Introduction

Stuttering exists in all cultures and societies worldwide [1]. To date, very little research has been carried out on the knowledge and awareness of stuttering in an Arab population.

Parents’ attitudes toward stuttering play a critical role in helping the child develop healthy communication attitudes. Young children’s self-esteem is highly dependent on the approval and acceptance of their parents and others in their environment [2].

Several studies have described the attitudes of members of a single group toward stuttering, for example teachers [3] and the general public [4]. The attitudes on stuttering have been assessed using different procedures including telephone interviews [5], semantic differential techniques [6], and questionnaires [4].

The attitudes and beliefs that parents have on stuttering may generally reinforce or hinder the applicability and effectiveness of treatment [7]. Family relationships can have a positive impact, providing support and positive guidance in assisting the individual who stutters to cope with their stuttering. Positive parental attitude toward their children minimizes the chance that they will develop a negative self-image, shame, or embarrassment, which affects many older children, adolescents, and adults who stutter [8].

It is possible that culturally specific, idiosyncratic, or certain attitudes, knowledge, and beliefs toward disabilities in general and towards speech impairments, perhaps, may exist. Negative opinions of stuttering and people who stutter (PWS) appear to exist cross-culturally [9]. Public and perhaps parental ignorance are major contributing factors to the mental and emotional complexities of stuttering. Therefore, targeting and correcting the stereotypical misconceptions present among parents is crucial for clinicians to provide successful therapy to PWS. These stereotypes are widespread in the general public irrespective of age, level of education, culture, geographic location, and profession [10].

The aim of this study is to collect information on the attitude and knowledge of parents on stuttering in order to gain a better understanding of their level of awareness about the nature of the disorder.
Patients and methods

Patients
This study included 100 parents of preschool-aged and school-aged stutterers. They were attendants to the Phoniatric Unit at Kasr Al Aini Hospital; of these, 56 (56%) were women and 44 (44%) were men, age range 26.8–44.3 years, mean 34.7 years. The study was carried out from October 2012 to July 2013. The education level of the parents was assessed using a scale to measure the socioeconomic status [11]. Children with a previous or present history of other communication problems or developmental disability and those receiving speech therapy sessions were excluded from the study.

Designing the questionnaire
A questionnaire involving four components that gathered information about stuttering epidemiology, symptomatology, treatment, and prognosis was designed by the author. Each component included several statements. The parents were instructed to answer each statement by choosing one of three responses: ‘yes’, ‘no’, or ‘unsure’ (see Appendix). The questionnaire took between 20 and 50 min to complete. Some statements were constructed from knowledge and attitude tests on stuttering [4,12]. A written consent was obtained from the included parents before the study. The results of the statements were compared according to differences between sex and education level. A pilot study including 30 parents was carried out before the study in order to modify the questions according to the parental responses.

Statistical analysis
Precoded data were analyzed statistically using the Statistical Package for the Social Sciences Software program, version 21 (Chicago, USA). Data were summarized as frequency and percentage for qualitative variables. Comparison between groups was performed using the χ2-test or Fisher’s exact test. A P value of less than 0.05 was considered statistically significant and a P value of less than 0.01 was considered highly significant.

Results
This study included 100 parents; 44% were men and 56% were women. The distribution of the studied parents according to the age group was as follows: 67% were younger than 35 years of age and 33% were older than 35 years of age. In terms of the education level, it was found that 41% of the included sample was not educated and 59% was educated (Table 1). The results of the parental opinions on the statements in the questionnaire were compared according to differences between sex and educational level and the following results were found.

A highly significant association was found between sex and education level and parental knowledge of the etiology of stuttering (Table 2) and parental attitude toward the stutterer (Table 3). A highly significant association was found between parental education and their knowledge of treatment (Table 4) and prognosis of stuttering (Table 5).

Discussion
The present study showed interesting data on parental awareness of stuttering. Most parents were familiar with stuttering, but their general knowledge of the disorder was limited. Negative beliefs and attitudes toward stuttering and PWS were also held by some parents. A significant association was found between the education level and to a lesser extent sex and parental knowledge and attitudes toward stuttering.

The present data indicate that most of the parents knew little or were confused about the prevalence of stuttering, its causes, and treatment and prognosis. Women attributed stuttering to psychological or environmental factors because of their over-reaction to mistakes in children's speech, an indication of an old Johnsonian theory [1]. A low percentage (8%) of parents believed that stuttering is genetic, in line with the recent literature [13]. Others (9%) reported that the problem may be because of an abnormality in the oral cavity and they considered surgical procedures for treatment. It was found that main reason that motivated some parents to seek advice was approaching school age or comparing the child with other siblings or family members. These findings were in agreement with those of other studies [14,15].

Reviewing the parental opinion on the stutterer’s personality, a highly significant association was found between sex and parental attitude while dealing with the

| Table 1 Frequency distribution of the respondents in terms of age, sex, and educational level |
|---------------------------------|-------------------|
| Age (years)                     | n (%)             |
| <35                             | 33 (33.0)         |
| ≥35                             | 67 (67.0)         |
| Sex                             |                   |
| Male                            | 44 (44.0)         |
| Female                          | 56 (56.0)         |
| Educational level               |                   |
| Not educated                    | 41 (41.0)         |
| Educated                        | 59 (59.0)         |
Parental attitudes and knowledge of stuttering

It seemed that mothers were more upset with the disorder; the majority (98%) viewed their children as being tense, shy, and withdrawn and more likely to be rejected by their peers. Others (21%) reported that they felt anxious, frustrated, and guilty while dealing with their children. It is understandable that parents

| Table 2 Comparison of knowledge of the etiology and epidemiological features of stuttering among the studied parents in terms of their sex or educational level |
| --- |
| Do you know that stuttering |
| Occurs more in female |
| Male (n = 44) | 16 (36.4) | 26 (46.4) | 0.3 |
| Female (n = 56) | 27 (65.9) | 15 (25.4) | <0.001 |
| P value | 42 (42.0) |
| Occurs more in male |
| Male (n = 44) | 15 (34.1) | 12 (21.4) | NS |
| Female (n = 56) | 4 (9.8) | 23 (39.0) | HS |
| P value | 27 (27.0) |
| Equal in both sex |
| Male (n = 44) | 13 (29.5) | 18 (32.1) |
| Female (n = 56) | 10 (22.4) | 21 (35.6) | 31 (31.0) |
| Stuttering occurs |
| Before age of 3 years |
| Male (n = 44) | 10 (22.7) | 13 (23.2) | 0.5 |
| Female (n = 56) | 9 (20.0) | 14 (23.7) | 0.3 |
| P value | 23 (23.0) |
| At school age |
| Male (n = 44) | 25 (56.8) | 36 (64.3) | NS |
| Female (n = 56) | 28 (68.3) | 33 (55.9) | NS |
| P value | 61 (61.0) |
| Absent in adults |
| Male (n = 44) | 9 (20.5) | 7 (12.5) |
| Female (n = 56) | 4 (9.8) | 12 (20.3) | 16 (16.0) |
| Stuttering occurs more in |
| Left-handed person |
| Male (n = 44) | 9 (20.5) | 6 (10.7) | 0.4 |
| Female (n = 56) | 8 (19.5) | 7 (11.9) | 0.3 |
| P value | 15 (15.0) |
| Right-handed person |
| Male (n = 44) | 7 (15.9) | 11 (19.6) | NS |
| Female (n = 56) | 9 (20.0) | 9 (15.3) | NS |
| P value | 18 (18.0) |
| Same incidence |
| Male (n = 44) | 28 (63.6) | 39 (69.6) |
| Female (n = 56) | 24 (58.5) | 43 (72.9) | 67 (67.0) |
| P value | |
| Person who stutter is often described as being |
| Shy |
| Male (n = 44) | 16 (25.0) | 29 (51.8) | <0.001 |
| Female (n = 56) | 14 (34.1) | 26 (44.1) | 0.5 |
| P value | 40 (40.0) |
| Nervous |
| Male (n = 44) | 12 (22.7) | 21 (42.4) | HS |
| Female (n = 56) | 8 (19.5) | 23 (39.0) | NS |
| P value | 22 (22.0) |
| Normal person |
| Male (n = 44) | 2 (4.5) | 3 (5.4) | HS |
| Female (n = 56) | 8 (19.5) | 6 (10.2) | 14 (14.0) |
| P value | |
| Unsocial |
| Male (n = 44) | 9 (20.5) | 15 (26.8) |
| Female (n = 56) | 11 (26.8) | 13 (22.0) | 24 (24.0) |
| P value | |
| I believe that stuttering is caused by |
| Psychological factor |
| Male (n = 44) | 27 (61.4) | 19 (33.9) | 0.007 |
| Female (n = 56) | 19 (46.3) | 27 (45.8) | 0.002 |
| P value | 46 (46.0) |
| Chemical change in brain structure |
| Genetic inheritance |
| Male (n = 44) | 2 (4.5) | 5 (8.9) | NS |
| Female (n = 56) | 1 (2.4) | 7 (11.9) | 8 (8.0) |
| P value | |
| Environmental pressure |
| Male (n = 44) | 2 (4.5) | 20 (35.7) |
| Female (n = 56) | 4 (8.8) | 18 (30.5) | 22 (22.0) |
| P value | |
| Following prolonged fever |
| Male (n = 44) | 2 (4.5) | 20 (35.7) |
| Female (n = 56) | 9 (20.0) | 3 (5.1) | 12 (12.0) |
| P value | |
| School entry |
| Male (n = 44) | 3 (6.8) | 4 (7.1) |
| Female (n = 56) | 6 (14.8) | 1 (1.7) | 7 (7.0) |
| P value | |

Table 3 Comparison of the parental attitude toward the stutterer among the studied parents in terms of their sex or educational level

| If I were talking to a stutterer I would |
| --- |
| Repetition only |
| Male (n = 44) | 29 (65.9) | 30 (53.6) | 0.2 |
| Female (n = 56) | 26 (63.4) | 33 (55.9) | 0.5 |
| P value | 59 (59.0) |
| Associated body movements |
| Male (n = 44) | 15 (34.1) | 26 (46.4) | NS |
| Female (n = 56) | 15 (36.6) | 26 (44.1) | NS |
| P value | 41 (41.0) |
| If I were talking to a stutterer I would |
| Ask him to repeat again |
| Male (n = 44) | 13 (29.5) | 26 (46.4) | 0.006 |
| Female (n = 56) | 12 (29.3) | 27 (45.8) | <0.001 |
| P value | 39 (39.0) |
| Look away from him |
| Male (n = 44) | 11 (25.0) | 1 (1.8) | HS |
| Female (n = 56) | 10 (24.4) | 2 (3.4) | HS |
| P value | 12 (12.0) |
| Fill in the person's words |
| Male (n = 44) | 2 (4.5) | 5 (8.9) | HS |
| Female (n = 56) | 7 (17.1) | 0 (0.0) | 7 (7.0) |
| P value | |
| Wait patiently |
| Male (n = 44) | 12 (22.7) | 10 (17.9) | 6 (14.6) | 14 (23.7) | 20 (20.0) |
| P value | |
| Tell the person to slow down or repeat |
| Male (n = 44) | 28 (63.4) | 12 (21.4) | <0.001 |
| Female (n = 56) | 12 (25.4) | 37 (37.0) |
| P value | |

| HS, highly significant. |
might fear that stuttering might affect their children’s educational, social, or occupational opportunities if it were to continue into adulthood. Several studies have found similar results [2,16,17].

The present findings show that the majority of parents behaved sensitively toward PWS; however, a significant difference was found between men and women in their response. The majority of mothers reported that they were confused about what to do when their child stuttered, whether to wait for the child to finish talking, or ask him to modify or repeat his speech. It was noted that although a large number of parents (64%) had a personal experience with a stutterer, it seemed that their resilient attitudes were evident irrespective of direct or indirect contact with PWS. Stuttering could be a stigmatizing condition because of the chronic nature of the disorder and the negative attitudes of listeners. The present findings seem to be consistent with those of previous studies [4,7,9,15,18].

It seems that parent–child interaction is a bidirectional relationship. Al-Khaledi et al. [17] reported that children learn how to react to stuttering from watching how their parents react; if parents show signs of frustration, fear, or annoyance, the child is more likely to show similar reactions, which may increase the severity of his/her stuttering.

In the present study, it was evident that maternal opinions of the therapy and prognosis reflected a pessimistic point of view and unrealistic expectations about treatment outcome. Most mothers reported that they felt that it was difficult to cope with the problem because they were not accepting it; others seemed reluctant and were not willing to inform the teachers at school about their child’s problem. The pattern of these findings agrees with those of Safwat and Amin [14]. However, it was reassuring that fathers had a more positive opinion about the recovery of their children and the possibility that they will lead a normal life. These findings might reflect acceptance, growing awareness, and open mindedness of fathers toward stuttering. These findings are not in agreement with those of Al-Khaledi et al. [17]. This might be attributed to differences in the cultural and educational backgrounds of the participants included in the study.

| Table 4 Comparison of the knowledge of treatment of stuttering among the studied parents in terms of their sex or educational level |
| --- |
| **Sex** | **Educational level** | **Male (n = 44)** | **Female (n = 56)** | **P value** | **Not educated (n = 41)** | **Educated (n = 59)** | **P value** | **Total (n = 90)** |
| **If my child is a stutterer I would** |  |
| Inform school teachers |  |
| 23 (52.3) | 40 (71.4) | 0.06 | 20 (48.8) | 43 (72.9) | 0.02 | 63 (63.0) |
| I would not inform school teachers |  |
| 21 (47.7) | 16 (28.6) | NS | 21 (51.2) | 16 (27.1) | S | 37 (37.0) |
| **I believe stuttering should be helped by** |  |
| The family of the person who stutters only |  |
| 15 (34.1) | 16 (28.6) | 0.3 | 13 (31.7) | 18 (30.5) | <0.001 | 31 (31.0) |
| Psychiatrists |  |
| 6 (13.6) | 3 (5.4) | NS | 1 (2.4) | 8 (13.6) | HS | 9 (9.0) |
| Phoniatrician |  |
| 12 (27.3) | 16 (28.6) | 3 (7.3) | 25 (42.4) | 28 (28.0) |  |
| Pediatrician |  |
| 11 (25.0) | 21 (37.5) | 24 (58.5) | 8 (13.6) | 32 (32.0) |  |

HS, highly significant; S, significant.

| Table 5 Comparison of the knowledge of the prognosis of stuttering among the studied parents in terms of their sex or educational level |
| --- |
| **People who stutter** |  |
| Can communicate effectively |  |
| 17 (38.6) | 6 (10.7) | 0.01 | 3 (7.3) | 20 (33.9) | <0.001 | 23 (23.0) |
| Can get a job and can do well at work |  |
| 8 (18.2) | 3 (5.4) | S | 0 (0.0) | 11 (18.6) | HS | 11 (11.0) |
| Can lead a normal life |  |
| 5 (11.4) | 2 (3.6) | 0 (0.0) | 7 (11.9) | 7 (7.0) |  |
| Will never speak fluently |  |
| 17 (38.6) | 30 (53.6) | 36 (67.8) | 11 (18.6) | 47 (47.0) |  |
| Will probably recover from their stuttering |  |
| 5 (11.4) | 7 (12.5) | 2 (4.9) | 10 (16.9) | 12 (12.0) |  |
| **Do you think** |  |
| Stutter should seek medical advice |  |
| 9 (20.5) | 13 (23.2) | 0.5 | 7 (17.1) | 15 (25.4) | 0.001 | 22 (22.0) |
| The condition might resolve on its own |  |
| 11 (25.0) | 16 (28.6) | NS | 9 (22.0) | 18 (30.5) | HS | 27 (27.0) |
| Stuttering cannot be treated |  |
| 4 (9.1) | 7 (12.5) | 5 (12.2) | 6 (10.2) | 11 (11.0) |  |
| Early intervention is essential in progress |  |
| 12 (27.3) | 9 (16.1) | 4 (9.8) | 17 (28.8) | 21 (21.0) |  |
| Device can be used |  |
| 6 (13.6) | 4 (7.1) | 8 (19.5) | 2 (3.4) | 10 (10.0) |  |
| Surgery |  |
| 2 (4.5) | 7 (12.5) | 8 (19.5) | 1 (1.7) | 9 (9.0) |  |

HS, highly significant; S, significant.
Evaluation of socioeconomic standard showed that parents involved in this study were from different educational backgrounds. The present data showed that education level and to a lesser extent sex were significantly associated with individuals’ knowledge of, attitudes, and reactions to stuttering. It was expected that the educated group would have more knowledge of the medical advances available in their region and may know that there are options and solutions to overcome this problem. In agreement with the present findings, Cox et al. [13] and Al-Khaledi et al. [17] reported that education may have some impact on a person’s reaction while speaking to PWS.

### Conclusion and recommendations

1. The findings of this study reflect the lack of parental tolerance and understanding of stuttering, which might be attributed to limited knowledge of the nature of the disorder.
2. The clinical implications of this study involved counseling the parents on the importance of their own attitude and its effect on their child’s reaction.
3. Awareness should be increased among teachers, the general public, and health professionals such as pediatricians and ENTs on speech–language pathology services and their existence. This can be done through media and TV teaching programs.

### Acknowledgements

**Conflicts of interest**

There are no conflicts of interest.

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**References**

1. Bloodstein O, Bernstein Ratner N. A handbook on stuttering. Clifton Park, NY: Thomson-Delmar Learning; 2008.
2. Ozdemir RS, St Louis KO, Topbas S. Stuttering attitudes among Turkish family generations and neighbors from representative samples. J Fluency Disord 2011; 36:318–333.
3. Abdalla FA, St Louis KO. Arab school teachers’ knowledge, beliefs and reactions regarding stuttering. J Fluency Disord 2012; 37:54–69.
4. St Louis KO. A global project to measure public attitudes about stuttering. ASHA Leader 2005; 22:2–13.
5. Craig A, Tran Y, Craig M. Stereotypes towards stuttering for those who have never had direct contact with people who stutter: a randomized and stratified study. Percept Mot Skills 2003; 97:235–245.
6. Panico J, Healey EC, Brouwer K, Susca M. Listener perceptions of stuttering across two presentation modes: a quantitative and qualitative approach. J Fluency Disord 2005; 30:65–85.
7. Guitar B. Stuttering: an integrated approach to its nature and treatment. Baltimore, MD: Lippincott Williams & Wilkins; 2006.
8. Yaruss JS, Quesal RW. Stuttering and the International Classification of Functioning, Disability, and Health: an update. J Commun Disord 2004; 37:35–52.
9. De Britto Pereira MM, Rossi JP, Van Borsel J. Public awareness and knowledge of stuttering in Rio de Janeiro. J Fluency Disord 2008; 33:24–31.
10. St Louis KO, Roberts PM, Lukong J, Freese M. In: Au-Yeung J, Leahy MM, editors. Linguistic, cultural, and geographic influences on public attitudes toward stuttering. Research, treatment, and self-help in fluency disorders: New Horizons, Proceedings of the Fifth World Congress on Fluency Disorders. Cameroon, Canada, USA: International Fluency Association, Electronic publication; 2007.249–255.
11. El-Gilany A, El-Wehady A, El-Wasify M. Updating and validation of the socioeconomic status scale for health research in Egypt. East Mediterr Health J 2012; 18:962–968.
12. Crowe TA, Cooper EB. Parental attitudes toward and knowledge of stuttering. J Commun Disord 1977; 10:343–357.
13. Cox N, Roe C, Suresh R, Cook E, Lundstrom C, Garsten M, et al. Chromosomal signals for genes underlying stuttering: a preliminary report. Paper presented at the 7th Oxford Dysfluency Conference, Oxford, June; 2005.
14. Safwat RF, Amin OR. Parental awareness of both speech/language and psychiatric/behavioral problems and their related service in Saudi Arabia. J Egypt Psychol 2008; 28:1–8.
15. Healey EC. What the literature tells us about listeners’ reactions to stuttering: implications for the clinical management of stuttering. Semin Speech Lang 2010; 31:227–235.
16. Safwat RF, Kamal AM. Variables types of anxiety in children with stuttering. J Egypt Assoc Mental Health 2007; 44:1–10.
17. Al-Khaledi M, Lincoln M, McCabe P, Packman A, Alshatti T. The attitudes, knowledge and beliefs of Arab parents in Kuwait about stuttering. J Fluency Disord 2009; 34:44–59.
18. St Louis KO, Roberts PM. Measuring attitudes toward stuttering: English-to-French translations in Canada and Cameroon. J Commun Disord 2010; 43:361–377.
## Appendix

### Table A1 Questionnaire of parental attitude to and knowledge of stuttering

|                                                                 | Not sure | Yes | No |
|-----------------------------------------------------------------|----------|-----|----|
| **(A) Epidemiology and etiology of stuttering**                |          |     |    |
| Do you know that stuttering                                     |          |     |    |
| Occurs more in females                                          |          |     |    |
| Occurs more in males                                            |          |     |    |
| Equal in both sexes                                             |          |     |    |
| Stuttering occurs                                               |          |     |    |
| Before the age of 3 years                                       |          |     |    |
| At school age                                                   |          |     |    |
| Absent in adults                                                |          |     |    |
| Stuttering occurs more in                                       |          |     |    |
| Left-handed person                                              |          |     |    |
| Right-handed person                                             |          |     |    |
| Same incidence                                                  |          |     |    |
| Person who stutter is often described as being                  |          |     |    |
| Shy                                                             |          |     |    |
| Nervous                                                         |          |     |    |
| Normal person                                                   |          |     |    |
| Unsocial                                                        |          |     |    |
| **(B) Parental attitude towards stuttering**                   |          |     |    |
| Stuttering can occur in the form of                            |          |     |    |
| Repetition only                                                 |          |     |    |
| Associated body movements                                       |          |     |    |
| If I were talking to a stutter I would                          |          |     |    |
| Ask him to repeat again                                         |          |     |    |
| Look away from him                                              |          |     |    |
| Fill in the stutterer’s words                                   |          |     |    |
| Wait patiently                                                  |          |     |    |
| Tell the stutterer to slow down or repeat.                     |          |     |    |
| If I were talking to a stutterer I would feel                   |          |     |    |
| Stressed                                                        |          |     |    |
| Relaxed                                                         |          |     |    |
| Confused about my reaction                                      |          |     |    |
| I feel about my child’s stuttering                              |          |     |    |
| Shame                                                           |          |     |    |
| Disappointed                                                    |          |     |    |
| I would not accept it                                           |          |     |    |
| I feel I cannot manage                                         |          |     |    |
| **(C) Parental knowledge about stuttering treatment**          |          |     |    |
| If my child is a stutterer I would                              |          |     |    |
| Inform school teachers                                          |          |     |    |
| I would not inform school teachers                              |          |     |    |
| I believe stuttering should be helped by                        |          |     |    |
| The family of the person who stutters only                      |          |     |    |
| Psychiatrists                                                   |          |     |    |
| Phoniatrician                                                   |          |     |    |
| Pediatrician                                                    |          |     |    |
| **(D) Parental knowledge of the prognosis of stuttering**      |          |     |    |
| People who stutter                                              |          |     |    |
| Can communicate effectively                                    |          |     |    |
| Can get a job and can do well at work                           |          |     |    |
| Can lead a normal life                                          |          |     |    |
| Will never speak fluently                                       |          |     |    |
| Will probably recover from their stuttering                    |          |     |    |
| Do you think?                                                   |          |     |    |
| Stutter should seek medical advice                              |          |     |    |
| The condition might resolve on its own                          |          |     |    |
| Stuttering cannot be treated                                    |          |     |    |
| Early intervention is essential in progress                     |          |     |    |
| Device can be used                                              |          |     |    |
| Surgery                                                         |          |     |    |