

Selective mutism and social anxiety disorders: are they two faces of the same coin?

Ghada A.M. Hassan, Ghada R.A. Taha, Abeer Mahmoud and Hanan Azzam

Ain Shams University Hospital, Cairo, Egypt

Correspondence to Ghada A.M. Hassan, MD,
Ain Shams University Hospital, Cairo, Egypt
Tel: +20 109 254 3525;
fax: +01203730736;
e-mail: ahmedsaeed20042010@yahoo.com

Received 6 June 2012

Accepted 24 February 2013

Middle East Current Psychiatry
2013, 20:156–163

Background

Selective mutism is a well-known disorder in International Classification of Diseases, 10th revision and *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. This disorder is found in less than 1% of children who are presented to mental health settings. There is a growing consensus among clinicians and researchers that selective mutism is an anxiety-related condition. Research studies on its phenomenology, comorbidities, and treatment are scarce.

Aim

The hypothesis of this study was that selective mutism is a form of social anxiety disorder. The study was carried out to identify social anxiety symptoms and disorder in a group of patients with selective mutism.

Methods

Eighteen patients with selective mutism were compared with an age-matched and sex-matched group of 18 patients with social anxiety disorder. Assessment of both groups was carried out through detailed assessment of history, examination of mental state, schedule for affective disorders and schizophrenia for school-aged children, present and lifetime version, the social anxiety scale for children, and an especially designed observation sheet. In addition, all patients received 6–12 sessions of behavioral psychotherapy on play therapy bases with family counseling. Patients who failed to provide a response after three sessions of behavioral therapy in addition received fluvoxamine 25–50 mg/day. Both groups were compared in terms of treatment response.

Results

Among the selective mutism group, the mean score on the social phobia scale was 27.3 ± 3.4 . Seven patients (38%) had comorbid social anxiety disorder. Comparison of both groups indicated no significant differences between them either in sociodemographic data or in social anxiety symptoms. The selective mutism subgroup with comorbid social anxiety had significantly higher social anxiety symptoms. Combination therapy proved to result in a better response in both groups. Good response was associated with more psychotherapy sessions (3), combination therapy and lower scores on the social anxiety scale at baseline.

Conclusion

There were significant social anxiety symptoms in the entire sample; yet, some participants reached the diagnostic threshold for social anxiety disorder whereas others did not. Selective mutism can be considered as a variant of social anxiety disorder because of the significant overlap in symptoms profile as well as treatment response. Further researches are required to explain the heterogeneity of patients with selective mutism. This will help in tailoring a treatment plan for patients.

Keywords:

comorbidities, social anxiety, selective mutism

Middle East Curr Psychiatry 20:156–163
© 2013 Institute of Psychiatry, Ain Shams University
2090-5408

Introduction

Selective mutism (SM) is a poorly understood childhood condition that affects ~1% of the population [1,2]. It is a disorder in which an individual cannot speak in specific situations when there is an expectation of conversational speech despite intact communicative language of such an individual [3]. Elective mutism is one of the International Classification of Diseases, 10th revision (ICD-10)

categories present under disorders of social functioning with onset specific to childhood and adolescent. In the last decade, there has been a growing consensus among clinicians and researchers that SM is an anxiety-related condition [3,4]. High rates of comorbid social phobia have consistently been reported [5–7]. Therefore, some theorists have suggested that SM is actually a more severe variant of social phobia [8,9]. At the same time, in the 3rd edition of the *Diagnostic and Statistical Manual*

of *Mental Disorders* (DSM-III), 'excessive shyness' and other anxiety-related traits were listed as associated features with SM [10]. However, it is classified in DSM-IV-TR under the category of disorders first diagnosed in infancy, childhood, or adolescence [11]. Despite the previous DSM-III concept, comorbidities, and the belief of many child psychiatrists that SM is a form of social anxiety in children, the classification system still deals with it as a separate disorder and not an anxiety disorder.

Experience with different classification systems showed a number of inconsistencies in the system and a number of instances in which the criteria were not entirely clear [4]. Therefore, the developers of these systems appointed work groups to revise ICD-10 and DSM-IV-TR to develop revisions and corrections that will lead to the publication of DSM-V and ICD-11. Recently, DSM-V added SM as a specifier in the diagnosis of social anxiety disorder (SAD) [12]. Numerous changes were made to the classification through the last decades (e.g. disorders were added, deleted, and reorganized), to the diagnostic criteria sets, and to the descriptive text on the basis of a careful consideration of the available research on the various mental disorders [11].

As a phenomenon, SM is considered as a symptom rather than a disorder that involves a group of symptoms and suggested pathophysiology. Another issue was comorbidity between SM and SAD as many investigators [13–15] proposed that SM is characterized by anxiety, given the clinical presentation (e.g. high anxiety, avoidance) and high comorbidity with SAD [16]: there are many difficulties facing research on SM. Most of the studies of SM consisted primarily of small sample populations and case reports [17]. Moreover, researchers could not depend on structured or semistructured interviews alone in the diagnosis as the patients are nonfluent and usually socially inhibited and uncooperative during interviews. This is why additional tools for diagnosis were necessary such as teachers' observations together with assessment of history and clinician's observations, although these are not standardized tools. In Arab countries, the situation is more difficult as there are not enough data on the disorder, or its prevalence, phenomenology, or comorbidities.

To summarize, the debate is whether SM is a symptom or a disorder. If it was just a symptom in different disorders (such as anxiety disorder, communication disorder, or oppositional defiant disorder), why is it still present in different classification systems? This debate requires a considerable research on phenomenology, comorbidities, psychosocial aspects, and possible etiologies.

Aim and hypothesis

The hypothesis of the current study was that SM is a variant of a social anxiety disorder in children with different presentations. The aims of the study were to (a) to identify social anxiety symptoms and disorder among patients with SM and (b) compare patients with

SM with another group of patients diagnosed with social anxiety in terms of symptom profile, past history, sociodemographic data, and response to treatment.

Participants and methods

Design and site of the study

The current study was a prospective comparative study. It was carried out in the Al-Amal Complex for Mental Health at Dammam, Kingdom of Saudi Arabia (KSA). All patients were recruited from the outpatient clinics of child psychiatry in the period between 2008 and 2010. The Complex is one of the largest mental health hospitals in KSA. It belongs to the Ministry of health and it offers services free of charge. The outpatient clinic of child psychiatry operates daily through a multidisciplinary team.

Ethical issues

The design and methods of the study were approved by the ethical and scientific committee of the Al-Amal Complex for Mental Health. All patients and their legal guardians were informed of the details of the study and provided an informed consent.

Patients

The study included two groups of patients. The first group included patients with SM and were recruited on the basis of certain criteria. The inclusion criteria were as follows: patients diagnosed with SM according to DSM-IV and age range up to 12 years. The exclusion criteria were as follows: patients with any neurodevelopmental disorder (mental retardation, schizophrenia, autism) and neurological disorders that affect speech and communication disorder (as this is one of the exclusion criteria in DSM-IV) [11]. Among 22 patients who presented to the clinic during the above-mentioned time period, 18 patients fulfilled the criteria, provided consent, and completed at least six psychotherapy sessions in order to assess response to treatment. The second group included 18 patients with social anxiety disorder. They were matched for age and sex with the first group.

Procedures and tools

Study proper

All patients in both groups were subjected to the following procedures: (a) assessment of clinical history according to the ICD-10 symptom check list [18], (b) Schedule for Affective Disorders and Schizophrenia for School Aged Children Present and Lifetime Version [19], (c) testing of the children with audiotapes for fluency, as the parents were requested to record conversations or songs of their children to examine their speech and exclude any speech disorder; positive cases were confirmed by a phoniatric Doctor. Further assessment of fluency was performed by counting the number of words spoken over a given time period, volume, and complexity of speech, which was done in the rehabilitation room in the presence of three individuals (one parent, psychologist, and psychiatrist) at the first assessment in the absence of a

parent in the last assessment. (d) An observation sheet that was created by the research group was used to detect any anxiety symptoms, (e) the Arabic version of the social anxiety scale for children (SASFC) [20,21], (f) intelligence quotient (IQ) assessment using the Arabic version of the Stanford Binet intelligence test [22,23], (g) 6–12 sessions of behavioral therapy, and finally (h) patients who did not show any response after three sessions received fluvoxamine 25–50 mg daily for 12 weeks if the parents agreed to pharmacotherapy.

Assessment of response in both groups was carried out on the basis of the operationalized criteria. In the SM group, we focused on fluency of speech on different occasions together with number of spoken words, complexity of sentences, and volume of speech. In addition, response was assessed on the basis of the score of the observation sheet as patients' responses were assessed according to two factors: (a) symptoms decrease more than 50% on the observation sheet's score in comparison with the score at study onset and (b) patients became fluent on different occasions, especially at school. Response was considered partial if (a) reduction in the score was less than 50% and (b) patients showed on and off improvement at school. The response was considered poor if it was still almost the same. In case of SA, response was assessed on the basis of the score of SASFC. The response was categorized as good if the score decreased by more than 50% from the score at onset or the total score was less than 18. Also, the response was considered poor if the score decreased by less than 50% or the total score was between 24 and 36. Finally, the response was considered partial if the score decreased less than 50% but the total score was between 18 and 24.

Assessment of patients was carried out at three time points: at study onset, after three psychotherapy sessions to determine the need for treatment and at the end of the study. Statistical analysis was carried out only for the first and the last assessment.

Tools

Assessment of history also included data on past psychiatric history, especially for delayed language development (DLD), speech disorders, and family history, especially of anxiety disorders.

Schedule for Affective Disorders and Schizophrenia for School Aged Children Present and Lifetime Version is a semistructured interview. It was translated into Arabic and adapted the Arabic culture and has been used previously in many Arabic studies [24–26].

The observation sheet was designed by the research group to aid assessment of the severity of symptoms and response to treatment. The sheet has good internal consistency as Cronbach's α ranged between 0.69 and 0.78. This sheet included nine items answered by yes or no. No answer led to a score of 0 and indicated normal observation (absent symptom). Yes answer led to a score of 1 and indicated the presence of the symptom. The higher the total score, the higher the anxiety symptoms (up to 9). Items included emotional symptoms (such as

irritability and nervousness) at the time of stress or neurotic traits, Excess attachment to the caregiver, avoidance (such as school refusal, refusal to play with others), cognitive symptoms (lack of concentration, mental block with teachers or clinician), speech problems (such as stuttering, little and low voice speech), SM, somatic symptoms at school or at home, sleep disturbances such as nightmares, and specific phobias. The observation sheet aided assessment of patients for diagnosis and for response to treatment. Three copies of the sheet were completed by the parent at home, the school teacher, and the investigator in the rehabilitation room. To avoid duplication of information and false-positive results, certain items were reported as positive if there was an agreement between two reports on emotional symptoms, excess attachment to the caregiver, avoidance, speech problems, SM, and cognitive symptoms. Other symptoms could be reported by one observer (sleep disturbances, somatic complaint, and specific phobias).

The SASFC is a scale designed to assess social anxiety symptoms in children aged from 6 to 12 years [20,21]. The Arabic version was well standardized and validated and used in previous studies: the reliability score was 0.78 and 0.82 for both subscales; and satisfactory internal consistency (α values were 0.76 and 0.78) and validity scores were 0.83 and 0.85. The scale consisted of 12 items: six items for measurement of social skills and another six items for assessment of social communication. Scoring of the test was 1, 2, 3 according to how often the symptom occurred. The higher the score, the more severe the social anxiety symptoms. The cut-off score was 18, below which there were no social anxiety symptoms; it was determined on the basis of validation of the scale on a community sample [21]. The highest score was 36. In this study, patients were categorized as having mild social anxiety symptoms if the SASFC score was 18–24, moderate if the score was between 24 and 30, and severe if the score was more than 30. SASFC is a self-administered scale; however, in the current study, the investigators explained each item of the scale to the children and/or their parents without any suggestion. The scale was administered at the start of the study, after three sessions of psychotherapy, and after 3 months of treatment.

The Stanford Binet intelligence test is a well-known IQ test that was previously translated into Arabic and adapted to the Arabic culture [22,23]. The scale has also been used in many Arabic studies, with good reliability and validity. The test was carried out by an expert psychologist.

As mentioned above, all patients in both groups received 6–12 sessions of behavioral therapy (reinforcement of speech behavior and gradual desensitization of the anxiety-provoking and/or mutism-induced situations) as play therapy sessions together with family counseling during the same session. One session/week was conducted, each for 45 min. The sessions were conducted by an expert psychologist who was blinded to the purpose of the study.

Patients who did not show any response after three sessions received, in addition to psychotherapy, fluvoxamine 25–50 mg/day.

Apart from the IQ and sessions of psychotherapy, all assessments and all clinical tools were performed by two child psychiatrists with good inter-rater reliability for KSAD and SASFC as κ was at least 0.8.

Statistical analysis

Data obtained were analyzed by an expert statistician using the statistical package for social science, version 15 (SPSS Inc., Chicago, Illinois, USA). The statistician chose the best tests for a small sample size. Numerical data were represented in the form of mean and SD.

Categorical data were presented as numbers and frequencies and were tested for statistical associations using χ^2 -tests and cross-tab for analysis. The Mann–Whitney and Kruskal–Wallis tests were used to compare quantitative variables in the same group instead of an independent group *t*-test and one-way analysis of variance between-groups. κ was calculated to assess inter-rater reliability and reliability analysis was carried out to assess internal consistency of the observation sheet. Spearman's rank correlation was also used for nonparametric correlation to identify the factors associated with good response.

Results

The total number of patients in both groups was 36. The number of patients in the first group (SM) was 18. Also, the number of patients in the second group (SA) was 18.

As shown in Table 1, there was no significant difference between both groups in sex, order of birth, or family history of anxiety disorders. Past history of DLD was more prevalent among patients with SM, but this difference was not statistically significant.

There were no statistically significant differences between males and females in the SM group in terms of age of onset, presenting age, score on the social phobia scale, or clinical observation. Seven out of eight male patients received combined therapy versus five out of 10 female patients, but this was not statistically significant as P was 0.094.

In terms of sex differences in response to treatment, no statistically significant difference was found between males and females as P was 0.090.

In terms of social anxiety symptoms and diagnosis in the SM group, seven patients (38.9%) were diagnosed with a comorbid social anxiety disorder. At the same time, the mean total score on the social phobia scale in SM group was 27.3 ± 3.4 , which indicated moderate severity of symptoms. Furthermore, 27.8% of patients had severe symptoms according to the social phobia scale and 44.4% had moderate symptoms; another 27.8% had mild symptoms. In addition, the mean score on the observation sheet was 5.5 ± 1.4 . At the same time, six patients (33.3%) in the SA group had comorbid stuttering.

Table 1 Comparison between both groups in terms of sociodemographic data

	Selective mutism	Social anxiety	χ^2	d.f.	<i>P</i>
Age	7.2 $\pm$ 1.6	8.4 $\pm$ 2.2	–1.878	34	0.069
Age of onset	4.6 $\pm$ 1.7	5.6 $\pm$ 1.4	–1.925	34	0.063
Sex [<i>N</i> (%)]					
Male	8 (44.4)	10 (55.6)	0.444	1	0.505
Female	10 (55.6)	8 (44.4)			
Birth order [<i>N</i> (%)]					
Youngest	8 (44.4)	7 (38.9)	0.114	1	0.735
Other	10 (55.6)	11 (61.1)			
Past history of DLD and speech disorder [<i>N</i> (%)]					
Negative	14 (77.8)	16 (88.9)	0.800	1	0.371
Positive	4 (22.2)	2 (11.1)			
Family history of anxiety disorder [<i>N</i> (%)]					
Negative	13 (72.2)	14 (77.8)	0.237	2	0.888
Positive	5 (27.8)	4 (22.2)			

DLD, delayed language development.

As shown in the Table 2, there were similarities between both groups in the compared items, even in subitems of the observation sheet, except for two items: speech problems and somatic symptoms. Speech problems (such as low voice and little speech) were more prevalent in the SM group ($P = 0.005$). Somatic symptoms were more prevalent among the social anxiety group ($P = 0.040$).

As Table 3 shows, there were similarities among the three groups in age and scores of the observation sheet. However, there were significant differences in many items. The first difference was age of onset of illness, which was younger in the SM group without comorbidity ($P = 0.046$). The second difference among the three groups was the total score of the social phobia scale, which was higher in the SM group with comorbidity ($P = 0.011$). Moreover, the social communication subscale was also higher in the SM group with comorbidity ($P = 0.004$).

At the same time, there was no statistically significant difference between patients of the SM group who had a positive history of DLD ($n = 4$) and patients of the SM group who had a negative history of DLD ($n = 14$) in terms of the scores of social phobia scale, social skill subscale, and social communication subscale ($P = 0.319$, 0.276, and 0.468, respectively).

In the SM group, comparison of those with good or partial response ($n = 15$) versus those with poor response ($n = 3$) in terms of the type of treatment, number of sessions, and sex showed that the three poor responders were all female patients who received only psychotherapy as their parents refused pharmacotherapy, although there was no statistically significant sex difference ($P = 0.90$). In addition, there was a highly significant difference between both groups among those who received combined therapy ($N = 12$) as all had good response versus those receiving psychotherapy alone ($N = 6$); three had good response and three had poor response. Thus, the use of combination therapy in these patients yielded better results.

On comparing the SM and the SA group (Table 2), it was found that most of the patients in both groups received combined treatment, with no significant differences

Table 2 Comparison of the selective mutism group with the social anxiety group

	Selective mutism	Social anxiety	<i>t</i>		<i>P</i>
			Lower	Upper	
SPS	27.3 ± 3.4	26.8 ± 3.5	0.436	34	0.666
SS	14.1 ± 1.8	13.8 ± 2.4	0.394	34	0.696
SC	13.2 ± 2.1	12.9 ± 1.2	0.356	34	0.724
Observation sheet	5.5 ± 1.4	5.5 ± 1.3	0.000	34	1
IQ	92.5 ± 11.9	92.7 ± 10.9	-0.044	34	0.965
Number of sessions	7.9 ± 3	8.2 ± 2.7	-0.194	34	0.816
Management [<i>N</i> (%)]					
Psychotherapy	6 (33.3)	7 (38.9)	1		0.729
Combined	12 (66.7)	11 (61.7)			
Response [<i>N</i> (%)]					
Good	8 (44.4)	8 (44.4)	2		0.896
Partial	7 (38.9)	6 (33.3)			
Poor	3 (16.7)	4 (22.2)			

IQ, intelligence quotient; SC, social communication subscale; SPS, social phobia scale; SS, social skill subscale.

Table 3 Comparisons among social anxiety group, selective mutism patients with comorbid social anxiety and selective mutism without comorbid social anxiety

Items	SM without SA (<i>N</i> = 11)	SM with SA (<i>N</i> = 7)	Social anxiety (<i>N</i> = 18)	χ^2	<i>d.f.</i>	<i>P</i>
Age	6.7 ± 0.9	8 ± 2.2	8.4 ± 2.2	4.455	2	0.108
Age of onset	4.3 ± 1.1	5.1 ± 2.3	5.6 ± 1.4	6.174	2	0.046*
SSK	13.4 ± 1.8	15.3 ± 1	13.8 ± 2.4	4.400	2	0.111
SC	12 ± 2.8	15 ± 1.3	12.9 ± 1.2	11.283	2	0.004**
SPS	25.4 ± 2.8	30.3 ± 1.3	26.8 ± 3.5	9.013	2	0.011*
Observation	5.3 ± 1.6	5.9 ± 1.1	5.5 ± 1.3	0.848	2	0.654
Number of sessions of behavioral therapy	6.9 ± 2.1	10 ± 2.8	8.2 ± 2.7	5.740	2	0.057

SA, social anxiety; SC, social communication subscale; SM, selective mutism; SPS, social phobia scale; SSK, social skill subscale.

*Significant.

in management and response. However, there were significant differences in response between patients who received psychotherapy alone ($n = 13$) and patients who received combined treatment ($n = 23$). Patients who received combined treatment showed better response ($P = 0.030$).

Furthermore, factors associated with good response to treatment were combined therapy ($r = -0.361$, $P = 0.015$), lower total social phobia score at baseline ($r = 0.302$, $P = 0.037$), and lower score on social skill subscale ($r = 0.365$, $P = 0.014$). Moreover, the higher the score on the social phobia scale ($r = 0.280$, $P = 0.049$) and the social skill subscale ($r = 0.319$, $P = 0.029$), the higher the number of sessions of psychotherapy.

Discussion

In the last decade, there has been a growing consensus among clinicians and researchers that SM is an anxiety-related condition [3,4]. This is why the current study was carried out to identify social anxiety symptoms and disorder in a group of SM patients and to compare the findings with another group with social anxiety disorder.

The results of the current study showed that the mean score of the social phobia scale of the SM group was 27.3 ± 3.4 . Seven patients (38%) from the SM group had comorbid social anxiety disorder. Comparison of SM and SA groups showed no significant differences between them either in sociodemographic data or in social anxiety symptoms. The SM subgroup with comorbid social

anxiety had significantly higher social anxiety symptoms. Combination therapy was found to lead to better response in both groups. Good response was associated with more psychotherapy sessions, combination therapy, and lower scores on the social anxiety scale at the start of illness.

In the current study, there was no statistically significance difference between both sexes in the diagnosis of SM as there were 10 females versus eight males. This finding was different from that of the study of Cunningham *et al.* [27], who found that SM is diagnosed more often in females than in males, with a female to male ratio of about 2–2.5:1.

Although in the SM group there were no significant sex differences in clinical symptoms, response to treatment, and number of sessions most of the males received combined treatment whereas the three poor responder patients were all females and their parents refused drug treatment; perhaps, this is why they showed poor response.

The SM group showed significant level of social anxiety as measured by SASFC.

The mean score of SASFC was 27.3 ± 3.4 , ranging from mild symptoms in 27.8% to severe symptoms in another 27.8%. Meanwhile, seven patients (38.9%) had comorbid social anxiety. These findings are in agreement with those of Cohan and Chavira [28], who reported that the mean scores on a standardized measure of social anxiety were indicative of clinically significant social anxiety and up to

44.6% of the total sample was characterized by clinically significant scores for social anxiety. However, Kristensen's study [29] reported social anxiety in 67% of 54 children with SM recruited from outpatient psychiatry clinics in Norway. Similar results have been reported in studies using community samples [1,2]. However, the findings of the current study were not in agreement with those of Black and Uhde [5] or Dummit *et al.* [6], who found that almost all of these children fulfilled the DSM-III-R diagnostic criteria for social phobia or avoidant disorder of childhood. This could be because of the lower rate of diagnosis of SA in patients with SM in the current study in comparison with the above-mentioned studies [5,6]; also, perhaps the patients in our sample were too young to express the symptoms of the disorder with the use of standardized tools and we used different criteria and tools of assessment. Moreover, SM is a heterogeneous disorder so social anxiety could not explain all cases of SM but other dimensions may explain some cases.

Cohan and Chavira [28] classified SM into three groups: (a) an exclusively anxious group in which social anxiety was the most prominent feature, (b) an anxious oppositional group, in which both anxiety and low-level behavior problems were prominent, and (c) an anxious-communication delayed group, in which both anxiety and developmental language delays were prominent. On the basis of this classification, in the current sample, all patients had significant social anxiety symptoms (the mean score on SASFC was 27.3 ± 3.4), which is in agreement with a previous study of Vecchio and Kearney [7]. In addition, one of the exclusion criteria in DSM-IV and ICD-10 in the diagnosis of SM is the absence of communication disorders such as stuttering, articulation problems, etc. That is, say speech should be within the 2 SD for age. Thus, the current sample did not include patients with communication disorders.

Similarly, although oppositional defiant disorder was beyond the objectives but according to clinical history and KSAD-PL no cases were reported in the current sample.

Moreover, several cultural differences may play a role in the prevalence of disorders.

In the current study, patients of SM with comorbid social anxiety ($n = 7$) had significantly higher scores on the social phobia total scale ($P = 0.011$) and subscale, especially social communication ($P = 0.004$). These findings were similar to the findings of the study of Yeganeh *et al.* [30], who reported that, in a sample of 23 patients, children with SM were significantly more anxious on structured interview and behavioral observation assessments. In the current study, although the SM group without comorbid social anxiety had a high anxiety level (25.4 ± 2.8) similar to the social anxiety group (26.8 ± 3.5), still, the SM group with comorbid social anxiety had significantly higher social anxiety level (30.3 ± 1.3). In sum, it was not SM alone or social anxiety alone that gave rise to this higher anxiety level but the comorbidity with social anxiety.

Among SM patients, the highest comorbidity in the sample was social anxiety (38.9%). Moreover, four patients (22.2%) had a history of DLD. These findings are similar to the results of many descriptive and case-control studies [29,31]. These studies reported that 20–50% of children with SM experience developmental language delays. This delay may take the form of diagnosable communication disorders or more subtle communication delays. Several early descriptive studies found evidence of delayed speech, articulation problems, and other communication disorders in more than 30% of clinically referred children with SM [31–33].

Moreover, among the patients in the social anxiety group, six (33.3%) had comorbid stuttering disorder. This percentage was lower than that of Arlin's study [34], in which the rates of overlap between social anxiety and stuttering were as high as 75%.

Current research indicates that there is likely a relationship between stuttering and social anxiety, but the nature of the relationship remains unclear.

Treatment for SM consists of two primary domains: non-medication-based and medication-based interventions [17]. In the current study, combined treatment was used in 66.7% of patients with SM and only 61.7% of patients with social anxiety, but there was no statistically significant difference. In addition, response was significantly better with combined treatment in both groups. Furthermore, comparison of SM patients with comorbid social anxiety versus those without showed that comorbid patients required significantly higher number of psychotherapy sessions. These findings agree with those of some case report studies [35,36], which suggested the enhanced effectiveness of combination treatments. For example, Wright and colleagues reported a positive response to treatment with fluoxetine in a combined treatment plan that also included family and behavioral therapy. Black and Uhde [36] found that among six children with SM, children actively administered fluoxetine over a period of 12 weeks showed improved ratings on mutism and anxiety, although other symptoms remained unchanged.

Although the current study was carried out in a naturalistic setting and it may be too early to establish factors related to good initial response, these preliminary data indicated that good response was associated with combined therapy, lower total social phobia score at baseline, and lower score on the social skill subscale.

Strengths and limitations

This study is one of the few available on SM and social anxiety in Arab countries. Assessment and follow-up of cases were carried out using valid and reliable tools that have been previously translated into Arabic and adapted to the Arabic culture. This is why data on diagnosis of the disorder, comorbidities, and severity of the illness were accurate, reliable, and valid. Furthermore, this study was one of few studies available that compared the treatment response of these children in a naturalistic setting.

However, one of the major limitations of the current study is the small sample size. SM is a rare disorder; thus, recruitment of the smallest statistically adequate sample from one center took considerable time.

Another limitation was the inability of the applied tools to search for other dimensions that may constitute SM such as oppositional defiant, dissociative and communication disorders. However, assessment of patients of SM was time consuming and exhausting for patients because of their avoidant hardly cooperative behavior.

Moreover, limitations included lack of randomization before interventions as treatment options were sometimes affected by parent consent on pharmacotherapy and number of psychotherapy sessions. However, head-to-head comparison of psychotherapy and combined treatments was not an aim of the current study.

However, this was the case in many previous studies [37–39].

Clinical and research implications

On the basis of the current study and previous studies, tailoring of a management plan for patients of SM should consider social anxiety symptoms and comorbidity. Further research is required to explore more details of the different dimensions of symptoms in patients with SM. Moreover, head-to-head comparisons of different types of psychotherapy and drug treatments are required to establish clear practice guidelines for treatment. However, in the current study, combination therapy was better than psychotherapy alone. Finally, refining the classification system for SM is highly recommended.

Conclusion

Patients with SM had significant social anxiety symptoms and were similar to patients with social anxiety in terms of sociodemographic data and anxiety symptoms. Some patients with SM were diagnosed with SA disorder. Still, it cannot be confirmed that SM is just a social anxiety disorder. Whether it is a variant of social anxiety that presents with SM or more heterogeneous than that is still unclear and further multicenter research is required with the use of appropriate tools.

Acknowledgements

The author acknowledges the efforts of all the staff of the Al-Amal complex for mental health, Dammam, KSA, in particular the dedicated efforts and support of Dr Mohamed Al-Zahrani.

Conflicts of interest

There are no conflicts of interest.

References

- Bergman RL, Piacentini J, McCracken JT. Prevalence and description of selective mutism in a school-based sample. *J Am Acad Child Adolesc Psychiatry* 2002; 41:938–946.
- Elizur Y, Perednik R. Prevalence and description of selective mutism in immigrant and native families: a controlled study. *J Am Acad Child Adolesc Psychiatry* 2003; 42:1451–1459.
- Schwartz RH, Shipon-Blum E. 'Shy' child? Don't overlook selective mutism. *Contemporary Pediatrics* 2005; 22:30–34.
- Sharp WG, Sherman C, Gross AM. Selective mutism and anxiety: a review of the current conceptualization of the disorder. *J Anxiety Disord* 2007; 21:568–579.
- Black B, Uhde TW. Psychiatric characteristics of children with selective mutism: a pilot study. *J Am Acad Child Adolesc Psychiatry* 1995; 34:847–856.
- Dummit ES, Klein RG, Tancer NK, Asche B. Systematic assessment of 50 children with selective mutism. *J Am Acad Child Adolesc Psychiatry* 1997; 36:653–660.
- Vecchio JL, Kearney CA. Selective mutism in children: comparison to youths with and without anxiety disorders. *J Psychopathol Behav Assess* 2005; 27:31–37.
- Black B, Uhde TW. Elective mutism as a variant of social phobia. *J Am Acad Child Adolesc Psychiatry* 1992; 31:1090–1094.
- Bögels SM, Alden LE, Beidel DC, Clark LA, Pine DS, Stein MB, Voncken M. Social anxiety disorder: questions and answers for the DSM-V. *Depress Anxiety* 2010; 27:168–189.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 3rd ed. Washington, DC: American Psychiatric Association; 1980.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. Text Revision Washington, DC: American Psychiatric Association; 2000.
- American Psychiatric Association. Recent updates to proposed revision for DSM-V. Updated 19 January 2011. Available at: <http://wvp.melpkrrb-2WM> [Accessed 13 February 2012].
- Garcia AM, Freeman JB, Francis G, Miller LM, Leonard HL. Selective mutism. In: Ollendick TH, March JS, editors. *Phobic and anxiety disorders in children and adolescents: a clinician's guide to effective psychosocial and pharmacological interventions*. New York: Oxford University Press; 2004. pp. 433–455.
- Beidel DC, Turner SM. *Childhood anxiety disorders: a guide to research and treatment*. New York: Taylor & Francis Group; 2005.
- Dow SP, Sonies BC, Scheib D, Moss SE, Leonard HL. Practical guidelines for the assessment and treatment of selective mutism. *J Am Acad Child Adolesc Psychiatry* 1995; 34:836–846.
- Anstendig KD. Is selective mutism an anxiety disorder? Rethinking its DSM-IV classification. *J Anxiety Disord* 1999; 13:417–434.
- Wong P. Selective mutism: a review of etiology, comorbidities, and treatment. *Psychiatry* (Edgmont) 2010; 7:23–31.
- Janca A, Ustun TB, van Drimmelen J, Dittmann V, Isaac M. *ICD-10 symptom checklist for mental disorders, version 1.1*. Geneva: Division of Mental Health, World Health Organization; 1994.
- Kaufman J, Birmaher B, Brent DA, Ryan N, Rao U. K-SADS-PL. *J Am Acad Child Adolesc Psychiatry* 2000; 39:1208–1243.
- La Greca AM, Dandes SK, Wick P, Shaw K, Stone WL. Development of the social anxiety scale for children: reliability and concurrent validity. *J Clin Child Psychol* 1988; 17:84–91.
- Abdelsalam A. *Arabic translation and validation of social anxiety scale for children*. Cairo: Alnahda Library; 2008.
- Becker KA. *History of the Stanford-Binet intelligence scales: content and psychometrics*. *Stanford-Binet Intelligence Scales, Assessment Service Bulletin number (1)*. 5th ed. Itasca, IL: Riverside Publishing; 2003.
- Hanoura M, Hamid A. *Stanford Binet intelligence test: arabic version*. Cairo: Anglo press; 2002.
- Bishery Z, Hassan G, Taha G, Elsayed Y, Abdelhady M. Early onset non affective psychosis: clinical and developmental perspectives. *Arab J Psychiatry* 2009; 20:109–122.
- Hassan GAM, Taha GRA. Long term functioning in early onset psychosis: two years prospective follow-up study. *Behav Brain Funct* 2011; 7:28–30.
- Effat S, Tawfik S, Hussein H, Azzam H, El Eraky S. Central auditory processing in attention deficit hyperactivity disorder: an Egyptian Study. *Middle East Curr Psychiatry* 2011; 18:245–252.
- Cunningham CE, McHolm AE, Boyle MH. Social phobia, anxiety, oppositional behavior, social skills, and self-concept in children with specific selective mutism, generalized selective mutism, and community controls. *Eur Child Adolesc Psychiatry* 2006; 15:245–255.
- Cohan SL, Chavira DA. Refining the classification of children with selective mutism: a latent profile analysis. *J Clin Child Adolesc Psychol* 2008; 37:770–784.
- Kristensen H. Selective mutism and comorbidity with developmental disorder/delay, anxiety disorder, and elimination disorder. *J Am Acad Child Adolesc Psychiatry* 2000; 39:249–256.
- Yeganeh R, Beidel DC, Turner S. Selective mutism: more than social anxiety? *Depress Anxiety* 2006; 23:117–123.

- 31 Steinhausen H, Juzi C. Elective mutism: an analysis of 100 cases. *J Am Acad Child Adolesc Psychiatry* 1996; 35:606–614.
- 32 Krohn DD, Weckstein SM, Wright HL. A study of the effectiveness of a specific treatment for elective mutism. *J Am Acad Child Adolesc Psychiatry* 1992; 31:711–718.
- 33 Wilkins R. A comparison of elective mutism and emotional disorders in children. *Br J Psychiatry* 1985; 146:198–203.
- 34 Arlin C. Stuttering and social anxiety disorder: the relationship between stuttering and SAD; 2010. Available at: <http://socialanxietydisorder.about.com/od/relateddisorders/a/Stuttering-And-Social-Anxiety-Disorder.htm> [Accessed August 2011].
- 35 Wright HH, Cuccaro ML, Leonhardt TV, Kendall DF, Anderson JH. Case study: fluoxetine in the multimodal treatment of a preschool child with selective mutism. *J Am Acad Child Adolesc Psychiatry* 1995; 34: 857–862.
- 36 Black B, Uhde TW. Treatment of elective mutism with fluoxetine: a double-blind, placebo-controlled study. *J Am Acad Child Adolesc Psychiatry* 1994; 33:1000–1006.
- 37 Carlson JS, Kratochwill TR, Hohnston HF. Sertraline treatment of 5 children diagnosed with selective mutism: a single-case research trial. *J Child Adolesc Psychopharmacol* 1999; 9:293–230.
- 38 Kumpulainen K. Phenomenology and treatment of selective mutism. *CNS Drugs* 2002; 16:175–180.
- 39 Manassis K, Tannock R. Comparing interventions for selective mutism: a pilot study. *Can J Psychiatry* 2008; 53:700–703.