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The Prevalence and Causes of Syncope among Girls Aged from 18 to 25 in Taif University

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Abstract--- *Background: Syncope has multiple causes including dehydration and exhaustion, heart conditions and blood flow obstruction. Objectives: this study aimed to measure the prevalence of syncope among Taif university students aged and its relation to some life activities. Methods: A cross sectional study was done on 204 students studying in Taif University who randomly selected. A questionnaire was designed to obtain information on syncope and life activities of the studied girls in the time from 2018 - 2019. Results: 56.9% of studied students had at least one syncope attack previously, and those students had a significant higher percent of those who always have prolonged standing, have excessive physical efforts, and who reported not taking their meals regularly. A non-significant relationship was found between students with and without previous syncopal attacks regarding their age, having health problems, having healthy diet, dietary supplements, hours of sleep, having a rest after a long day, suffering study stress, having personal or family problems, heavy meals, exposure to the sun, using umbrella for sun protection or using golf cars for transport from one building to another in the university compound. Conclusion: This study calls for paying attention to this health problem by the medical administration of the university and holding awareness campaigns regarding this health issue.*

Keywords--- *Prevalence, Syncope, Girls, Aged, Taif.*

I. INTRODUCTION

Syncope is defined as a transient loss of consciousness accompanied by loss of postural tone, followed by a complete resolution without intervention and characterized by fast onset and short duration. [1]

There are multiple causes of syncope include benign factors such as overheating, heavy sweating, dehydration , exhaustion or the pooling of blood in the legs due to sudden changes in the body position. [2]

It also includes life-threating factors as heart conditions as bradycardia, tachycardia, and blood flow obstruction.[2]

Syncope can be classified into three categories: (1) neutrally mediated syncope (vasovagal syncope) that benign and rarely needs medical intervention. (2) It happens when the nervous system that regulates the blood pressure and heart rate malfunctions in response to emotional stress or pain. (2) (2) situational syncope is related to physical functions such as violent coughing, laughing and swallowing. (3) Cardiac syncope where the high risk group those are those over 60 years or with known cardiac disease. [2]

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There are limited researchers that studied the prevalence of syncope among Taif university students and related factors. That is why this study aimed to assess this health problem in Taif city.

II. MATERIALS AND METHODS

Study design and duration: A cross sectional study was done using a structured questionnaire designed to obtain the necessary information from a the studied sample of female students of Taif university during 2018 - 2019.

Study settings: female medical college of Taif university

Sampling and population: female medical college was selected by simple random sampling methodology and all medical students were invited to participate in the study. All grades were contacted and asked to share.

Out of the college students, 204 students agreed to share in the study with a response rate of 65.2%.

Tools and data collection procedure: A structured pre-designed questionnaire was used for collection of the personal data, and previous experience of syncope attacks and related reasons. The questionnaire included questions on having a syncope attack in the previous 12 months, and the number of these attacks.

All students were asked about: having health problems, suffering darkening in the sight, taking meals regularly, having diet containing healthy food, taking dietary supplements, and hours of sleeping daily, having prolonged standing, getting a rest after a long day, suffering from study stress, having personal or family problems.

Having excessive physical effort, exposure to the sun for long periods, using golf cars for transport from one building to another in the university compound, and using an umbrella to protect them from the sun.

Statistical design: The data was analyzed by SPSS software version 16 and the Chi-square test was used for analysis of qualitative data.

Quantitative data was expressed as mean and standard deviation (Mean ± SD), and Mann-Whitney U-Test done to assess the relationship between independent variables.

Values of $p > 0.05$ were considered statistically insignificant, and those of less than 0.05 were considered statistically significant.

III. RESULTS

The mean age of the participant students was (20.83± 1.84 years). (Table 1 and 2) show that among the participant students, 23.5% reported having health problems, 37.3% had their meals regularly, 47.1% had diet containing healthy food, 22.1% take dietary supplements, and 44.6% sleep from 6-8 hours daily.

Of the students, 59.5% get a rest after a long day, 66.2% suffer from study stress, 26% have personal or family problems, 5.9% always having a heavy meal, 43.6% have prolonged standing, 11.3% have excessive physical efforts, 52% reported exposure to the sun for long periods, 36.8% use golf cars for transport from one building to another in the university compound, and 13.7% use an umbrella to protect you from the sun.

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Table 1: Response of Students to Questionnaire Items Related to Daily Activities (No.: 204)

Variable	No.	%
Do you have health problems?		
- Yes	48	23.5
- No	156	76.5
Do you take your meals regularly?		
- Yes	76	37.3
- No	128	62.7
Does your diet contain healthy food?		
- Yes	96	47.1
- No	108	52.9
Do you take dietary supplements?		
- Yes	45	22.1
- No	159	77.9
How many hours do you sleep?		
- 4-5	49	24
- 6-8	91	44.6
- more than 8	64	31.4
Do you get a rest after a long day?		
- Yes	122	59.8
- No	82	40.2
Do you suffer from study stress?		
- Yes	135	66.2
- No	69	33.8

Table 2: Response of Students to Questionnaire Items Related to Daily Activities (No.: 204)

Variable	No.	%
Do you have personal or family problems?		
- Yes	53	26
- No	151	74
Do you always have having a heavy meal?		
- Yes	12	5.9
- No	192	94.1
Do you always have prolonged standing?		
- Yes	89	43.6
- No	115	56.4
Do you have excessive physical efforts?		
- Yes	23	11.3
- No	181	88.7
Are you exposed to the sun for long periods?		
- Yes	106	52
- No	98	48
Do you use golf cars?		
- Yes	75	36.8
- No	129	63.2
Do you use an umbrella to protect you from the sun?		
- Yes	28	13.7
- No	176	86.3
Having syncope attack in the last 12 months		
- Yes	116	56.9
- No	88	43.1

Of the participant's students, 56.9% (116 students) reported having a syncope attack in the previous 12 months.

(Figure 1) shows that most of students had a previous syncope attack (54.3%) had 2-3 attacks in the previous 12 months, and 53.4% felt darkening in sight during the syncope attack.

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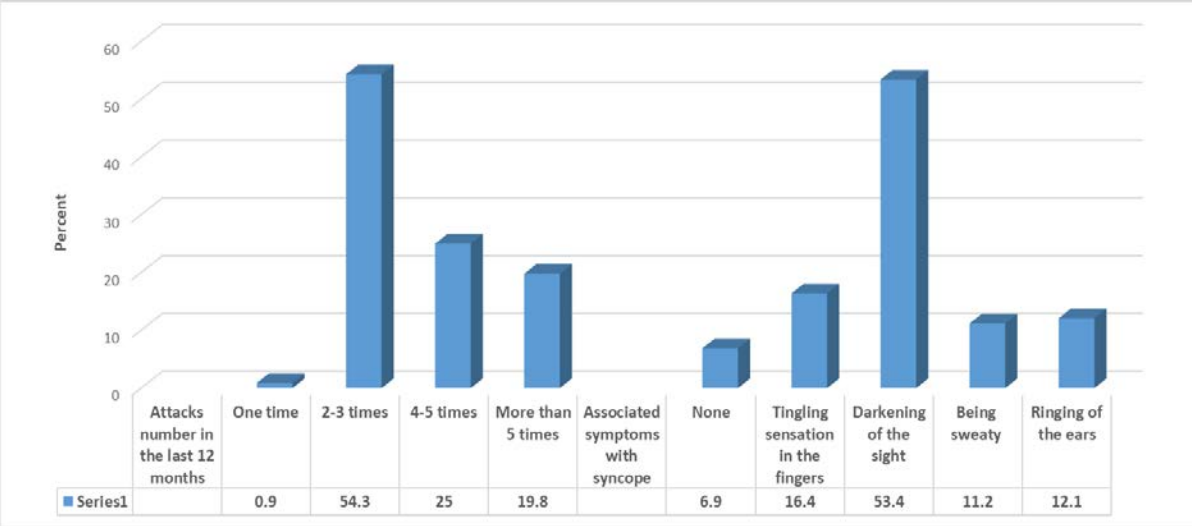

Figure 1: Response of Students with Previous Syncope Attacks to the Number of these Attacks in the Last 12 Months, and the Associated Symptoms (No.: 116)

Table 3: Relationship between Students with and without Previous Syncopal Attack and Some Daily Life Activities (No.: 116)

Variable	*Had syncope before (No.: 116)*	*Did not have syncope before (No.: 88)*	*Test*	*p-value*
	No. (%)	*No. (%)*		
Age (Mean ± SD)	20.73 ± 1.73	20.96 ± 1.97	0.5*	0.61
Do you have health problems?				
- Yes	32 (66.7)	16 (33.3)	2.46**	0.11
- No	84 (53.8)	72(46.2)		
Do you take your meals regularly?				
- Yes	32 (42.1)	44 (57.9)	10.75**	0.001
- No	84 (56.6)	44 (34.4)		
Does your diet contain healthy food?				
- Yes	50 (52.1)	46 (47.9)	1.68**	0.19
- No	66 (61.1)	42 (38.9)		
Do you take dietary supplements?				
- Yes	26 (57.8)	19 (42.4)	0.02**	0.88
- No	90 (56.6)	69 (43.4)		
How many hours do you sleep?				
- 4-5	27 (55.1)	22 (44.9)	0.25**	0.88
- 6-8	51 (56)	40 (44)		
- more than 8	38 (59.4)	26 (40.6)		
Do you get a rest after a long day?				
- Yes	70 (57.4)	52 (42.6)	0.03**	0.85
- No	46 (56.1)	36 (43.9)		
Do you suffer from study stress?				
- Yes	76 (56.3)	59 (43.7)	0.05*	0.81
- No	40 (58)	29 (42)		

NB. * Mann-whitney U- test **($\chi 2$) test

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Table 4: Relationship between Students with and without Previous Syncopal Attack and Some Daily Life Activities (No.: 116)

Variable	*Had syncope before (No. 116)* **No. (%)**	*Did not have syncope before (No. 88)* **No. (%)**	*(χ2) test*	*p-value*
Do you have personal or family problems?				
- Yes	33 (62.3)	20 (37.7)		
- No	83 (55)	68 (45)	0.85	0.35
Do you always have heavy meals?				
- Yes	8 (66.7)	4 (33.3)		
- No	108 (56.3)	84 (43.8)	0.5	0.48
Do you always have prolonged standing?				
- Yes	74 (83.1)	15 (16.9)	44.46	<0.001
- No	42 (36.5)	73 (63.5)		
Have you always have excessive physical efforts?				
- Yes	19 (82.6)	4 (17.4)	7	0.008
- No	97 (53.6)	84 (46.4)		
Are you exposed to the sun for long periods?				
- Yes				
- No	62 (58.5)	44 (41.5)	0.23	0.62
	54 (55.1)	44 (44.9)		
Do you use golf cars?				
- Yes	43 (57.3) 73	32 (42.7)	0.01	0.91
- No	(56.6)	56 (43.4)		
Do you use an umbrella to protect you from the sun?				
- Yes	11 (39.3)	17 (60.7)	4.08	0.043
- No	105 (59.7)	71 (40.3)		

(Table 3 and 4) show that students who did not have any previous syncopal attacks, had a significant higher percent of those who reported taking their meals regularly (57.9% vs. 42.1%) (p=0.001) when compared to those with previous syncopal attacks. In addition, students with previous syncopal attacks had a significant higher percent of those who always have excessive physical efforts (82.6% vs. 17.4%) (p=0.008). Students who reported having prolonged standing also has a significant higher percent of those who suffered syncopal attacks (83.1% vs. 16.4%) (p=<0.001).

On the other hand, a non-significant relationship was found between the two groups regarding (age, having health problems, having healthy diet, dietary supplements, or longer hours of sleep). The same non-significant relationship was found between the two groups regarding (Having a rest after a long day, suffering study stress, having personal or family problems, heavy meals, exposure to the sun, using umbrella for sun protection or using golf cars for transport from one building to another in the university compound (p > 0.05).

IV. DISCUSSION

In the present study showed that there was a high significant association between prolonged standing and fainting. In a study done in India in 2013, it was observed that syncope can occur in all body positions and in more than one position in individual patients. [3]

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A study done in University of Pittsburgh, Pennsylvania, USA in 1991, orthostatic hypotension was common in patients with syncope and was detected in the vast majority of patients by 2 minutes. [4]

This study observed that students with previous syncopal attacks had a significant higher percent of those who always have excessive physical efforts, and who reported not taking their meals regularly. This result coincides with that reported in a study done in Switzerland. In this study it was found that there is a significant association between having heavy meals and syncope or take meals regularly and syncope, but, there is no significant association between take supplements and fainting. [5] The same relationship between syncope and irregular meals was also reported in a USA study done in 2010 about Identification and Management of eating disorders in children and adolescents, and showed that dehydration can be seen in any patient with an eating disorder and can sometimes lead to orthostatic symptoms, presyncope, or syncope. [6]

The relationship between syncope and excessive physical effort reported in the present study was observed in Italy in 2019 by Humanitas University. [7]

The present study observed that a non-significant relationship was found between the two groups regarding their age, having health problems, having healthy diet, dietary supplements, hours of sleep, having a rest after a long day, suffering study stress, having personal or family problems, heavy meals, exposure to the sun, using umbrella for sun protection or using golf cars for transport from one building to another in the university compound. Different result was observed in a previous study done in 1992 to assess the relationship between psychiatric disorders and unexplained syncope and concluded that psychiatric disorders are common in syncope. [8]

Regarding the non-significant relationship between syncope and sun exposure observed in the present study. Different results was reported in a previous study done in North America in 2004 and showed that heat-related illness represents a continuum of disorders from minor syndromes such as heat cramps, heat syncope, and heat exhaustion to the severely life-threatening disorder known as heat stroke. [9]

The present study revealed that 66.7% of students were exposed to health problems have syncope. This result is somewhere in agreement with previous study done in Federal University of Minas Gerais in Brazil where cardiac disease cause syncope due to impaired COP. [10]

V. LIMITATIONS

Limitations of the present study included the small sample size, the narrow range of age, and absent of enough previous studies for good literature review.

VI. CONCLUSION

The present study found that 56.9% of studied students had at least one syncope attack previously, and those students had a significant higher percent of those who have prolonged standing, always having excessive physical efforts, and who reported not taking their meals regularly. A non-significant relationship was found between students with and without previous syncopal attacks regarding their age, having health problems, having healthy diet, dietary supplements, hours of sleep, having a rest after a long day, suffering study stress, having personal or

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family problems, heavy meals, exposure to the sun, using umbrella for sun protection or using golf cars for transport from one building to another in the university compound. That study calls for paying attention to this health problem by the medical administration of the university, and holding awareness campaigns regarding this health issue.

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Conflicts of interest: none declared.

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