

Vitiligo Cases in the Out-Patient Department in a Tertiary Care Hospital

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ABSTRACT

Background: The prevalence of vitiligo has been reported to range from 0.1% to 8% worldwide. It has a low mortality rate but a high morbidity cost because of its psychological and social effects. Type-1 diabetes mellitus, autoimmune thyroid disease and other autoimmune illnesses have been linked to this condition. This study was performed to assess the occurrence of vitiligo among males and females and the epidemiological status of vitiligo in a tertiary Hospital of Dhaka, Bangladesh.

Materials and methods: A cross-sectional survey was conducted among 3,212 adults (1,429 males and 1,783 females) in a community of Dhaka between October 2022 and May 2023 at OPD of Delta Medical College. Face-to-face interviews were conducted at the OPD of Delta Medical College for each participant and all respondents had their skin examined by dermatologists. The risks of comorbidities associated with vitiligo were evaluated.

Results: In this particular research project, most vitiligo patients were between the ages of 13 and 60 years. According to this research, the average age of vitiligo patients was 35.5 years. Here, the proportion rate for this is 2.74%. The ratio of male participants to female participants in this research was M:F = 1:1.51. Only 88 out of the 24 cases were stable, whereas around 64 were unstable. The focused kind of vitiligo was shown to be the most prevalent form of the condition in this particular research.

Conclusion: Vitiligo was most common among individuals in Dhaka in their middle 30s and the incidence of the condition rise with age. In adult patients, vitiligo was connected with higher risks of alopecia areata, hypothyroidism, diabetes mellitus and atopic dermatitis.

Key word: Diabetes mellitus; Epidemiology; Hypertension; OPD; Vitiligo.

Introduction

Depigmentation of the skin, known as vitiligo, is a common autoimmune condition that may range from a few tiny patches to almost whole bald patches. One to two percent of the global population suffers from the illness. Although it does not discriminate based on race or ethnicity, the most significant frequency has been seen in the Indian subcontinent.^{1,2} It's a frequent kind of

acquired skin discoloration that manifests as round, white macules flush with the skin's surface with a distinct border. Hair above the lesion might seem normal or completely white.³ Vitiligo often starts in either childhood or early adulthood; around half of those who have vitiligo have it before the age of 20 and the risk of getting it diminishes with increasing age.⁴ Vitiligo is a multifactorial polygenic disorder with a complicated pathophysiology affecting skin pigmentation. It is thought to have a complex pathophysiology that includes autoimmune, cytotoxic, biochemical, oxidant-antioxidant, viral and neurological pathways for the loss of melanocyte function in those genetically susceptible. However, the precise etiology is still unclear. Patients and first-degree relatives with a history of autoimmune disorders such as autoimmune thyroiditis, Grave's disease, Addison's disease, diabetes mellitus, alopecia areata or pernicious anemia provide more supporting evidence of an autoimmune origin.⁵ In vitiligo, the actual reason for the loss of epidermal melanocytes has yet to be determined, even though various hypotheses have been formulated to explain the phenomenon.⁶

Vitiligo is the most prevalent form of skin pigmentation. It is estimated that 0.5–2% of the population globally,

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Date of Submission : 11th May 2024
Date of Acceptance : 28th May 2024

including adults and children, have vitiligo.^{7,8} Vitiligo was found to afflict 0.38% of the people in a study conducted in 1977 on the Danish Island of Bornholm, one of the first and most extensive epidemiological studies published.⁹ It may appear in people of any race or ethnicity and can affect people of any skin color.¹⁰ Nevertheless, it seems that there are significant regional variances.¹¹ For instance, research conducted in the province of Shaanxi in China revealed a prevalence as low as 0.093 percent, but places in India had rates as high as 8.8 percent. It is possible that the inclusion of instances involving chemical and toxic depigmentation is to blame for this high result.¹²⁻¹⁵ Alternatively, these statistics may represent the predominance of single-skin institutions in Delhi. In addition, the variance in the prevalence estimates may result from a greater data reporting rate in regions where social and cultural stigma are prevalent or in areas where lesions are more evident in people with darker skin tones. Vitiligo has been shown to have a prevalence that varies from a low of 0.06%.¹⁶

To a high of 2.28%, according to the findings of a comprehensive and in-depth analysis of prevalence data from more than 50 studies conducted all over the globe.¹⁰



Figure 1 World prevalence rates of vitiligo of adolescents¹⁷

The prevalence of vitiligo was aggregated at 0.2% from 82 population or community based studies and at 1.8% from 22 hospital-based studies in a meta-analysis examining vitiligo prevalence.¹⁸ Although SV is responsible for 5–16% of all instances of vitiligo, its incidence and prevalence are not fully known. According to the literature, SV incidence might be between 5% and 30%.¹⁹⁻²¹ Differences in illness categorization due to the lack of agreement in past years, uneven patient reporting and diverse demographics may explain the discrepancy in epidemiological data.²²

Both sexes are equally vulnerable, but the social stigma associated with this disorder leads women and girls to seek help more often than men and boys.²³ Although anyone may have nonsegmental vitiligo, it more often affects younger individuals (Especially those under 30 years).²⁴ 25% of people with vitiligo have their first symptoms before the age of ten, nearly half of people with vitiligo have their first symptoms before the age of 20 and about 70-80% of people with vitiligo have their first symptoms before the age of 30 years.²⁵ It has been observed that communities often have two peaks and many age groups.²⁶ 87% of instances of segmental vitiligo occur before age 30, while 41.3% of cases of segmental vitiligo occur before age 10.^{27,28} The average onset age was reported to be 15.6 years old. The earliest onset was reported to occur at birth, while the latest start was seen 54 years later. The majority of the cases had been going on for less than three years, with durations ranging from two months to fifteen.²⁸ This study was performed to assess the occurrence of vitiligo among males and females and the epidemiological status of vitiligo in a tertiary Hospital of Dhaka, Bangladesh.

Materials and methods

The current research was a secondary data analysis collected as part of a cross-sectional, population-based investigation of chronic illness prevalence in metropolitan Dhaka between October 2022 and May 2023. All participants had to be at least ten years old and Dhaka residents for at least a year.

Participants were assisted in filling out a questionnaire that inquired about their demographics (Age, gender, height and weight), medical history (Including any previous diagnosis of skin diseases) and family medical history (Including any previous diagnosis of skin diseases). In addition to filling out the questionnaire, at least two physicians gave each patient a thorough, private skin inspection.

Dermatologists either made or verified the diagnosis during the visit since vitiligo is a clinical diagnosis established based on the indicators present during the inspection. When present, vitiligo was categorized as either focal vitiligo, generalized vitiligo, acrofacial vitiligo or segmental vitiligo, depending on the location of the white patches. Every single person with vitiligo was given a questionnaire designed to collect specific information about their condition.

The Microsoft Office Excel 2010 software was used to analyze demographics (age, gender, height and weight), medical history (including any previous diagnosis of skin diseases) and the diseases of interest included alopecia areata, hypothyroidism, diabetes mellitus and atopic dermatitis.

Results

Of the 3,212 patients, 88 were confirmed with vitiligo, whereas 53 were women and 35 were men. One thousand two hundred twelve patients were non-vitiligo patients. Here the vitiligo rate was 2.74%. From the study, 24 were stable vitiligo patients, the rest of them unstable.

Table I Distribution of age among the respondents on the basis of years (n=88)

Ages	Female (n=53)	Male (n=35)	Total (n=88)
11-20	11	7	18
21-30	13	10	23
31-40	16	10	26
41-50	7	4	11
51-60	4	3	7
>60	2	1	3

Vitiligo manifested itself at a considerably different age in each patient, spanning anywhere from 13 to upper 60 years of age. The age group of 31-40 years had the most remarkable onset age (29.55%), followed by the age group of 41-50 years (12.5%), the age group of 11-20 years was 20.45%, the age group of 21-30 years was 26.14% and the age group of 51-60 years 7.95% and only 3(3.41%) were sixty years.

Table II Clinical types of vitiligo among the patients (n=88)

Type	Male	Female	Total
Focal	8	13	21
Generalized	12	16	28
Acrofacial	8	15	23
Segmental	7	9	16
Total	35	53	88

Among 88 patients, Focal vitiligo was seen in 21 (23.86 %), whereas segmental vitiligo was present in 16 (18.18%). Twenty-eight patients (31.82%) were diagnosed as generalized vitiligo, while 23 patients (26.14%) were found as acrofacial vitiligo.

Table III Duration of suffering from the vitiligo by the patients (n=88)

Duration (In Years)	Number (n = 88)
<1	24
1-5	23
6-10	20
>10	21

Table IV Analysis of chronic comorbidities associated with vitiligo (n=24)

Comorbidity (n = 24)	Number	Percentage (%)
Atopic dermatitis	4	16.67
Alopecia areata	3	12.50
Diabetes mellitus	8	33.33
Hypothyroidism	9	37.50
Total	24	100.00

Discussion

Regardless of color or nationality, vitiligo affects around 1%–2% of the global population. India has the most significant incidence, followed by Mexico and Japan. Patients with positive family histories make up 30% of the population overall and this percentage may reach 40% in India.²

In this research, patients with vitiligo had a mean age of 32.5 years. Between the ages of 13 and 60, the prevalence was relatively low. The second decade is when the most significant incidence of mean age of onset is recorded in other South Asian research as well. The male to female ratio in the current study was 1:1.51. Other data indicate that vitiligo affects both sexes approximately equally often, but the disease affects females significantly.²⁹

Within the scope of this research, it was found that 24 individuals had documented cases of vitiligo involved in the comorbidity issue. In addition, some research found that vitiligo patients had more favorable comorbidity issues than vitiligo controls. In a study, only 11% of patients connected with other systemic disorders such as hypothyroidism, dyslipidemia, diabetes, etc.¹⁶ In 8% of the patients, autoimmune illness was linked to conditions such as atopic dermatitis and type 1 diabetes mellitus, whereas 9 patients were affected by hypothyroidism.³⁰

Generalized vitiligo (41%), localized vitiligo (26%) and acrofacial vitiligo (21%) were the most often reported forms in a study.³¹ From this research, focal vitiligo was seen in 21 (23.86 %), whereas segmental vitiligo was present in 16 (18.18%). Twenty-eight patients (31.82%) were found to have generalized vitiligo, while 23 (26.14%) had acrofacial vitiligo. The overall pattern of distribution was consistent with previous research. In this particular research, the generalized kind of vitiligo was shown to be the most prevalent and the area of the body most often afflicted was the abdomen, followed by the upper limbs.

Conclusion

Vitiligo was found to have a prevalence among adults in Dhaka equivalent to that observed in previous investigations. The current research found that individuals with vitiligo had a higher risk of atopic dermatitis, diabetes mellitus and hypothyroidism. The link of vitiligo with hypothyroidism in older and overweight participants was the most remarkable result in this study. The findings can provide fresh perspectives on the subject of the research. Vitiligo appears to affect both genders and all age groups, regardless of differences in geo-environmental, living conditions and lifestyles, or ethnicities. Vitiligo typically begins in early adulthood and progresses slowly, however, vitiligo vulgaris continues to be the most common form of the condition. Individuals who have a first-degree relative who is afflicted by the disease may have a slightly higher risk of experiencing symptoms at a younger age. The ability to conclude is constrained, by the fact that the research was conducted at a single institution and was retrospective and observational.

Disclosure

All the authors declared no competing interest.

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