

# The Public's Awareness, Knowledge, Attitude, and Practice Regarding Aphasia in Saudi Arabia

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## Abstract

Stroke is a leading cause of aphasia. Global studies have shown that there is a lack of awareness and understanding of aphasia among the public. This can impact the public's attitudes and practices toward aphasia, consequently affecting services and social support. There is currently limited data on the public's awareness, knowledge, attitudes, and practice of aphasia in Saudi Arabia. This study aims to investigate the public's awareness, knowledge, attitude, and practice of aphasia in Saudi Arabia. This is a cross-sectional study that used an online questionnaire written in modern standard Arabic. The questionnaire was distributed on social media platforms in Saudi Arabia in July 2023 to 390 participants. The collected data was statistically analyzed. It was found that 60.7% of the participants had never heard of aphasia. Age, occupation, and city of residence influenced awareness, while age, occupation, gender, and employment status played a significant role in knowledge. This study revealed a correlation between knowledge of aphasia and communication, speech, and language. Individuals aware of aphasia highlighted the significance of social support for people with aphasia, and the importance of speech and language pathologists (SLPs) and a multidisciplinary team. It is essential to increase public awareness about aphasia in Saudi Arabia. Awareness efforts should focus on fundamental concepts of communication and aphasia, social involvement, and the crucial role of SLPs in providing services.

## Keywords

Aphasia, Awareness, Knowledge, Attitude, Practice, Saudi Arabia

## 1. Background

Stroke is the leading cause of mortality and disability worldwide. Feigin *et al.* [1]

reported that the number of stroke survivors was 12.6 million in Europe, 15.5 million in the Americas, 14.8 million in Africa, and 58.1 million in Asia in 2019. Furthermore, the incidence of stroke among people aged under 70 years has increased.

Annually, more than 795,000 individuals have strokes in the USA, while around 100,000 cases occur in the UK [2] [3]. Alqahtani *et al.* [4] conducted a systematic review on stroke incidence in Saudi Arabia. Alqahtani *et al.* [4] concluded that 29 stroke cases per 100,000 individuals occur annually in Saudi Arabia. Available data shows that Saudi Arabia has a lower incidence of stroke than Western countries. This disparity may be attributable to the more significant proportion of younger age groups in Saudi Arabia [5]-[8]. Despite studies indicating lower incidence and prevalence rates of strokes in Saudi Arabia compared to other countries, it is important to conduct further studies, given the scarcity of stroke epidemiology research in Saudi Arabia.

Stroke is the most prevalent cause of aphasia [9]. Aphasia is a language disorder caused by brain injury that affects various language components and forms [10].

In the USA, around 2 million individuals live with aphasia, while in the UK, approximately 350,000 individuals are affected [11] [12]. In a study conducted in Saudi Arabia, Alarjan [13] found that 46% of stroke patients experienced language dysfunction, suggesting a significant burden of aphasia similar to what was found in Western countries [13]. In Saudi Arabia, communication disorders are a significant concern, with an increasing prevalence and demand for related services among the population. A national disability survey conducted in 2017 estimated that communication and comprehension difficulties affected approximately 10.25% of the Saudi population with disabilities [14].

### 1.1. Global Awareness of Aphasia

Numerous studies worldwide have examined public awareness of aphasia [15]-[26]. These studies encompass diverse regions, including the United Kingdom, the United States of America, Australia, Honolulu (Chinese population), South India, New Zealand, Canada, Argentina, Slovenia, Croatia, Greece, Norway, Montenegro, Singapore, and Sweden. Data were collected via telephonic or in-person interviews with the general public, with sample sizes varying from 85 to 2000 individuals. Across most studies, aphasia awareness was defined as having heard the term “aphasia” before, while “knowledge” referred to the ability to provide general information about the disorder. The results revealed low levels of public awareness of aphasia, ranging from 3% - 66%, which was generally higher than the level of knowledge of aphasia, ranging from 1% - 17%. Age, gender, socioeconomic status, and occupation influenced awareness in these studies. In most of these studies, awareness of other conditions, such as Parkinson’s disease, dementia, epilepsy, and dyslexia, was greater than the awareness of aphasia. The literature indicates that the data are limited to Asian and Arabic-speaking countries. A study investigated awareness levels of aphasia in Kuwait in 2013 and 2017 with 626 par-

ticipants to facilitate data comparisons [27]. The results were consistent with those of other countries, demonstrating that Kuwait's public awareness of aphasia was low. Alyahya [28] conducted a study to understand the public awareness and knowledge of aphasia in Saudi Arabia. Her study included 1631 participants, 20.5% of whom had aphasia. Within this group, only 4.8% of the participants accurately understood the characteristics and causes of aphasia. Alyahya [28] found that age, educational level, and socioeconomic status significantly affected awareness; however, no demographic factors significantly affected knowledge. Low public awareness of aphasia hinders support for those affected, leading to consequences such as limited resources and services, lack of financial support, and insufficient public acceptance [15] [29] [30].

## **1.2. Services for Communication Disorders in Saudi Arabia**

Services and rehabilitation for patients with communication disorders in Saudi Arabia are primarily provided by speech and language pathologists (SLPs). In hospitals, SLPs work with speech and language disorders that arise from different etiologies, including stroke, traumatic brain injury, syndromes, and neurodegenerative diseases. According to Alakeel, [31] a total of 879 SLPs were licensed by the SCFHS in Saudi Arabia in 2022. The number of SLPs working in health centers and schools was lower than that of SLPs working in major hospitals. This could be attributed to the hospitals' geographical location, usually in large cities. Khoja and Sheeshah [32] confirmed the unequal distribution of SLPs in Saudi Arabia, noting that many SLPs work in large cities, seeking professional and cultural advantages, thereby leaving rural areas underserved. Although many SLPs are licensed and work in major hospitals, the Saudi Ministry of Health statistics reveal a low total, with only 218 healthcare professionals working in hearing and speech therapy in the Ministry of Health hospitals (207 Saudis and 11 non-Saudis) [33]. This could be attributed to the limited vacancies, a small number of universities providing undergraduate and postgraduate programs in speech and language pathology, and the relatively new nature of the profession. Alanazi [34] reported that only 30% of 37 SLPs working in Saudi Arabia focused on aphasia, highlighting the limited services and the need to expand these services to encompass a broader spectrum of acquired language disorders.

It is essential to understand how the public perceives communication disorders as this can impact the quality of services and social support. While there has been an increase in research on awareness and knowledge of aphasia worldwide, there is limited information available on this topic in Saudi Arabia. With the rising number of cases and limited research on public awareness, it is necessary to identify gaps and find ways to bridge them. This study aims to investigate the public's awareness and knowledge of aphasia in Saudi Arabia, including their practices and attitudes. In addition, the study will examine a novel aspect of looking into the correlation between knowledge of general communication, speech, and language concepts and knowledge of aphasia.

## 2. Methods

This cross-sectional study aimed to determine the level of aphasia awareness among the Saudi population. It sought to comprehend the public's knowledge, attitude, and practice regarding aphasia and identify potential factors. The Faculty of Medicine's (Unit of Biomedical Ethics) research ethics committee at King AbdulAziz University granted ethical approval to conduct this study (Reference No 335-23).

### 2.1. Survey Instrument

Using the snowballing technique, a Google forms-based online questionnaire was developed and distributed on social media platforms (WhatsApp and X) in Saudi Arabia in July 2023. The online questionnaire was written in modern standard Arabic to accommodate a wider range of participants. Participants' answers were kept confidential. Their responses were anonymous, and only the authors had access to the data. To fulfill the study's aim, the online questionnaire included questions about aphasia awareness, knowledge, attitude, and practice in Saudi Arabia.

The questionnaire commenced with an introduction outlining the study's purpose and obtaining consent from participants. The subsequent section comprised demographic inquiries, followed by general questions regarding communication language and speech, and concluded with a question about the awareness of aphasia. Participants who answered "yes" or "not sure" were directed to questions about knowledge (meaning and cause), attitude (hypothetical scenarios), and practice (receiving services), while those who answered "no" were directed to conclude the study. This methodology is similar to previous studies on aphasia awareness [15] [19] [35] [36]. Seven judges, including five members of the public and two PhD holders in Communication Disorders, reviewed the questionnaire. After the review, minor changes were made to improve clarity and relevance.

### 2.2. Sample

Based on the latest census data from the General Authority for Statistics in 2022, [37] the population of Saudi Arabia is 32,175,224. To represent this population with a 95% confidence interval and 5% margin of error, an estimated sample size of 385 was calculated using the Raosoft Sample Size Calculator (<http://www.raosoft.com/samplesize.html>). Participants 18 years or older residing in any region of Saudi Arabia were eligible to participate in the study.

### 2.3. Data Analysis

The mean and standard deviation (SD) were obtained for continuous outcome variables, while categorical variables were summarized using percentages. Normality of continuous outcomes was assessed using the Shapiro-Wilk test; for non-normally distributed variables, the Kruskal-Wallis test was applied. Group differences in categorical outcomes were evaluated using the Chi-squared ( $\chi^2$ ) test. Correlation analyses used Spearman's correlation coefficient and corresponding p-

values to identify relationships between continuous variables. A significance threshold of  $p < 0.05$  was adopted. All statistical analyses were executed using various R packages within the Jamovi software (V. 2.4.5).

### 3. Results

#### 3.1. Participant Characteristics

The total number of participants was 394; however, four were excluded for not indicating their city or living outside of Saudi Arabia, leaving a total of 390. **Table 1**

**Table 1.** Participant characteristics.

<b>Age (in years)</b>	
18-24	54 (13.8%)
25-34	127 (32.6%)
25-54	46 (11.8%)
35-44	108 (27.7%)
55-64	42 (10.8%)
65-74	12 (3.1%)
75 or more	1 (0.3%)
<b>Gender</b>	
Female	277 (71%)
Male	113 (29%)
<b>Educational level</b>	
Bachelor's degree	223 (57.2%)
Diploma	25 (6.4%)
High school	53 (13.6%)
Postgraduate education	85 (21.8%)
Middle school	4 (1%)
<b>Current employment status</b>	
No	147 (37.7%)
Retired	40 (10.3%)
Yes	203 (52.1%)
<b>Monthly income</b>	
Average	173 (44.4%)
High	66 (16.9%)
Low	151 (38.7%)
<b>Nationality</b>	
Saudi	369 (94.6%)
Non-Saudi	21 (5.4%)

provides an overview of the participants, including their demographics, knowledge levels, and attitudes toward aphasia. 49% of the participants were from the Western region, possibly because the researchers were based in Jeddah. The middle region had the second-highest number of participants (27.9%), followed by the eastern (12.8%), southern (7.2%), and northern regions (3.1%).

### 3.2. Awareness of Aphasia

Only 113 (28.9%) participants reported having heard of aphasia before, with the majority (237 participants) (60.7%) having never heard of it and 40 participants (10.2%) being unsure. The participants were asked to identify where they had heard of aphasia.

The top four sources were schools or universities (33.9%); social media platforms such as YouTube, WhatsApp, Instagram, TikTok, and Snapchat (30%); family members, friends, relatives, or neighbors (22.8%); and healthcare professionals such as doctors, therapists, and nurses (20.9%).

According to **Table 2**, participants' occupation, city, and age significantly influenced their awareness of aphasia ( $p < 0.001$ ). However, gender, educational level, employment status, and monthly income had no statistical significance on awareness of aphasia. In addition, awareness significantly affected participants' knowledge of the meaning and causes of aphasia, with  $p$ -values  $< 0.001$  for each.

**Table 2.** Influence of demographic factors on aphasia awareness and knowledge.

	Age p value	Gender p value	Educational level p value	Employment status p value	Monthly income p value	City p value	Occupation p value
<b>Awareness of Aphasia Total (n = 390)</b>	$<0.001^2$	$0.07^2$	$0.35^2$	$0.70^2$	$0.70^2$	$<0.001$	$<0.001$
No							
Yes							
<b>Knowledge about Aphasia meaning Total (n = 153)</b>	$<0.001^1$	$0.006^1$	$0.32^1$	$0.048^1$	$0.38^1$	$0.20$	$<0.001$
Mean (SD)							
<b>Knowledge about Aphasia cause Total (n = 153)</b>	$<0.001^1$	$0.09^1$	$0.10^1$	$0.04^1$	$0.76^1$	$0.08$	$<0.001$
Mean (SD)							

<sup>1</sup>Kruskal-Wallis Test (Non-parametric ANOVA). <sup>2</sup>Pearson's Chi-squared Test.

### 3.3. Knowledge about Aphasia (Meaning and Cause)

Among the participants who had either heard about aphasia before or were unsure ( $n = 153$ ), the top five answers for the definition of aphasia were speech problems (articulation) (34.6%), receptive and expressive language problems (29.4%), psychological problems (9.15%), fluency problems (9.15%), and intellectual problems (8.5%) (**Figure 1**). Regarding the cause of aphasia, 54.2% of the participants be-

lieved that brain damage, such as a stroke or traumatic brain injury, was the cause, while 18.95% believed that it was due to psychological or emotional trauma. The rest were unsure or chose hereditary or genetic disorders or intellectual disabilities as the cause (Figure 2).

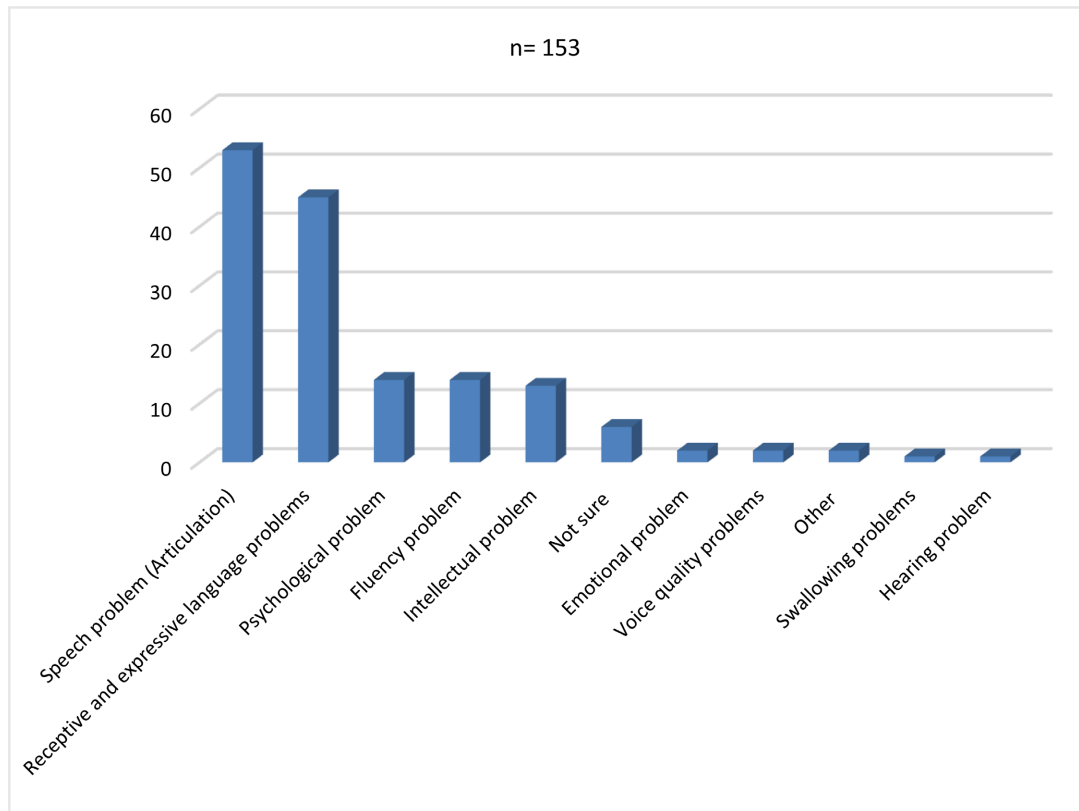


Figure 1. Knowledge about aphasia meaning.

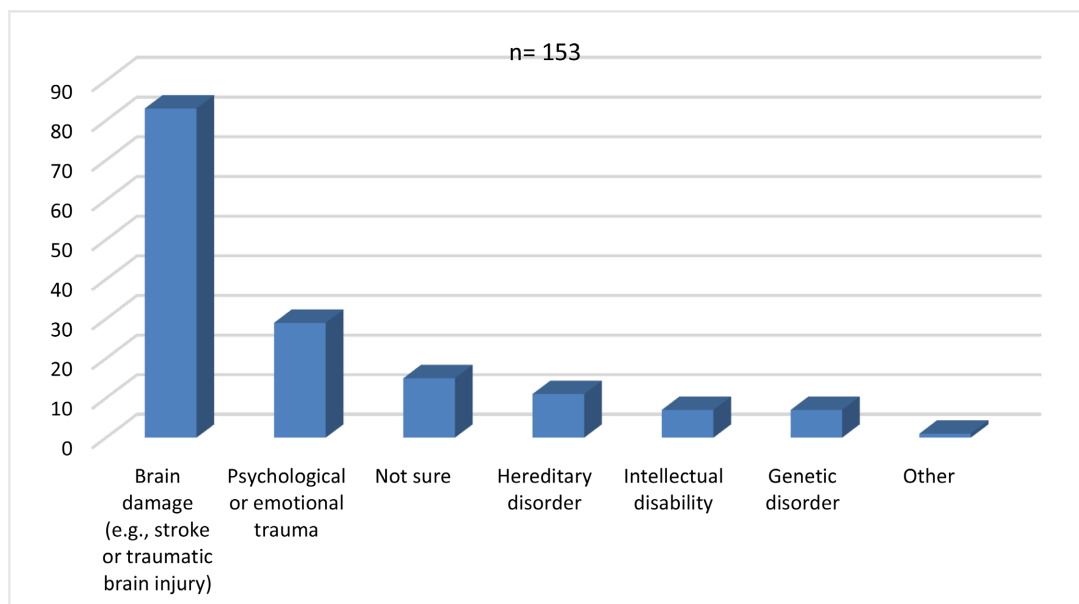


Figure 2. Knowledge about aphasia cause.

**Table 2** illustrates how participants' occupation, city, age, gender, education level, employment status, and monthly income impact their knowledge of the meaning and cause of aphasia. Age ( $p < 0.001$ ), gender ( $p = 0.006$ ), occupation ( $p < 0.001$ ), and employment status ( $p = 0.048$ ) have a significant effect on participants' knowledge about the meaning of aphasia. However, educational level, monthly income, and city did not show any statistical significance. Regarding the knowledge about the cause of aphasia, age ( $p < 0.001$ ), employment status ( $p = 0.04$ ), and occupation ( $p < 0.001$ ) had a significant influence, while the other factors did not show any statistical significance.

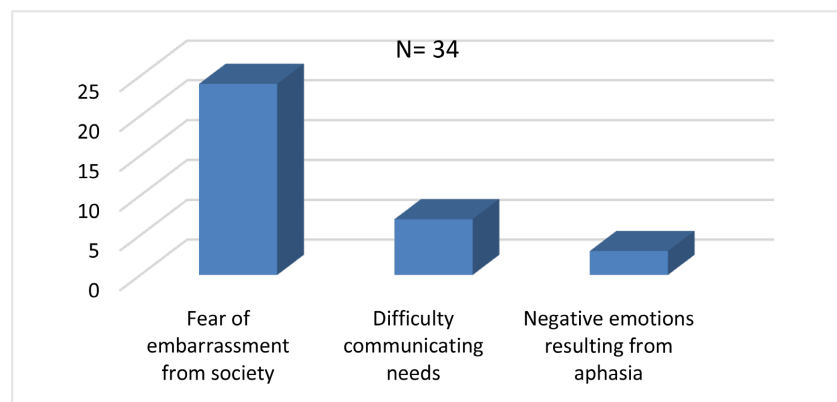
When examining the correlation between knowledge about communication, speech, language, and aphasia, statistical analysis revealed a significant correlation. Specifically, the knowledge about the meaning and cause of aphasia and speech and language had the strongest correlations, with Spearman's rho coefficients of 0.57 and 0.53, respectively, and  $p < 0.001$  for each. The weakest correlation was found between knowledge about communication and the meaning of aphasia, with a Spearman's rho coefficient of 0.12 and  $p = 0.02$ .

### 3.4. Attitudes toward Aphasia

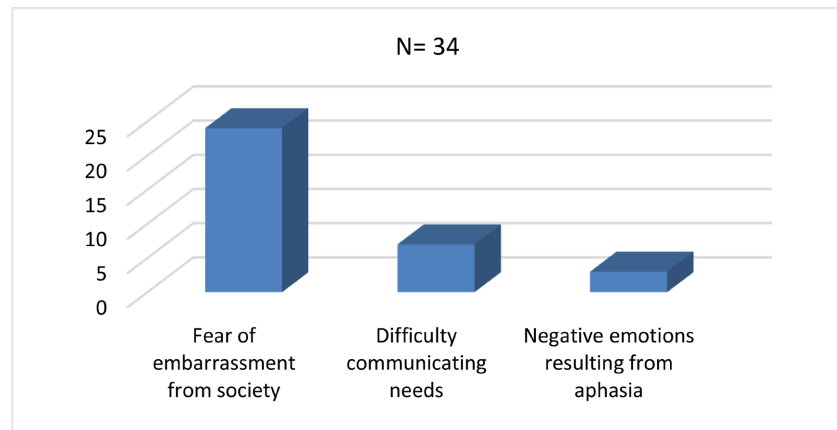
When participants were asked how they would feel if they had a close relative with aphasia, "Feeling motivated to find help" was the most chosen answer ( $n = 88$ ). Only 13 out of 153 participants chose "not sure." Although other answers included feelings of sadness, embarrassment, fear, and drainage, these feelings were not chosen alone; they included feelings such as feeling overwhelmed, overprotective, motivated to help, and confused.

To further assess attitudes, participants were asked whether it is better for people with aphasia to avoid social gatherings to minimize negative emotions that may arise from socializing. A total of 48% of the participants answered "No," 39% answered "Yes," and the rest were not sure. **Figure 3** and **Figure 4** outline participants' justifications.

Another area of investigation was assessing whether to tell distant relatives when a close family member was diagnosed with aphasia. A total of 66% of the



**Figure 3.** Reasons for avoiding social gatherings.



**Figure 4.** Reasons for joining social gatherings.

participants (n = 102) chose to inform their distant family members. The rest of the participants either chose “not to inform their distant family members so that they do not feel sorry for him” or “not sure” (n = 26, n = 25, respectively).

### 3.5. Aphasia Practice

Among the 153 participants, 66% believed that receiving speech and language therapy was the better treatment approach for aphasia, while 2% believed that alternative medicine was a better treatment approach. Interestingly, 18% of the participants believed that combining speech and language therapy and alternative medicine was the better treatment approach for aphasia.

When assessing participants’ views on where to refer people with aphasia, 33% chose to refer to only one professional, while 67% suggested referring to a multi-disciplinary team of 2 - 6 professionals, including SLPs. Of the 33% who referred to only one professional, “speech and language pathologist” was the most common choice for 39 participants.

Participants were asked about their experiences of accessing services for close relatives with aphasia. While 68% of the participants had never experienced this, 25% had received services from various clinical settings. Governmental inpatient and outpatient hospitals and clinics were the most frequently chosen service providers. Despite the need for services, 6% of the participants were unable to access them because of financial or time constraints.

Speech therapy was the most frequently chosen to improve the patient’s condition, with 126 participants selecting it. Eight participants chose speech therapy alone, while 118 chose it along with other factors, such as public awareness, family support, more research, better healthcare services, and support groups.

## 4. Discussion

In this study, we aimed to examine how much the public in Saudi Arabia knows about aphasia and their attitudes and practices toward it. In addition, we aimed to understand if there is a relationship between the knowledge of communication,

speech, and language and the knowledge of aphasia. The results were concerning, with 60.7% of the participants never having heard of aphasia. Age and occupation were major factors influencing awareness and knowledge of aphasia, while cities of residence played a role in awareness. Gender and employment status were significant factors in the knowledge of the meaning and cause of aphasia. Our study revealed a significant correlation between knowledge of the meaning and cause of aphasia and knowledge of communication, speech, and language, suggesting that these areas are interconnected. This study found that individuals aware of the term “aphasia” emphasized the significance of social support and involvement with patients. Furthermore, they emphasized the importance of SLPs and multi-disciplinary teams in providing services to individuals with aphasia.

#### 4.1. Awareness of Aphasia

According to the current data, 28.9% of the participants reported awareness of aphasia, which aligns with the existing literature (20.5%) [28]. Other countries, including the United Kingdom, Canada, Argentina, Slovenia, Honolulu, and Western Ireland, reported awareness rates ranging from 16% - 34%, as documented in various studies [16] [19] [20] [24] [36]. Our results differed from those of Aljenaie and Simmons-Mackie, [27] which reported an awareness rate of 9.1% in Kuwait in 2017. Although the awareness of aphasia is considered low in both countries, the variation in awareness rates could be attributed to differences in sample size, data collection methods, and survey techniques. Unlike in other studies, our participants reported that schools and universities were the primary sources of information on aphasia. This may be because the sample population included healthcare students and professionals, highlighting the importance of aphasia exposure in educational settings. Social media was the second most popular source of information, consistent with other studies [15] [20] [23] and served as the primary source of information on stroke in Saudi Arabia [38]. Social media is crucial for sharing information and educating the public, as it has been shown to improve knowledge of stroke in Saudi Arabia [39].

The analysis of demographic factors in Saudi Arabia revealed that awareness levels are significantly affected by age, occupation, and city. This is consistent with studies conducted in Norway, Greece, Croatia, and Serbia, which found that age significantly impacts awareness of aphasia, with younger respondents more likely to answer “yes” [20] [23]. However, some studies have not found age to be a significant factor in aphasia awareness [36]. A contradiction was found between our study and Alyahya’s study [28]. This study found that younger people (18 - 34 years) were more aware of aphasia, whereas Alyahya [28] found that older people had more awareness. This variation may be due to sample characteristics and possibly because some of the participants in our study were currently studying or working in the healthcare field and learning about aphasia. Occupation was a significant factor in aphasia awareness, which is consistent with other studies [15] [36]. We found that the city of residence significantly affected awareness of apha-

sia, with 48.6% of the participants who had heard about it living in the western region and 30.9% living in the middle region. This contradicts Alyahya's study, [28] in which the city of residence was not a significant factor. This was possible because a high percentage of the individuals involved in our study resided in the western region. Jeddah and the capital city of Riyadh are situated in the western and middle regions, respectively, and contain prominent universities and several medical centers and hospitals that provide rehabilitation education and healthcare services, which may impact this tendency. Interestingly, employment status, educational level, and monthly income did not show significant differences among the participants regarding aphasia awareness.

Cultural factors unique to Saudi society may also contribute to overall low awareness. For example, societal stigma and social acceptance may discourage open discussion or proactive learning about disorders like aphasia. Additionally, the reliance on alternative medicine in Saudi culture may lead individuals to prioritize traditional remedies over formal speech-language therapy, particularly in the early stages of illness. These cultural attitudes may not only reduce early detection and intervention efforts but also reinforce misconceptions about aphasia, further limiting public knowledge and supportive practices.

#### **4.2. Knowledge about Aphasia (Meaning and Cause)**

The current study indicates that 29.4% of individuals who had heard of aphasia or were unsure of its meaning believed it to be a language problem, and 54.2% accurately identified it because of brain damage. This is a slightly higher level of knowledge than previous studies, [15] [16] [19] [20] [23] [36] possibly due to differences in sample size, research methods, or the fact that people who reported hearing about aphasia knew its meaning and had personal experience with their families.

Interestingly, 34.6% of participants in our study associated aphasia with speech problems (articulation). This is consistent with Alyahya's study [28]. In Saudi Arabia, the common Arabic term for aphasia, الحيسة الكلامية, may contribute to the confusion about the disorder's nature and lead people to think that it is a speech problem. Our research indicates a novel association between knowledge of communication, speech, and language and the meaning of aphasia. This emphasizes the need to distinguish speech from language when educating people about stroke and aphasia. It is crucial to increase awareness that other speech disorders may occur alongside aphasia as a result of brain damage, even though aphasia is specifically a language problem.

The data analysis of knowledge of the meaning and cause of aphasia revealed that age, gender, occupation, and employment status significantly impacted knowledge about aphasia, while educational level and monthly income did not. This contradicts Alyahya's study [28] as the factors reported in her study did not significantly affect knowledge about aphasia in Saudi Arabia. According to McMenamain *et al.* [36] and Code *et al.*, [20] gender and occupation are significant factors that influence knowledge about aphasia. In contrast, Aljenaie and Sim-

mons-Mackie [27] and Simmons-Mackie *et al.* [15] reported that these demographic factors have no significant influence on their sample. In addition, our findings align with those of Code *et al.* [20] who found that age is a significant factor, but contradict McMenamin *et al.* [36] and Aljenaie and Simmons-Mackie [27] who found that age does not significantly impact knowledge of aphasia. These conflicting results may be due to cultural factors, sample size and characteristics, and differences in research design.

### 4.3. Attitudes toward Aphasia

There is a lack of published research on attitudes and practices toward aphasia in the general population, particularly in the Saudi population. However, results indicate that most participants felt motivated to help their relatives when they were diagnosed with aphasia. In Saudi Arabia's collectivist and family-centric culture, the motivation to seek help might arise from a profound sense of familial duty and religious responsibility. Caring for ill or disabled relatives is regarded as both a moral obligation and a source of spiritual fulfillment, which may explain participants' willingness to support affected family members despite experiencing emotional distress. Negative emotions such as feeling sad, overwhelmed, and embarrassed were reported, which is consistent with the literature on stroke, where family members often experience negative emotions such as grief, distress, and uncertainty [40] [41].

Most participants preferred that people with aphasia should be involved in social gatherings. This supports a previous study that found that social engagement can positively impact the quality of life of people with aphasia [42]. Saudi society is family-oriented and highly interactive, which may support the study's findings regarding the positive effects of social involvement for people with aphasia. However, some participants suggested that people with aphasia should refrain from participating in social activities because of fear of embarrassment, challenges in effectively communicating their needs, and negative emotions arising from the nature of the disorder. A lack of public awareness of aphasia in Saudi Arabia may explain the fear of embarrassment, as 60.7% of the participants reported that they were unaware of the condition. The finding regarding communication difficulties is consistent with Wray and Clarke [43] who reported that individuals with stroke often cannot participate in social activities because of communication difficulties.

Several participants supported informing distant family members about the diagnosis. This could be attributed to the need for support and an excuse for not meeting family obligations. It was found that 26% of the participants who believed that people with aphasia should avoid social gatherings were the same participants who chose to inform their distant family members about the disorder. The results suggest that participants may think it is important to share the diagnosis with their relatives while preferring that people with aphasia do not engage in social activities since there is a lack of awareness and knowledge about the condition. This reflects the tension between social inclusion and the fear of stigma that is common

in collectivist cultures, where maintaining the family's social image may influence decisions related to disclosure and participation.

#### **4.4. Aphasia Practice**

Our study aimed to gain insight into aphasia practices, including the best treatment approaches for aphasia, professional referral protocols for aphasia cases, accessibility to health services, and factors contributing to the improvement of people with aphasia. Participants in the study had a positive view of speech therapy as the most effective treatment for aphasia. However, some also believed that combining speech therapy with alternative medicine was influenced by Saudi culture's preference for alternative medicine, especially in the early stages of the disease. Despite advancements in healthcare within Saudi Arabia, residents often resort to herbal medicines for certain ailments [44]. It is noteworthy that participants who had a family member with aphasia tended to choose speech therapy, suggesting that their knowledge of the disorder influenced their treatment decisions.

Several participants chose to refer people with aphasia to SLPs, including psychologists, neurologists, and general physicians being commonly mentioned. This highlights the importance of a multidisciplinary team approach to treating such conditions. However, the study highlighted significant barriers to accessing services. While 25% of participants reported accessing services from various clinical settings, 6% were unable to access services due to financial or time constraints. These barriers reflect broader systemic limitations within the healthcare delivery framework, where the availability and affordability of specialized services may not be equally distributed.

The study's results highlighted "speech therapy" as the most prevalent factor in improving aphasia. This finding may stem from the participants' familiarity with various treatment approaches for aphasia. Family support was the second-most popular factor. This finding is consistent with existing literature, which indicates that social support, including support from family and friends, positively enhances the quality of life and social networks of people with aphasia [45]-[47]. Although aphasia support group services are not widely applied in Saudi Arabia, some participants mentioned their existence. While no national studies have evaluated their effectiveness, prior international research confirms the benefits of support groups and community engagement in aphasia recovery [48] [49].

### **5. Conclusions**

There is a need to raise public awareness about aphasia in Saudi Arabia and to incorporate that into stroke awareness campaigns. The awareness efforts should focus on fundamental speech and language concepts and basic knowledge about aphasia. Promoting the usage of both Arabic and English terms is suggested to create better awareness. Awareness should target ways to facilitate social involvement and communication of people with aphasia. Furthermore, raising awareness about the vital role of SLPs in a multidisciplinary team is essential, which can lead

to better services. Due to the limited number of SLPs in the Ministry of Health and the small number of SLPs working with aphasia in Saudi Arabia, raising awareness can lead to an increase in the number of SLPs employed in both government and private sectors. This increase is necessary to meet the growing demand for speech therapy services. Awareness efforts should also be sensitive to cultural factors unique to Saudi society. For example, cultural stigma around disability and reliance on traditional and alternative medicine. Addressing these areas requires not only education but also cultural reframing to foster a more accepting and informed society.

The study provides valuable information about the Saudi population, which can be useful for future research in this area and other relevant fields. It identifies areas where awareness is lacking and makes essential recommendations that can benefit professionals and stakeholders.

The study's limitations include that the sample was predominantly female and had more participants from the western and middle regions. In addition, the study's cross-sectional design captured the current level of awareness and did not account for changes over time. Using the snowball sampling technique to disseminate the survey via social media platforms might have introduced a limitation to this study. While this method allowed for more extensive and effective outreach, it may have led to self-selection bias. Consequently, the sample could be underrepresented in certain demographics, including those living in rural areas or those with limited internet access. Future research should consider implementing a broader range of sampling techniques, such as offline and community-based outreach.

Future research can investigate methods to raise public awareness and determine the impact of awareness campaigns on different aspects, such as acceptance, adaptations, or guidelines. Further research can be conducted to find the best method to facilitate communication for people with aphasia to be more involved socially. Research can be conducted to thoroughly examine aphasia services to understand and improve the current services, including an in-depth exploration of the qualifications of SLPs and clinical settings that offer aphasia services, and the accessibility and frequency of these services.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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