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Society's Knowledge About Physiological Causes of Hair Loss: A Cross-Sectional Study at The University of Basrah

Zahraa Mahmoud Hussain Al-Hejaj
Department of Basic Science, College of Nursing, University of Basrah, Basrah, Iraq

Email : zahraa.hussain@uobasrah.edu.iq

Abstract. Background: About 50% of men and nearly 50% of women experience hair loss, making it one of the most prevalent aesthetic issues in the world. This condition can have a detrimental impact on each person's quality of life and can result in circumstances that can cause psychological distress and demoralization. It's critical to comprehend whether hair loss is a regular physiological process or whether it's an aberrant process brought on by issues with the scalp or its bulb, for example. Since baldness, alopecia, and all forms of hair loss are always the consequence of multiple factors that contribute to their development, defining them is frequently difficult and reductive. Objectives: To assess the knowledge about the physiological reasons that lead to hair loss and find the relationship between knowledge and socio-demographic characteristics. Material and methods: A descriptive cross-sectional study was conducted from October 10, 2024, to January 15, 2025. A random sample of 150 people from Basrah University participated in the study. To gather information and evaluate knowledge, a questionnaire was employed. Results: Most of the university population is not sure that Cushing's syndrome does not cause hair loss (44.7%), most of the university population agree Hyperthyroidism causes hair loss (76.7%), most of the university population agree Vitamin D deficiency causes hair loss (89.3%), The majority of university students concur that there is a connection between ferritin insufficiency and hair loss (40.7%), while the majority of students concur that there is a connection between zinc deficiency and hair loss (71.3%). However, half of the students disagree. The majority of university students believe that iron deficiency and hair loss are related (84.7%), that obesity causes hair loss (50%), and that heredity does not cause hair loss (76.7%). Additionally, the majority of university students (70%) concur that there is a connection between vitamin A insufficiency and hair loss, and over half (55.3%) concur that there is a connection between biotin shortage and hair loss, more than half of college students (57.3%) concur that folic acid deficiency and hair loss are related. Conclusion: According to the results of this study, most university students are well-informed about hair loss.

Highlights:

1. air loss affects 50% of men and women, impacting quality of life.
2. Objectives: Assess knowledge on physiological causes of hair loss and socio-demographics.
3. Conclusion: Most university students are well-informed about hair loss causes.

Keywords: Society, Physiological, Hair loss, Vitamin D, knowledge

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Introduction

According to medical terminology, hair loss is one of the main reasons people attend the dermatology clinic. It affects both men and women as well as kids. Hair loss affects about half of men and one-third of women at some point in their lives [1]. Hair loss is a common issue that affects people at different stages of life. Several factors contribute to hair loss, including genetics, hormonal changes, diet, stress, and improper hair care [2]. In many cases, hair loss is a natural part of the hair renewal process, where old hair sheds and new hair grows from the follicles, continuing the growth cycle [3].

On average, scalp hair grows about 10–15 millimeters per month, but this rate tends to slow down with age [4]. Losing 50–100 hairs per day is considered normal [5]. However, conditions like polycystic ovary syndrome (PCOS) can contribute to hair loss due to elevated androgen (male hormone) levels, leading to androgenetic alopecia. This often results in noticeable hair thinning and increased fragility [6]. Vitamins and minerals can be used to treat the prevalent issue of hair loss. The development of healthy cells and the performance of their functions depend on vitamins and minerals, and a lack of them may cause hair loss [7].

Objective of the study

To evaluate people's knowledge of the physiological causes of hair loss and determine how knowledge relates to sociodemographic traits

Methods

Design of the study: A descriptive Cross-Sectional study design is carried out throughout the present study about (Society's knowledge about physiological causes of hair loss, a cross-sectional study at the University of Basrah) from the period of data collection beginning from 10th October 2024 to 15th January 2025. The period of study started on 11th September 2024 to 10th March 2025. A three-point Likert scale was used by the researcher for each question (agree, disagree, and not sure). Agree to take 3, disagree 2, and 1 for not sure. The researcher used mean score, frequency, percentage, chi-square, and Fisher's Exact Test. The results of the data analysis are divided into three levels: poor, moderate, and good. The poor level is the mean score between 1-1.66, moderate level between 1.67-2.32, and good level between 2.33-3.

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About 150 purposive samples of male and female volunteers from various parts of Basrah city (from Basrah University) who completed the questionnaire were included in the study.

To meet the aims of the study, the researchers employ a questionnaire that consists of two parts: Part one: Socio-demographic data. It comprises sex, age, and academic achievement. Part two: The knowledge includes 20 questions about hair loss.

Result and Discussion

Demographic Data N=150 University Population

Demographic Data			
Variables	**Classes**	**Frequency**	**Percentage**
Sex	**Female**	**86**	**57.3**
	Male	**64**	**42.7**
	Total	**150**	**100.0**
Age Years	**20-29**	**75**	**50.0**
	30-40	**75**	**50.0**
	Total	**150**	**100.0**
Academic Achievement	**Secondary School**	**66**	**44.0**
	Bachelor's Degree	**74**	**49.3**
	Master's Degree	**8**	**5.3**
	PhD Degree	**2**	**1.3**
	Total	**150**	**100.0**

The sociodemographic characteristics of the university population in this study are displayed in this table. Of the study sample, the majority graduated with a Bachelor's degree (49.3%), half were in the 20–29 and 30–40 age groups, and more than half were female (57.3%).

(2): University Population Knowledge Regarding the Causes of Hair Loss

Table (2.1): University Population Knowledge Regarding the Causes of Hair Loss for Each Question

University Population Knowledge Regarding the Causes of Hair Loss for Each Question

Items	Answer	N = 150		Mean Score	Sd	Assessment
		F	%			
1. Cushing's syndrome does not cause hair loss	Disagree	42	28.0	1.99	0.746	Moderate
	Not Sure	67	44.7			
	Agree	41	27.3			
	Total	150	100.0			

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2. Hyperthyroidism causes hair loss	Disagree	22	14.7	2.62	0.730	Good
	Not Sure	13	8.7			
	Agree	115	76.7			
	Total	150	100.0			
3. Age-related hair loss	Disagree	39	26.0	2.41	0.875	Good
	Not Sure	11	7.3			
	Agree	100	66.7			
	Total	150	100.0			
4. The normal range of hair loss is 50_100 hairs per day	Disagree	37	24.7	2.20	0.811	Moderate
	Not Sure	46	30.7			
	Agree	67	44.7			
	Total	150	100.0			
5. Vitamin D deficiency causes hair loss	Disagree	8	5.3	2.84	0.493	Good
	Not Sure	8	5.3			
	Agree	134	89.3			
	Total	150	100.0			
6. A correlation exists between hair loss and zinc deficiency.	Disagree	14	9.3	2.62	0.652	Good
	Not Sure	29	19.3			
	Agree	107	71.3			
	Total	150	100.0			
7. The loss of hair is associated with ferritin insufficiency.	Disagree	14	9.3	2.31	0.636	Moderate
	Not Sure	75	50.0			
	Agree	61	40.7			
	Total	150	100.0			
8. Obesity causes hair loss	Disagree	75	50.0	1.75	0.835	Moderate
	Not Sure	37	24.7			
	Agree	38	25.3			
	Total	150	100.0			
9. Heredity does not cause hair loss	Disagree	28	18.7	2.58	0.788	Good
	Not Sure	7	4.7			
	Agree	115	76.7			
	Total	150	100.0			
10. A correlation exists between hair loss and iron deficiency.	Disagree	12	8.0	2.77	0.584	Good
	Not Sure	11	7.3			
	Agree	127	84.7			
	Total	150	100.0			
11. Low levels of biotin have been linked to hair loss.	Disagree	10	6.7	2.49	0.621	Good
	Not Sure	57	38.0			
	Agree	83	55.3			
	Total	150	100.0			

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12. There is a connection between hair loss and vitamin A insufficiency.	Disagree	12	8.0	2.62	0.631	Good
	Not Sure	33	22.0			
	Agree	105	70.0			
	Total	150	100.0			
13. There is a connection between hair loss and folic acid inadequacy.	Disagree	19	12.7	2.45	0.710	Good
	Not Sure	45	30.0			
	Agree	86	57.3			
	Total	150	100.0			
14. Autoimmune diseases that do not cause hair loss	Disagree	31	20.7	2.41	0.813	Good
	Not Sure	26	17.3			
	Agree	93	62.0			
	Total	150	100.0			
15. Multivitamin tablets can help treat hair loss	Disagree	18	12.0	2.59	0.696	Good
	Not Sure	25	16.7			
	Agree	107	71.3			
	Total	150	100.0			
16. Testosterone and DHT are one of the main causes of hair loss in women and men	Disagree	17	11.3	2.45	0.691	Good
	Not Sure	49	32.7			
	Agree	84	56.0			
	Total	150	100.0			
17. Natural remedies (such as oils) are ineffective in treating hair loss	Disagree	46	30.7	2.18	0.875	Moderate
	Not Sure	31	20.7			
	Agree	73	48.7			
	Total	150	100.0			
18. Stress and stress causes hair loss	Disagree	8	5.3	2.84	0.493	Good
	Not Sure	8	5.3			
	Agree	134	89.3			
	Total	150	100.0			
19. PCOS causes hair loss	Disagree	13	8.7	2.55	0.651	Good
	Not Sure	42	28.0			
	Agree	95	63.3			
	Total	150	100.0			
20. Pregnancy and childbirth affect hair loss	Disagree	8	5.3	2.76	0.539	Good
	Not Sure	20	13.3			
	Agree	122	81.3			
	Total	150	100.0			

N= Number, % = Percent, Sd=Standard Deviation

According to this table, most of the university population not sure the Cushing's syndrome does not cause hair loss (44.7%), most of the university population agree Hyperthyroidism causes hair loss (76.7%), most of the university population agree Age-related hair loss (66.7%), most of the university population agree the normal range of

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hair loss is 90_100hairs per day (44.7%), most of the university population agree Vitamin D deficiency causes hair loss (89.3%), The majority of university students concur that there is a connection between ferritin insufficiency and hair loss (40.7%), while the majority of students concur that there is a connection between zinc deficiency and hair loss (71.3%). However, half of the students disagree. The majority of university students believe that iron deficiency and hair loss are related (84.7%), that obesity causes hair loss (50%), and that heredity does not cause hair loss (76.7%).

In addition, the majority of university students concur that there is a connection between hair loss and vitamin A deficiency (70%) and folic acid deficiency and hair loss (57.3%), and over half of university students concur that there is a connection between biotin deficiency and hair loss (55.3%), most of the university population agree Autoimmune diseases that do not cause hair loss (62%), most of the university population agree Multivitamin tablets can help treat hair loss (71.3%), more than half of the university population agree Testosterone and DHT are one of the main causes of hair loss in women and men (56%), most of the university population agree Natural remedies (such as oils) are ineffective in treating hair loss (48.7%), most of the university population agree Stress and stress cause hair loss (89.3%), most of the university population agree PCOS causes hair loss (63.3%), and most of the university population agree Pregnancy and childbirth affect hair loss (81.3%).

Table (2.2): Table (2.1): University Population Knowledge Toward Causes of Hair Loss (Overall)

University Population Knowledge						
Assessment levels	**F**	**Percent**	**Scale**	**Total**		
				MS	**Sd**	**Assessment**
Poor	**0**	**0**	**1 – 1.66**	**2.47**	**0.693**	**Good**
Moderate	**39**	**26.0**	**1.67 – 2.33**			
Good	**111**	**74.0**	**2.34 – 3**			
Total	**150**	**100.0**				

F = frequency, MS = Mean Score, Standard Deviation.

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According to the table's data, 74% of university students have good knowledge of hair loss, 26% have moderate knowledge, and none have bad knowledge of the mean score and standard deviation, which are equal to 2.47+0.693.

Table (3): Relationships of Demographic Variables with University Population

Variables	Classes	Knowledge			Significant
		Moderate	Good	Total	
Sex	Female	16	70	86	Chi-Square = 5.730
	Male	23	41	64	Df= 1
	Total	39	111	150	P-Value= 0.017
					S
Age	20-29	23	52	75	Chi-Square = 1.698
	30-40	16	59	75	Df= 1
	Total	39	111	150	P-Value= 0.193
					NS
Academic achievement	Secondary School	22	44	66	Fisher's Exact Test = 6.124
	Bachelor's	16	58	74	Df= 3
	Master	0	8	8	P-Value= 0.080
	PhD	1	1	2	NS
	Total	39	111	150	

Df: Degree of freedom, P: Probability value, NS: Not Significant

The results of this table demonstrate a substantial correlation (p-value = 0.017) between the sex of university students and their understanding of the reasons for hair loss.

According to the table's data, there is no significant correlation between university students' awareness of the causes of hair loss and their age or academic standing (p-value greater than 0.05).

Discussion

The disorder known as hair loss, or alopecia, is defined by the partial or complete absence of hair from different body regions where it should normally develop. Hair loss can be localized, diffuse, temporary, or permanent, and it affects people of all ages and genders. When it comes to scalp hair and body parts, hair loss is frequently viewed in the medical community as a very moderate dermatological issue [8].

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In this study most of the university population agree that Vitamin D deficiency causes hair loss (89.3%), Iron deficiency and hair loss are related, according to the majority of university students (40.7%), while zinc insufficiency and hair loss are related, according to the majority of university students (71.3%). These results were in line with a study conducted in Jazan, Saudi Arabia, which found that roughly 74% of people believe that vitamin D, zinc, and ferritin deficiency are related to hair loss [9]. Furthermore, another study showed that about (68%) answered that vitamin D levels and hair loss are connected, (and 91%) and (81%) answered that there is a relationship between iron deficiency, and zinc deficiency (respectively), and hair loss [10, 11]. Moreover, about 70% of the population agrees about the effect of vitamin D on hair loss [12, 13].

In contrast, another study on the adult population in Majmaah City, Saudi Arabia, showed poor knowledge about vitamin D and hair loss [14].

Moreover, this study showed more than half of the university population agree More than half of university students agree that there is a connection between folic acid deficiency and hair loss (57.3%), the majority of students agree that there is a connection between vitamin A deficiency and hair loss (70%) and biotin deficiency and hair loss (55.3%). The findings were consistent with a prior study that found that approximately 63.3% of participants agreed that folic acid deficiency and hair loss are related, 50.7% of participants agreed that there is a connection between vitamin A deficiency and hair loss, and 62.3% of participants agreed that there is a connection between biotin deficiency and hair loss [10, 15, 16].

Moreover, in this study, most of the university population agrees that multivitamin tablets can help treat hair loss (71.3%). This supports an earlier dermatologist study that suggested using vitamins and minerals to treat at least one type of hair loss by age 60 [17-20].

Furthermore, in the current study, knowledge appears that the majority of the university population (74%) have good knowledge about hair loss, and 26% of them have moderate knowledge. These findings are similar to studies which showed high levels of knowledge and awareness [9, 21, 22].

In addition, a significant relationship was found between the university population's sex and their knowledge about the causes of hair loss (p-value = 0.017).

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The reason for this may be because the university society consists of a large percentage of females compared to males, as well as the possibility that females are more interested in topics related to hair loss. Moreover, no significant relationship between the university population (age and academic achievement) and their knowledge about causes of hair loss (p-value more than 0.05). These findings agreed with the previous study showed a lack of significant differences between ages and disagreed on the part of gender [9, 23-26].

Conclusion

Most of the university population has good knowledge about hyperthyroidism, zinc deficiency, iron deficiency, vitamin D deficiency, multivitamins, and PCOS syndrome, which is related to hair loss. Also, most of the university population has moderate knowledge about Cushing's syndrome, ferritin deficiency, and obesity with hair loss.

In general majority of the university population has good knowledge about hair loss, None of them have inadequate knowledge, although some have a moderate understanding.

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