Original Article

Knowledge and Awareness Regarding Bell's Palsy Among the General Population in thejazan Region of Saudi Arabia

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Abstract

Background and Aim: Bell's palsy is an idiopathic facial nerve paralysis causing unilateral muscle weakness, characterized by symptoms such as an inability to furrow the forehead, a drooping eyelid, and a drooping corner of the mouth. Commonly, Bell's palsy has an unknown origin but has been linked to reactivated herpes simplex virus (HSV-1) at the geniculate ganglion of the facial nerve. This study aimed to determine the level of knowledge and awareness regarding Bell's palsy among the general population in the Jazan region of Saudi Arabia.

Methods: A cross-sectional study was conducted among 503 individuals selected randomly from the general population in Jazan. Data was collected through a validated online questionnaire.

Results: The study included a total of 503 participants, with 31 (6.2%) diagnosed with facial palsy. Bell's palsy awareness among participants was evaluated, revealing that 187 (37.2%) identified it as an idiopathic condition. Regarding age, nearly all the participants under 20 showed poor levels of awareness (95.9%). Among those aged 20ð35, only 46 (23.4%) had good awareness (P = 0.011). Moreover, only 10 (32.3%) of the diagnosed individuals demonstrated good levels of awareness (P = 0.028). In addition, most of the participants who knew someone who had been diagnosed with facial palsy (319; 80.4%) had a poor level of awareness (P = 0.026).

Conclusions: The study revealed moderate awareness of Bell's palsy among the general population in Jazan region, with age being a significant factor influencing awareness levels. The findings indicated the necessity for targeted educational interventions, particularly targeting younger individuals.

Keywords: Awareness; Bell's palsy; Facial palsy; Seventh cranial nerve palsy; Jazan

Introduction

Bell's palsy is an idiopathic, acute peripheral-nerve paralysis affecting the facial nerve.[1] Lower motor neuron Bell's palsy causes muscle weakness on one side of the face.[1,2] Common manifestations include an inability to furrow the forehead, a drooping eyelid, an inability to close the eyelid, a sagging lower lid upon attempt at closure, alterations in the quantity of tears and lacrimation, and a drooping corner of the mouth.[3] There are around 10,000 fibers in the facial nerve. The facial expression muscles are innervated by these fibers, which are primarily myelinated.[4] Bell's palsy has an unknown origin; tumors, meningitis, stroke, diabetes mellitus, head trauma, and inflammatory illnesses of the cranial nerves (sarcoidosis, brucellosis, etc.) are some potential causes of facial paralysis.[5] However, in up to 50% of cases, Bell's herpes simplex virus (HSV-1) has been linked to Bell's palsy, and reactivated HSV-1 at the geniculate ganglion of the facial nerve may be a major contributing factor.[2] Bell's palsy has a number of risk factors associated with it, including diabetes, pregnancy, preeclampsia, obesity, and hypertension. It can affect people of all ages and of both sexes. Idiopathic facial paralysis occurs between 13 and 107 times per 100,000 people per year, and Bell's palsy becomes more prevalent as people age, peaking in the 60s and then dropping in the 70s.6 Regarding the prognosis of Bell's palsy, N. Julian Holland, Waitemata District Health Board, Auckland, New Zealand, showed that 85% of Bell's palsy cases clinically improved within three weeks.[2] Bell's palsy is typically treated with oral corticosteroids; an antiviral drug is included in the treatment because of the possible role of HSV-1 in the etiology, but there is no evidence supporting the real benefit of antiviral medications for 10-12 days.7 This study aimed to determine the knowledge and awareness levels regarding Bell's palsy among the general population in the Jazan region. In the Jazan region of Saudi Arabia, no comprehensive studies have been conducted to assess the level of awareness regarding Bell's palsy among the general population. This study aimed to fill this gap by evaluating the public's understanding of Bell's palsy in Jazan. Identifying deficiencies in awareness is crucial for developing targeted educational interventions that can lead to earlier diagnosis and more effective management of the condition. By focusing on this region-specific study, we aimed to provide valuable insights into how demographic factors influence awareness levels, thereby contributing to a more nuanced understanding of Bell's palsy and informing future health education strategies. This research is essential for improving public health outcomes and ensuring that individuals with Bell's palsy receive timely and appropriate care.

Methodology

Study setting

The study was conducted in the Jazan region, one of the 13 regions of Saudi Arabia. It lies in the southwest of the Saudi advancement to Yemen.

Study design and participant selection

This was a cross-sectional analytical study design. The study was undertaken between February 17,2023, and August 14,2023. The

general population of the Jazan region was included in the study. Those who could not respond to the questionnaire and those who live outside the Jazan region were excluded.

Sample size

The sample size for the study was determined using the formula n = z21-a P(l-P)/d2.n, where z is the standard normal distribution (1.96-2 to a confidence level of 95%), p is the percentage of primary indicator, expressed as a decimal (default 0.5), and d is the degree of precision required on either side for the population (d = 0.05 [5%]). After applying this formula, the initial sample size was determined to be 400 participants. Accounting for a 25% non-response rate, the final sample size was 500 participants. Simple random sampling was the technique used in this study.

Data collection

Data was collected using a voluntary electronic questionnaire from a previous study conducted in the Western region of Saudi Arabia then distributed through WhatsApp.[3] This is a three-part questionnaire; the first part is informed consent, the second collects demographic information, and the third includes 14 questions to measure the participants' knowledge about causes, symptoms, management, and awareness of Bell's palsy.

This study was reviewed and approved by the Research Ethical Committee at Jazan University. Participation was voluntary and participants were free to withdraw from the study at any time. All information collected was kept confidential.

Ethical approval and consent to participate

Ethical approval was obtained from the Standing Committee for Scientific Research - Jazan University (HAPO-10-Z-001) (Reference no.: REC-44/07/559) before we started the research. Informed consent was obtained from the participants before collecting data. Participant data was handled with an adequate level of confidentiality. The privacy of the participants was maintained, and their information was used only for scientific purposes and never against their will.

Statistical Analysis

Data were coded and entered into an Excel sheet. Statistical analyses were performed using IBM SPSS version 25. Descriptive and inferential statistics were used for data analysis. The chi-squared test was performed to determine the associations between personal data and awareness regarding Bell's Palsy. A P-value of <0.05 was considered significant. Each correct response was scored 1 point for the awareness items, and the total sum of the discrete scores from the various items was computed. A respondent with <60% (7 points) of the maximum score was regarded to have low awareness, whereas a respondent with a score of 60% or higher (8 points or more) was considered to have good awareness.

Results

A total of503 participants met the inclusion criteria, agreed to participate, and completed the online questionnaire. The participants' ages varied from 18 to 50 years. Women accounted for 308 (61.2%) of die participants. There were 293 married individuals (58.3%), 276 (54.9%) employed people, 346 (68.8%) university graduates, and 102 (20.3%) with a secondary level of education (Table 1).

Table 1: Sociodemographic characteristics of the participants

Variable	Frequency	Percent (%)
Age (in years)		
Less than 20	49	9.7
20-35	197	39.2
36-50	193	38.4
More than 50	64	12.7
Gender		
Male	195	38.8
Female	308	61.2
Marital Status		
Single	194	38.6
Married	293	58.3
Widow/widower	4	0.8
Divorced	12	2.4
Employed		
Yes	276	54.9
No	227	45.1
Level of Education		
Primary school	8	1.6
Intermediate school	18	3.6
Secondary school	102	20.3
University	346	68.8
Post-graduate	29	5.8

In terms of Bell's palsy history among the study participants, we discovered that 31 (6.2%) had been diagnosed with facial palsy. When we asked the participants if they had heard of someone they know being diagnosed with facial palsy, most responded yes (397, 78.9%) (Table 2).

Table 2: History of Bell's palsy among study participants

Variable	Frequency	Percent (%)
Have you ever been diagnosed with facial palsy?		
Yes	31	6.2
No	472	93.8
Do you know or have you ever heard about someone who had been diagnosed with facial palsy?		
Yes	397	78.9
No	106	21.1
Relation to the person who had been diagnosed with facial palsy		
Friend	115	22.9
Family	202	40.2
Neighbor	69	13.7
Other	11	2.2

Bell's palsy awareness among respondents revealed that 187 (37.2%) properly identified it as an idiopathic condition. A total of 170 (35.6%) participants said that males and females are affected equally. When the participants were asked about the nerve affected in facial palsy, 306 (60.8%) of the participants correctly reported that it was the seventh cranial nerve. When we asked the participants about the symptoms of facial palsy, 286 (56.9%) cited the inability to eat or smile, and 414 (82.3%) cited weakness on one side of the face. Regarding treating Bell's palsy, 422 (83.9%) participants said it is treatable. Moreover, most participants (425, 84.5%) stated that Bell's palsy is treated by physiotherapy **(Table 3).**

Table 3: Bell's palsy awareness among study participants

Variables		N	%
What causes Bell's palsy?	Idiopathic	187	37.2
	Viral infection	74	14.7
	Stroke	113	22.5
	Trauma	168	33.4
	I don't know	165	32.8
Which sex is most affected?	Equally affected	179	35.6
	Men	78	15.5
	Women	123	24.5
	I don't know	123	24.5
Which nen'e is affected in facial nen'e palsy'?	Cranial nen'e 1	17	3.4
	Cranial nen'e 5	28	5.6
	Cranial nen'e 7	306	60.8
	I don't know	152	30.2

Variables		N	%
What are the symptoms of Bell's palsy?	Absence of tears	86	17.1
	Inability' to eat or smile	286	56.9
	Weakness on one side of the face	414	82.3
	Convulsions	163	32.4
	Dry mouth	82	16.3
	Headache	155	30.8
	Pain in or behind the ear	141	28.0
	Fever	21	4.2
	Vomiting	11	2.2
	I don't know	65	12.9
Is Bell's palsy generally a self-limiting disease?	Yes	94	18.7
	No	268	53.3
	I don't know	141	28.0
How long does Bell's palsy persist in an affected individual?	Hours to days	6	1.2
	Days to week	78	15.5
	Weeks to months	258	51.3
	It is a lifelong disease	36	7.2
	I don't know	125	24.9
What is the treatment for Bell's palsy?	Physiotherapy	425	84.5
	Steroids	85	16.9
	Antibiotics	88	17.5
	Herbal medicine	79	15.7
	Pain killers	94	18.7
	Spiritual treatment	98	19.5
	I don't know	81	16.1
Do you think traditional medicine has a role in treating Bell's palsy?	Yes	322	64.0
	No	71	14.1
	I don't know	110	21.9
Is Bell's palsy a contagious disease?	Yes	10	2.0
	No	450	89.5
	I don't know	43	8.5

Regarding the source of information, the majority of our respondents received information about Bell's palsy from family (221,24.6%) and friends (188,20.9%) **(Table 4).**

Table 4: Sources of information frequencies

		Responses		
		N	Percent	Percent of Cases
Sources of information[3]	Healthcare	57	6.3%	11.3%
	Family	221	24.6%	43.9%
	Friend	188	20.9%	37.4%
	Social media	120	13.3%	23.9%
	Books	38	4.2%	7.6%
	TV	12	1.3%	2.4%
	Internet	113	12.6%	22.5%
	Magazine	18	2.0%	3.6%
	Studies	73	8.1%	14.5%
	None	59	6.6%	11.7%
Total		899	100.0%	178.7%

In comparing awareness between the participants according to their demographic factors, we found that these factors significantly affect some of the awareness items. Regarding age, nearly all the participants below 20 years old had a poor level of awareness of facial palsy (47, 95.9%). Furthermore, out of 151 participants aged 20-35, only 46 (23.4%) had a good awareness level of facial palsy (P = 0.011). Out of the 31 participants who have been diagnosed with facial palsy, only 10 (32.3%) had good awareness, while the other 21 (67.7%) had a poor awareness level of facial palsy (P = 0.028). Moreover, most of the participants who answered yes when they were asked if they had heard about someone they know being diagnosed with facial palsy had a poor level of awareness of facial palsy (319, 80.4%) (P = 0.026) **(Table 5).**

Table 5: Distribution of study participants' awareness regarding Bell's palsy by their personal data

Variables		Awareness level				P-value
		Poor (414)		Good (89)		
		N	%	N	%	
Age (in years)	Less than 20	47	95.9	2	4.1	**0.011**
	20-35	151	76.6	46	23.4	
	36-50	162	83.9	31	16.1	
	More than 50	54	84.4	10	15.6	
Gender	Male	164	84.1	31	15.9	**0.401**
	Female	250	81.2	58	18.8	
Marital Status	Single	160	82.5	34	17.5	**0.408**
	Married	242	82.6	51	17.4	
	Widow/widower	2	50	2	50	
	Divorced	10	83.3	2	16.7	
Employed	Yes	229	83.0	47	17.0	**0.667**
	No	185	81.5	42	18.5	
Level of Education	Primary school	7	87.5	1	12.5	**0.308**
	Intermediate school	17	94.4	1	5.6	
	Secondary school	79	77.5	23	22.5	
	University	289	83.5	57	16.5	
	Post-graduate	22	75.9	7	24.1	
Have you ever been diagnosed with facial palsy?	Yes	21	67.7	10	32.3	**0.028**
	No	393	83.3	79	16.7	
Have you ever heard about someone you know who had been diagnosed with facial palsy?	Yes	319	80.4	78	19.6	**0.026**
	No	95	89.6	11	10.4	

Discussion

This study involved a diverse group of participants from the Jazan region of Saudi Arabia, aiming to assess the general understanding and awareness of Bell's palsy. The results present a multifaceted picture of awareness, emphasizing the significant influence of demographic factors.

Of the participants, 6.2% reported a history of Bell's palsy, a figure that aligns with global estimates, which range between 15 and 30 cases per 100,000 people annually.7-10 However, regional variations exist, with incidence rates reaching 25.7 cases per 100,000 per year in regions like Qurayyat, Saudi Arabia.[7] In the Eastern Province of Saudi Arabia, 123 patients with idiopathic Bell's palsy were seen for six years.[11]

In Arar, northern Saudi Arabia, the prevalence was 26.3%.[12]

Additionally, around 78.9% of participants knew someone diagnosed with Bell's palsy, possibly due to the region's robust social and familial networks, which foster information exchange. Regarding disease understanding, only 37.2% of participants correctly identified Bell's palsy as an idiopathic condition. This implies a potential gap in disease understanding and hints at the risk of misinformation and unnecessary fear. This observation aligns with a study from Western Saudi Arabia, which found unsatisfactory awareness levels among the general population.[3]

Around 60.8% of participants in our study correctly recognized the seventh cranial nerve as the nerve affected by Bell's palsy, suggesting somewhat widespread medical knowledge about the disease. A survey conducted among dental students in Chennai found that their understanding of anatomy, diagnosis, and treatment of Bell's palsy was satisfactory, suggesting sufficient awareness.[13] More efforts, including health education programs, should improve public awareness regarding this disorder, achieve favorable outcomes, and avoid future complications. Most participants correctly identified the symptoms of Bell's palsy, such as the inability to eat or smile (56.9%) and facial weakness (82.3%). This understanding can facilitate early detection and management of the condition.[2] Most participants correctly identified that Bell's palsy is treatable (83.9%), and most believed that physiotherapy is the primary treatment (84.5%); this aligns with current medical understanding and treatment guidelines, which recommend corticosteroid therapy with physiotherapy as a supportive measure.[14,15]

However, demographic factors revealed disparities in awareness. Younger participants exhibited lower awareness levels, suggesting that targeted educational interventions are needed. Past studies revealed that 24.9% of 20-30-year-olds had better knowledge and awareness than those over 30.3 Studies showed that women are more conscious of Bell's palsy than males[3,16]; our study did not find an association between gender and awareness level. The primary sources of information about Bell's palsy were non-professional, namely, family (24.6%) and friends (20.9%), which may contribute to the observed gaps in understanding. Previous research indicates that the source of health information can significantly influence the

accuracy and completeness of the information received.[17,1S]

Study limitations

First, the study's cross-sectional design only provides a snapshot of the participant's knowledge and awareness of Bell's palsy at a particular point in time and thus cannot assess changes in awareness over time. Second, the study recruited a convenience sample from the Jazan region of Saudi Arabia, which may not represent the entire Saudi population or other international contexts. Third, the reliance on self-reporting introduces potential response bias, as participants may not accurately remember or honestly report their knowledge and awareness of Bell's palsy. Further, the relatively small number of participants diagnosed with facial palsy might limit the generalizability of the findings related to this group. Last, the survey was conducted online, which may have excluded individuals without internet access or those not technologically savvy, potentially skewing results towards a more educated and younger demographic. Future studies could benefit from a larger, more diverse sample size, a longitudinal design, and measures to reduce response bias.

Conclusions

The study revealed moderate knowledge and awareness regarding Bell's palsy among the general population in Saudi Arabia's Jazan region. While most participants recognized the symptoms, such as the inability to eat or smile, weakness on one side of the face, and the treatment of Bell's palsy generally and physiotherapy specifically, their understanding of its idiopathic nature and the affected nerve was less prevalent. Furthermore, the study highlighted that most of the information about Bell's palsy was obtained from family and friends, suggesting the important role of social networks in health information dissemination. Significantly, demographic factors such as age influenced the level of awareness. This indicates the need for targeted educational interventions, particularly among younger people, to enhance the understanding and awareness of this condition, ultimately leading to timelier diagnosis and treatment. Lastly, while considerable awareness about Bell's palsy and its symptoms exists in the Jazan region of Saudi Arabia, a clear gap exists in understanding its idiopathic nature and the demographics most affected. This highlights the necessity for public health initiatives and education programs to enhance awareness and understanding of Bell's palsy.

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Conflict of interest

The authors have no conflicts of interest

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