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PREVALENCE OF *ŚVITRA* W.S.R. TO VITILIGO IN JAIPUR AND ITS PERIPHERY-A CROSS-SECTIONAL STUDY

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Abstract –
Back ground: - *Śvitra* is linked to Vitiligo and Leucoderma, according to modern dermatology. Vitiligo is a condition in which the melanocytes in the skin are gradually destroyed, resulting in un-pigmented regions. Vitiligo can have profound effects on patients and is often associated with other autoimmune conditions and family background. It is important to understand the current prevalence of Vitiligo, including all diagnosed, undiagnosed cases.

Objective: - Conduct a community based survey to identify prevalence of *Śvitra* (Vitiligo) in Jaipur & its periphery and to know socio-demographic factors influencing the occurrence of the disease.

Design, Setting, and Participants: - This community based survey study was performed "between" 2020 to 2021 in the Jaipur during my Ph.D study. We have made a small team and started planning to survey by selecting 10 regions (cluster) of Jaipur city and it's around. After decided cluster we started door-to-door survey, to found 500 patients we were surveyed 25600 populations of any age.

Results: - Prevalence of *Śvitra* (Vitiligo) was found 1.95 % in Jaipur and its periphery, 293 (58.6%) were female patients, 207 (41.4%) were male, Age (Years)-0-30 yrs were 223 (44.6%), 31-60 were 213(42.6%), 64(12.8%) were found more than 60 years. Mean age of patients was 27.2 years, family history found in 31 (6.2%), 60 (12.0%) patients were found with previously diagnosed autoimmune diseases; particularly thyroid problems (5.8%) were quite common.

Conclusions: - Results of this study demonstrated that the current (Jaipur and its periphery) population-based prevalence estimate of Vitiligo. Additionally, this study suggests that relatively high prevalence of Vitiligo was found female patients.

Key words: - *Śvitra,* Vitiligo, Prevalence & survey (cross-sectional) study.

Introduction: -
In *Āyurveda*, all skin disorders are classified under the category of *Kuṣṭha*, which is further split into *Mahā Kuṣṭha* and *Kṣhudra Kuṣṭha*[1]. Different *Ācaryas* later incorporated this as one of the kinds of

Kuṣṭha.[2] Though *Śvitra* is described with other forms of *Kuṣṭha*, the distinction between *Kuṣṭha* and *Śvitra* is based on the non-secretary and non-infectious character of the illness[3], only *Tvachā* involvement, *Nidāna*(etio-pathogenesis), and Chronicity non-exudative[4]. *Kilāsa* has three kinds, according to *Ācārya Caraka*[5]: *Dāruṇa*, *Varuṇa* and *Śvitra*. As a result, he has stated the word *Śvitra* as a sort of *Kilāsa.*[6] *Śvitra* is classified as *RaktaPradoṣajaVikāra*[7] in *Āyurveda*, and *Rakta* and *Pitta* are associated with *Āśraya Āśrayī Bhāva*(*Kilāsa*, a form of *Śvitra* in *Tāmrā Tvachā*[8]). *Bhrājaka Pitta* (one type of *Pitta Dosa*[9]) is located in first layer of skin *(Avabhāśinī) and* function of *Bhrājaka Pitta* is to maintain luster (color) of skin.[10]As a result, the *Pitta* (*Bhrājaka*) *Dosha***,** becomes vitiated, resulting in white skin patches known as *Śvitra Vyādhi. Śvitra* is linked to Vitiligo and Leucoderma, according to modern dermatology. There are numerous illnesses characterized by a lack of pigment in the skin that are collectively known as Leucoderma; some are caused by melanocytes' failure to generate melanin, while others are caused by melanocytes' absence or destruction. Vitiligo is a condition in which the melanocytes in the skin are gradually destroyed, resulting in un-pigmented regions. Vitiligo is a form of dermatological condition that affects people of all ages, regardless of gender or skin type. Vitiligo is a depigmentation condition characterized by white non-scaly patches in the skin with clear sharp borders that are spread unilaterally. It causes the loss of functioning melanocytes on an episodic basis, resulting in pigment dilution in the afflicted regions. (Le Poole et al. 1993; Ezzedineetal. 2012a, b)

Epidemiology and prevalence:-Vitiligo is the most prevalent depigmentation condition, affecting roughly 1% of the world's population.[11] In India[12], it is thought to be between 3-4 %, however an instance as high as 8.8 % has been documented.

Prevalence refers to the number of illness cases present in a particular community at a given moment, whereas incidence refers to the number of new cases that occur within a certain time frame.[13]The prevalence of a certain health outcome in a given population is simply described in descriptive cross-sectional research. The prevalence of a disease can be assessed at a single moment in time (point prevalence) or over a specified period of time (periodic prevalence).

Aims and objective:-

- Conduct a community based survey to identify prevalence of *Śvitra* (Vitiligo) in Jaipur & its periphery.
- To know socio-demographic factors influencing the occurrence of the disease.

Methodology of cross-sectional study (Design, Setting, and Participants):-

This community based survey study was performed "between" 2020 to 2021 in the Jaipur during my Ph.D. We have made a small team and start planning to survey by selecting 10 regions (cluster) of Jaipur city and it's around. After decided cluster we started door-to-door survey, to found 500 patients we were surveyed 25600 populations of any age. 500 cases were selected by cluster sampling method from selected 10 regions (cluster). We inquired about patient's gender age, educational history, family history, diet, occupation, economic status, addiction etc... A specific questionnaire about screening of *Śvitra* (Vitiligo) was employed during the survey. If there was anyone suspected of *Śvitra,* detailed history was taken, and recent medical records were re-evaluated. All 500 cases we, were also provided written informed consent. This study was approved by the IEC of National Institute of Ayurveda Jaipur.

Criteria for the selection of the patients

Inclusion criteria

1. Patient with the classical sign and symptoms of *Śvitra*. (Diagnosed and undiagnosed cases. Undiagnosed cases were confirm by taken picture of patches and evaluated by supervises and other clinicians of institute.)
2. Patients of all age.
3. Patients belonging to either gender.

Exclusion criteria

1. All other de-pigmentory disorders.
2. Patches due to burning, chemical explosion etc.

Statistical methods-MS Word Excel was used to tabulation and analysis of the data. Continuous data are presented as means and categorical variables are presented as frequencies and percentage**.** At Confidential level 95%, Z=1.96.
Sample size for this study was chosen to provide reasonable precision around the estimate of prevalence from all diagnosed and undiagnosed Vitiligo patients.

Observations and Results:-

Table-1:- % prevalence of Vitiligo (N=500) in gender, age, marital status, habitat, **educational& occupation wise.**

Features	Total no. of patients	Percentage (%)
Gender		
Female	293	58.6
Male	207	41.4
Age (Years)		
0-30	223	44.6
31-60	213	42.6
More than 60	64	12.8
Marriage Status		
Married	301	60.2
Unmarried	185	37
Divorced	09	1.8
Widow	05	1.0
Habits		
Urban	378	75.6
Rural	122	24.4
Educations		
Illiterate	56	11.2
Primary	68	13.6
Middle school	113	22.6
High School	84	16.8
Graduate	139	27.8
Post-Graduate	40	8.0
Occupations		
Private Job	154	30.8
Student	148	29.6
House-wife	101	20.2
Govt. job	71	14.2
Unskilled	26	5.2
Diet		
Mixed	144	28.8
Veg.	356	71.2
Economic Status		
High (above 40,000 rupees per month)	47	9.4
Upper Middle (20,000 - 40,000/month)	245	49.0
Lower Middle (5,000 – 20,000/month)	166	33.2
Poor (below 5,000)	42	8.4
Religion		
Hindu	387	77.4

Muslim	82	16.4
Sikh	12	2.4
Christian	9	1.8
Jain	10	2
Addiction		
Tea / coffees	378	75.6
Smoking	29	5.8
Alcohol	15	3.0
Smoking + Alcohol	78	15.6

Table-2:- % prevalence of Vitiligo in involving area, family history, previously diagnosed autoimmune diseases.

Features	Total no. of patients	Percentage%
Involving area under Vitiligo		
Generalized	49	9.8
Localized	451	90.2
Family history		
Suffered	31	6.2
No suffered	469	93.8
Autoimmune disease		
Autoimmune diseases	60	12.0
No any autoimmune diseases	440	88.0
Type of Autoimmune Diseases		
Rheumatoid arthritis	0 9	1.8
Psoriasis	0 5	1.0
Adult autoimmune diabetes mellitus	03	0.6
Addison's disease	04	0.8
Autoimmune thyroid disease	**29**	**5.8**
IBS	02	0.4
Pernicious Anemia	03	0.6
Others	05	1.0

Table-3:- Showing **% prevalence of 500 cases of Vitiligo in Jaipur and it's around areas**

S.N	Selected Cluster	Total population Surveyed	Total patients of *Svitra*(Vitiligo)	Prevalence%
1.	Govind Nager	2700	50	1.85
2.	ShriGoviddevji temple area	2900	61	2.10
3.	Chandpole	3000	54	1.80
4.	Jagatpura	2200	40	1.81
5.	Premnagar/Santhinagar area in mansrover	2500	47	1.88
6.	Vidyadharnager	2800	61	2.17
7.	14 number area	1900	43	2.26
8.	JamwaRamgarh	2700	57	2.11
9.	Kukas	2300	40	1.73
10	Chaksu	2600	47	1.80
	Total	**25600**	**500**	**1.95**

DISCUSSION: - Table-1

Gender: 293 (58.6%) were female patients. Vitiligo has no direct link to gender. However, the data revealed that female patients were more likely to develop white patches on their skin. Female prevalence had previously been reported in research from Rome[14], Tunisia[15], India[16] (Gujarat)[17], and some global pooled data.[18] One possible reason is that females are more likely to use various types of cosmetic items that can irritate the application site (skin), which could be one of the causes of

Vitiligo. During the study, I discovered that several female who had used MTP pills or had undergone abortion were developed white patches on their skin. It may be one reason of more number of female patients.

Age: The age group of 0-30 years had the highest number of patients 223 (44.6%). Mean age 27.2 years. At this time, younger age groups are more likely to disregard diet rules and regulations, resulting in increased consumption of rapid food (*Viruddha Āhara*), which may be cause of *Śvitra*[19]. In research by Zhanget et al., two institutional surveys from India, the mean age at beginning was observed to be within the first three decades.[20] In India, the average age of onset of Vitiligo was 24.4 years.[21]

Marital Status: - 301 (60.2%) patients were married. No direct link to marriage status
Habitat:-378 (75.6%) patients were from urban areas. Probable cause is, the study was conducted in an urban location, and another reason could be that in an urban area, educated culture is more sophisticated and leads a rapid life, thus their dietary practices may be defective owing to carelessness or ignorance.

Educational, Occupation Socio-economic status:-There is no link found between educational attainment, Occupation, Socio-economic status and the occurrence of Vitiligo. However, it was observed during the study that those patients who worked in chemical plants were more exposed.

Religion:-77.4 % patients were Hindus. According to the official census of the district of Jaipur in 2011, Hindus constitute the majority (Hindu -87.83% & Muslim -10.37 %). There is no link between religion and the occurrence of Vitiligo.

Diet pattern:-71.2% patients vegetarian and 28.8% mixed diet. It's possible that the higher number of vegetarian patients is attributable to Hindu religious customs, particularly in this research location.

Addiction:-75.6 % of respondents said they drank tea or coffee, 15.6% said they were addicted to smoking and alcohol. Until today, there has been no evidence of a link between Vitiligo and addiction. Vitiligo is less likely if you smoke[22]. More research is required.

Table-2
Family History: - 469 (93.8 %) of cases were found to be free of white patches in family, but 31 **(6.2%) of cases were found to be impacted.** it shows that genetics has important role in causation of Vitiligo.[23]We found a prevalence rate of 6.2 % and this is close to another study from China (9.8%).Two earlier Indian studies, reported much higher rates (20.4% [24]& 11.31%[25]).

Previously diagnosed autoimmune diseases: - Maximum of 88.0 % had never been diagnosed with an autoimmune disease. However, **60 (12.0%)** of the patients had previously been diagnosed with autoimmune diseases. We discovered that auto-immune diseases (particularly thyroid problems,) were quite common. This is also in concurrence with previous studies.[26] **Thyroid disorders** were diagnosed in (29) **5.8%** cases, rheumatoid arthritis were in 1.8% cases, 1% cases were psoriasis and 0.4% cases were diagnosed from IBS.0.6% were from Pernicious Anemia& Adult autoimmune diabetes mellitus and 0.8% cases were diagnosed Addison's disease**.** Thyroid disease was found to be more common in Vitiligo patients, according to several authors.[27]

Table-3
To get 500 patients of *Śvitra* we were surveyed 25600 populations from 10 selected areas (clusters) of Jaipur city and around. 14 number area showed high prevalence (2.26%) comparison to other clusters. it may be due to RICO industry area near it. Average percentage prevalence of *Śvitra*

(Vitiligo) was found 1.95 %. Pervious study also supported. The prevalence of Vitiligo in India has been invariable reported between 0.25 and 4%.[28], Vitiligo affects around 1% of the world's population.[11] it is estimated between 3-4% in India.[12]

Conclusion:- Result of survey study demonstrated that the current Prevalence of *Śvitra* (Vitiligo) was found 1.95 % in Jaipur and its periphery**.** A relatively high prevalence was found in age under 30 years and female patients. This study suggested that Vitiligo strongly associated with family background and autoimmune diseases. Future studies should be performed to confirm these findings.

- Competing interests:- Nill

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