiligo patients at the Division of Cosmetics Outpatient Clinic Dermatovenereology Dr. Soetomo General Academic Hospital Surabaya in 2018 – 2020 were an idiopathic factor (51.3%) and stress / psychic/emotional (28.7%). Vitiligo is a multifactorial inherited disease with a polygenic pattern.<sup>13</sup> This theory is supported by this study, which found that some vitiligo patients had multiple risk factors, necessitating a multifactorial analysis.

According to Listiawan's study, which was some of the difficulties in dealing with vitiligo patients are the vitiligo disease itself, which has a very complex pathogenesis and its complete pathogenesis that could not be explained.<sup>14</sup> Vitiligo is characterized by the appearance of white macules caused by the loss of epidermal melanocytes as a result of cell damage induced by melanocyte-specific cytotoxic immune responses and melanocyte release caused by a faulty adhesion system. The numerous mechanisms underlying melanocyte loss are insufficient to explain all aspects of this complex skin condition.<sup>15</sup> It was unclear why melanocytes stopped making melanin and what variables caused this to happen. Stress could increase levels of neuroendocrine hormones that affect the immune system and alter neuropeptide levels. Stress could stimulate the secretion of catecholamines, which could bind to alpha receptors in the skin and on the arteriolar mucosa, causing vasoconstriction, hypoxia, and overproduction of oxygen-free radicals that destroy melanocytes, through stimulation of the hypothalamic-pituitary-adrenal axis.<sup>16</sup> More study on the role of stress in the pathogenesis and progression of vitiligo lesions is needed, so that a better knowledge of the theory and recognition of vitiligo risk factors can pave the way for treatment advancements in this illness.

Segmental vitiligo usually begins in childhood with a rapid and stable progression. It is not associated with autoimmune disease. Non-segmental vitiligo is characterized by depigmented macules with symmetrical sides and is frequently associated with autoimmune disease due to the active nature of the lesion.<sup>17</sup> In this study, non-segmental vitiligo (53.04%) was reported to be more common than segmental vitiligo (46,96%). This result relates to the study reported by Degboe, the most common type of lesion was non-segmental vitiligo followed by segmental

vitiligo.<sup>10</sup> Identifying the type of vitiligo lesion in new patients is critical for planning future therapy. Knowing the type of vitiligo lesion a patient has makes it easier for a dermatologist to provide education about the disease specifically.

The overview data of new vitiligo cases at the Division of Cosmetics Outpatient Clinic Dermatovenereology, Dr. Soetomo General Hospital Surabaya from 2018-2020 suggested relatively constant that predominantly affect in a female with an active age group of 17-25 years old, and student. Idiopathic and stress factors were the most common risk factors for vitiligo and the most common type of lesion was non-segmental vitiligo followed by segmental vitiligo.

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