Original Article :

Knowledge and Awareness of Syncope among the Population of Al-Majmaah Region, Saudi Arabia

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Abstract

Background and Aims:
Syncope, or fainting, is a transient loss of consciousness due to reduced brain blood flow. It affects health and well-being and stems from various medical causes. Understanding public awareness of syncope is vital for targeted healthcare interventions to improve outcomes.

Methods:
This descriptive cross-sectional study surveyed 546 individuals in Al-Majmaah, Saudi Arabia, selected via convenient sampling. Data was collected using self-administered questionnaires and analyzed with SPSS.

Results:
Most participants were female (356, 65.2%), with 252 (46.1%) aged 18-20. Single participants totaled 351 (64.3%), and 170 (31.1%) had a monthly income of 5000-9999 Saudi Riyals. Awareness was high for vasovagal syncope (390, 71.4%), orthostatic hypotension (333, 61.0%), and cardiogenic syncope (309, 56.6%), but only 207 (37.9%) recognized coma in a traffic accident scenario. Knowledge levels were good in 265 (48.5%) and poor in 281 (51.5%). Marital status significantly influenced knowledge ($p=0.018$), with widows (66.7%) and singles (52.4%) showing higher awareness than others.

Conclusion:
Over half the Al-Majmaah population demonstrated decent syncope awareness. Marital status notably impacted knowledge, with widows and singles excelling. Targeted health education on syncope is essential to improve lifestyle choices and public health.

Keywords:
Knowledge, Awareness, Syncope, KSA, Al-Majmaah region in Saudi Arabia

Introduction:

The symptoms of syncope include a brief loss of consciousness and altered posture, which is followed by a spontaneous recovery. impacts around 15% of children who are 18 years of age or younger and have had one or more syncopal episodes[1]. The variety of syncope's clinical manifestations and the lack of clarity around its causes sometimes result in an expensive and too thorough assessment, whether the patient is inpatient or outpatient. The ambiguity also gives the patient a great deal of anxiety and concern. Vasovagal dysfunction, hypertrophic cardiomyopathy, and seizure disorders are among the causes of syncope in the general population[2].

Between 30% and 40% of people are thought to be affected by syncope, which is a symptom of an underlying ailment rather than a sickness in and of itself. However, the actual incidence is probably greater since many occurrences go unreported to medical institutions. Every year, syncope causes up to 740,000 ED visits and more than a quarter of a million hospital hospitalizations in the US[3]. Numerous factors, including neurologic, metabolic, pulmonary, volume depletion, vasovagal, and cardiac, may produce syncope. Heart-related syncope has a significant risk of becoming deadly, even though the majority of syncope cases are benign[4].

Distinguishing syncope from other altered states such as presyncope, vertigo, dizziness, lightheadedness, seizures, cardiac arrest, and coma is vital. In contrast to syncope, cardiac arrest is an abrupt loss of consciousness without a spontaneous recovery, requiring electrical or pharmaceutical cardioversion to be administered right away[5]. In addition to having amnesia of losing consciousness and typically experiencing an unwitnessed incident, older people are less likely to have warning signs or prodromes before syncope[6]. With a frequency of 42% in the general population, an annual incidence of 6%, and varied numbers of episodes per 1,000 patients, syncope is the primary complaint in 1-2 percent of ED visits[7,8].

The first peak in syncope incidents in around age 15, mostly due to vasovagal dysfunction, with another peak after the age 65, particularly and significantly after age 70[9]. It's worth to note that syncope is the most frequently reported medical emergency in dental practices also[10].

Problem:

Syncope, commonly known as fainting, is a sudden, transient loss of consciousness often caused by a temporary decrease in blood flow to the brain. While syncope itself is not a disease, it can be indicative of an underlying medical condition, and its consequences can range from mild discom-

fort to serious injuries. The research problem focuses on assessing the knowledge and awareness levels of syncope among the population of Al-Majmaah Region, Saudi Arabia.

Motivation:

Syncope is a common medical condition characterized by a temporary loss of consciousness. It can be caused by various factors, including cardiovascular, neurological, and psychological conditions. Syncope can have significant implications for public health, as it may lead to injuries, accidents, and decreased quality of life. Understanding the level of knowledge and awareness about syncope within a specific population, such as the Al-Majmaah region in Saudi Arabia, is crucial for developing targeted interventions and improving public health outcomes.

Syncope can be challenging to diagnose accurately, as it is often transient and unpredictable. Misinterpretation of syncope symptoms can lead to delayed or incorrect diagnoses, potentially resulting in inappropriate treatments or unnecessary investigations. By assessing the knowledge and awareness of syncope among the population of the Al-Majmaah region, healthcare providers can better understand the specific misconceptions or gaps in knowledge that may contribute to diagnostic challenges. This knowledge can guide the development of educational programs and resources aimed at improving healthcare professionals' ability to recognize and manage syncope effectively.

Research objectives:

General Objective:

To assess the overall knowledge level of the population in Al-Majmaah Region, Saudi Arabia, regarding syncope.

Specific Objectives:

1. Investigate the level of awareness regarding preventive measures and lifestyle changes that can help manage or reduce the risk of syncope.
2. Evaluate the knowledge of the population regarding the importance of timely medical intervention and consultation for individuals experiencing syncope.

Propose educational strategies and interventions based on the findings to improve overall knowledge and awareness of syncope in Al-Majmaah Region

Literature review

A cross-sectional survey was carried out in Saudi Arabia's Makkah Region. The results showed that 72.6% of participants were female, and around one-third of them acknowledged having suffered syncope at some point in their lives. Approximately one-third of individuals acknowledged having syncope at some point in their lives. The average awareness score was 5.3±1.64, with the majority of research participants (68.9%) demonstrating a strong degree

of understanding regarding syncope and 31.1% having low knowledge. The most widely identified kind of syncope was cardiogenic syncope. Additionally, widowed individuals and those between the ages of 18 and 35 showed a high level of syncopal attack knowledge ($p<0.001$)[11].

A cross-sectional study was carried out in Saudi Arabia's capital, Riyadh. The results showed that there were 405 individuals in all who responded. In terms of demographic information, 76% of participants (n = 214, n = 134, and n = 306) had a university degree, 33% had a medical background, and 53% were female. The participants were 33.2 ± 13.3 years old on average. Of the participants (n = 221), 55% were aware of syncope. Vasovagal syncope (61%, n = 246) and orthostatic syncope (79%, n = 319) had the most accurate responses among the syncope patients. In instances one ($p = 0.001$), two ($p = 0.004$), and seven ($p = 0.01$), males outperformed females[12].

Research methodology

Study design and setting: This is a descriptive cross-sectional investigation. Initially, a pilot study will be undertaken to test the questionnaire, with a focus on its initial validation and enhancement through a limited-scale survey. The questionnaire's development will be informed by a thorough examination of existing literature on syncope awareness[12]. To assess the questionnaire questions' relevance, comprehensibility, and clarity, a group of thirty participants will be recruited. Preliminary data will be carefully examined after the pilot survey to identify any possible problems and areas that need improvement. The information gathered from this pilot research will help refine the questionnaire for use in a larger study evaluating syncope awareness in the target demographic. The study will be carried out in Saudi Arabia's Al-Majmaah Region.

Target population: population in Al-Majmaah Region.

Sampling:

The sample size was determined using the formula n=(z^2 xpq)/d^2, where n stands for sample size, Z for standard deviation, p for prevalence, q for 1-p, DE for design effect, and d for error accepted, all of which were equal to 1.96.

A total of 384 was determined to be the sample size. The non-probability convenience sampling method was used to choose the participants.

trial duration: The trial will run for six months.

Data collection: A self-administered, pre-tested questionnaire will be used to gather the data. Version 26 of the statistical program for social sciences (SPSS) will be used to examine the data. Age, gender, and syncope awareness questions were among the inquiries.

Criteria for inclusion and exclusion: Saudi

and non-Saudi citizens who were at least eighteen years old, mentally capable, and resided in the Al-majmaah area were included. Those under the age of eighteen were not included.

Data analysis: Statistical analysis will be conducted using SPSS Statistics version 26. Categorical variables were described using the frequency and percentiles. Ongoing variables will be described using the mean and standard deviations. To assess the differences and relationships between variables, the chi-squared test, t-test, and analysis of variance (ANOVA) will be used. With a 95% confidence interval (CI), the significance level (p-value) was established at 0.05.

Ethical consideration: Majmaah University's ethics committee will provide ethical approval. Participants will be asked for their informed permission, and all information gathered will be kept private and utilized only for this research.

Results:

The questionnaires were completed by 546 individuals in total. The majority of them, 356 (65.2%), were female, and 252 (46.1%) of them were in the 18–20 age range. A significant percentage of the participants, 170 (31.1%), had monthly household incomes between 5000 and 9999 Saudi Riyals, and more than half of them, 351 (64.3%), were unmarried.

Table 1: Socio-demographic information of the Participants (N=546).

Socio-demographic information	Category	Frequency and proportion n (%)
Gender	Female	356 (65.2%)
	Male	190 (34.8%)
Age	18-20 years old	252 (46.1%)
	21-24	173 (31.7%)
	More than 25 years	121 (22.2%)
Marital status	Single	351 (64.3%)
	Married	149 (27.3%)
	Divorced	34 (6.2%)
	Widow	12 (2.2%)
Monthly household income	Less than 5000 Saudi Riyals	102 (18.7%)
	Between 5000-9999 Saudi Riyals	170 (31.1%)
	Between 10000-14999 Saudi Riyals	158 (28.9%)
	More than 15000 Saudi Riyals	116 (21.3%)

Sociodemographic data shown as proportions (%) and frequencies (n).

Table 2 depicts the eight case scenarios to assess the participants' ability to recognize how syncope presents. The study revealed that majority 390 (71.4%) of the participants correctly identified vasovagal syncope which is scenario one. More than half 333 (61.0%) of the participants correctly recognized scenario four; which represented orthostatic hypotension and also cardiogenic syncope; scenario two was correctly identified by 309 (56.6%) of the participants. Furthermore, more than half of the participants correctly identified alcohol intoxication-scenario seven 331 (60.6%) and scenario five 320 (58.6%). Less than half correctly identified hypoglycemic coma 248 (45.4%) and seizure attack 239 (43.8%); which are scenarios three and eight respectively. Only 207 (37.9%) of the participants correctly identified coma after traffic road accident-scenario six.

Table 2: Participants' knowledge about case scenarios .

Scenarios	Syncope, n (%)	Not syncope,n (%)
1. A primary school student fainted upon seeing the needle for her routine flu shot.	390 (71.4%)	156 (28.6%)
2. Your neighbor, who has a heart condition, suddenly lost consciousness while praying but quickly regained it.	309 (56.6%)	237 (43.4%)
3. A diabetic individual who skipped breakfast felt lightheaded and experienced a rapid heartbeat while speaking in front of a group	298 (54.6%)	248 (45.4%)
4. An elderly man on medication for high blood pressure was lying down. When he suddenly stood up, he felt dizzy and lost his balance, resulting in a fall.	333 (61.0%)	213 (39.0%)
5. A woman with anemia suddenly stood up and became dizzy. While going down the stairs, she nearly fell but managed to stabilize herself by grabbing the handrails.	226 (41.4%)	320 (58.6%)
6. Following severe injuries from a car accident, a patient was hospitalized and remained unconscious for 10 days before finally regaining consciousness.	339 (62.1%)	207 (37.9%)
7. An individual who had consumed alcohol felt unsteady and ended up falling.	215 (39.4%)	331 (60.6%)
8. While shopping in a supermarket, a person began to feel dizzy and eventually lost consciousness. Shortly after collapsing, he started experiencing convulsions and bit his tongue. Around 10 minutes later, he regained consciousness.	307 (56.2%)	239 (43.8%)

Participants' knowledge about case scenarios presented in frequencies (n) and proportion (%)

*Syncope causes

Table 3 shows the participants' degree of syncope knowledge in relation to their sociodemographic characteristics. The participants' degree of knowledge of syncope was assessed using eight statements. There were two choices for each statement: "Syncope" and "Not Syncope." Each right response received a score of 1, and each wrong response received a score of 0. Eight was the greatest possible score for any responder, and zero was the lowest possible score. The information was transformed into composite scores. Based on scores, the knowledge levels were divided into the following categories: 0–4 = Poor knowledge and 5-8 = Good knowledge. The participants' expertise levels were then determined by analyzing the data. According to the survey, 285 (51.5%) of the participants had poor knowledge of syncope, whereas 265 (48.5%) of the participants had strong knowledge.

Table 3: Level of knowledge about Syncope.

Knowledge level	Scores	Frequency (n)	Percentage (%)
Good knowledge	5-8	265	48.5%
Poor knowledge	0-4	281	51.5%

Level of knowledge about Syncope presentedin frequencies (n) and proportion (%)

Table 4 (below) depicts the relationship between participants' socio-demographics attributes and their knowledge level about Syncope. The results established statistically significant association between marital status and the level of knowledge about Syncope with p-values<0.05 (p-value=0.018*). The widows exhibited significantly higher and good knowledge about Syncope than other marital status (66.7%, p-value=0.018*). Furthermore, the singles showed significantly good knowledge about Syncope (52.4%, p-value=0.018*) than the married and the divorced participants. There were no statistically significant association between gender, age, monthly household income and the level of knowledge about Syncope with (p>0.05).

Table 4: The association between Socio-demographic variables and level of knowledge about Syncope.

	Level of knowledge			
Variables	Category	Poor	Good	p value
Gender	Female	185 (52.0%)	171 (48.0%)	0.748
	Male	96 (50.5%)	94 (49.5%)	
Age	18-20 years old	123 (48.8%)	129 (51.2%)	0.186
	21-24	99 (57.2%)	74 (42.8%)	
	More than 25 years	59 (48.8%)	62 (51.2%)	
Marital status	Single	167 (47.6%)	184 (52.4%)	0.018*
	Married	92 (61.7%)	57 (38.3%)	
	Divorced	18 (52.9%)	16 (47.1%)	
	Widow	4 (33.3%)	8 (66.7%)	

Monthly household income	Less than 5000 Saudi Riyals	59 (57.8%)	43 (42.2%)	0.083
	Between 5000-9999 Saudi Riyals	96 (56.5%)	74 (43.5%)	
	Between 10000-14999 Saudi Riyals	73 (46.2%)	85 (53.8%)	
	More than 15000 Saudi Riyals	53 (45.7%)	63 (54.3%)	

Association between participants' socio-demographic information and level of knowledge about Syncope
* Significant at p<0.05 level.

Discussion:

The current study aims to assess the overall knowledge level of the population in Al-Majmaah region, Saudi Arabia. The sample for the current study primarily consisted of female participants aged between 18-20 years old, with most of them being singles and earning a monthly household income of between 5000-9999 Saudi Riyals.

The study revealed that nearly half 265 (48.5%) of the participants had good knowledge level about Syncope while majority 281 (51.5%) of them exhibited poor knowledge level about Syncope. The finding in the current study shows a higher level of awareness compared to a study conducted by Serafi et al. in Saudi Arabia, which found a 39.5% awareness level of Syncope[13]. Comparable study conducted in Indonesia by Rahmawati et al. among senior high school students reported a relatively higher awareness about Syncope of 97.5% than our current study[14]. The variation in the findings across these studies can be attributed to the differences in attributes of the sampled populations as well as the different scoring systems adopted by each study[15].

The study established statistically significant association between marital status and the level of knowledge about Syncope with p-values<0.05 (p-value=0.018*). The findings are consistent with those of a study conducted by Aljuwaybiri et al which reported marital status to be significantly associated with knowledge about Syncope[11] The widows exhibited significantly higher and good knowledge about Syncope than other marital status (66.7%, p-value=0.018*). Furthermore, the singles showed significantly good knowledge about Syncope (52.4%, p-value=0.018*) than the married and the divorced participants. The findings are in line with those of Sheldon et al. who reported that single were more likely to be aware about Syncope that other marital status[16].

The study revealed that majority of the participants correctly identified vasovagal syncope which is scenario one. This is in agreement with a study conducted by Juraschek et al. which reported higher knowledge about vasovagal syncope by the study participants[17]. Furthermore, more than half

of the participants also correctly recognized scenario four; orthostatic hypotension and also cardiogenic syncope which is scenario two. The findings are consistent with those of a study conducted by O'Brien and Kenny who demonstrated knowledge about cardiac causes of Syncope and orthostatic hypotension to be highly prevalent among the elderly in the society[18]. The study revealed that only 207 (37.9%) of the participants correctly identified coma after traffic road accident-scenario six. Similarly, the study conducted by Brady and Shen reported that less than half of the participants were able to distinguish between a coma occasioned by an accident other Syncope scenarios[19]. The findings demonstrate that a notable proportion of participants misinterpreted Syncope with other scenarios including hypoglycemic coma, seizures attack. The study underscores that need for education programs and efforts aimed at increasing awareness on the risks of Syncope, importance of timely medical intervention as well as preventive and lifestyle changes for improved health outcomes and quality of life among the population[20].

One of the main limitations of this investigation was the use of a cross-sectional study design, which can only identify relationships between components but not causalities. Considering that the study was limited to only one region- Al-Majmaah, its findings cannot be applied to the entire Saudi Arabia population.

Conclusions:

In the general population of the Al-Majmaah area of Saudi Arabia, over half of the participants showed a decent degree of understanding regarding syncope, according to the research. The individuals' degree of knowledge was greatly impacted by their marital status, with widows and singles demonstrating strong syncope knowledge. Targeted health education on syncope and its causes is necessary to encourage people to lead better lifestyles and enhance their general health.

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