Original article

Comparison of depressive disorders between the mothers of children with and without autism spectrum disorder

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Summary

Autism spectrum disorder (ASD) is a neuro-developmental disorder and a lifelong condition which has considerable impact on parents. Various psychiatric conditions are common in mothers of ASD children including depression, anxiety, low self-esteem, feeling of social isolation and high social anxiety. The objective of the study was to evaluate the presence of depression in mothers of ASD children in comparison with mothers of normally developing children. This was a cross-sectional, comparative and analytical study carried out in the outpatient department of Psychiatry in collaboration with the Shishu Bikash Kendro of Sylhet MAG Osmani Medical College Hospital Sylhet, Bangladesh during the period from 1st January 2015 to 31st December 2015. A total of 75 mothers of ASD children were selected by convenient sampling technique and grouped as group A. Another 75 age matched mothers of normally developing children were recruited and grouped as group B. Depression was assessed primarily by using the Beck Depression Inventory (BDI). Those who scored 10 or above points, were evaluated further by mental state examination and DSM 5 criteria. The results showed that, depressive disorder was present in 31 (41.3%) mothers of ASD children and 12 (16.0%) mothers of normally developing children. Significantly higher rate of depressive disorder was present in mothers of ASD children than that of mothers of normally developing children (p=0.001). These findings concluded that the proportion of depressive disorders was higher and statistically significant.

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Introduction

Autism spectrum disorder (ASD) is a complex neurodevelopmental condition that involves persistent deficits in social communication and social interaction across multiple contexts and impairment in behavioral functioning such as restricted, repetitive and stereotyped pattern of behavior, interest or action. These symptoms begin in children before the age of 3 years. Epidemiological studies have consistently shown that autism spectrum disorder affects more males than females.[1] The prevalence of autism was reported 5.2 out of 10,000 from 1966 to 1998.[2] Current estimates suggest that in the United States the rate of ASD is 1 in every 50 school.[3] But according to DSM 5, the frequency is 1% of the population worldwide.

Children with ASD often remain physically and emotionally dependent on their mothers. Additionally, many children with ASD require intensive educational, behavioral and health services, which can be difficult for mother to access and when accessible, can require parental time and resources to facilitate. Thereby mothers of children with ASD are at a heightened risk for depression compared to mothers of normally developing children. These increased rates of depression are assumed to result from the increased stress and difficulty associated with caring for a child with ASD.[4] Indeed, relative to parents with other disabilities, parents of children with ASD report more concerns about their child's future needs and experience higher parental stress, which in turn is associated with increased depression.[5] Parents raising a child with ASD are faced with unique and extremely challenging stressors everyday; and thereby increased burden and psychological distress, decreased marital satisfaction, lower self-confidence, increased helplessness and increased negative emotions including fear, anger and resentment.[6-8] Factors related with parental stress of autistic children involve: children characteristics, especially behavioral symptoms, lack of appropriate professional support, social attitudes towards autistic people and difficulties in understanding the problems.[9]

Compared with parents of typically developing children, parents of children with ASD experience higher rates of depression, stress and anxiety, which adversely affects family functioning and marital relationships.[6,7,10] Although in Bangladesh, the awareness of autism has increased lately but still there is very limited information about the psychiatric or psychological impact on the mothers of ASD children. So the objective of the study was to evaluate the presence of depression in mothers of ASD children in comparison with mothers of normally developing children. By knowing the depressive disorders among the mothers of ASD children, one can explore the need of psychiatric consultation for them.

Materials and methods

This was a cross sectional, comparative and analytical study carried out in the outpatient department of psychiatry in collaboration with the Shishu Bikash Kendro, Sylhet MAG Osmani Medical College Hospital, Sylhet, Bangladesh from 1st January 2015 to 31st December 2015. A total of 75 mothers of ASD children were selected after fulfilling inclusion and exclusion criteria by convenient sampling technique and grouped as group A. Using the same sampling technique, 75 age matched mothers of normally developing children from the catchment areas were recruited and grouped as group B. Mothers of each group were interviewed by pre-designed semi-structured questionnaire containing socio-demographic and other relevant information. Assessment of depression was done using the Beck Depression Inventory (BDI).[11] Those who scored 10 or above points, were evaluated further by mental state examination and DSM 5 criteria.[12] The interview was conducted in a single stage procedure. Ethical issues were maintained properly and data analysis was done by using SPSS (Statistical Package for Social Sciences). Comparison was done by Chi-Square ($\div^2$) test, Fisher's exact test and unpaired t-test where applicable. A probability (p) value of <0.05 (p<0.05) was considered statistically significant.

Results

The results showed that the age of the participants ranged from 19 to 47 years with the mean age of 29.59 (±5.66) years in group A whereas the age of the participants ranged from 20 to 47 years with the mean age of 30.05 (±5.52) years in group B. The mean age of the participants in both groups was almost similar (t=-0.511; p=0.610) (Table 1). The socioeconomic status was significantly different between the groups ($\div^2$=8.542; p=0.014). The difference between the two groups in relation to religion and social background was not statistically significant ($\div^2$=0.027; p=0.870) (Table 2). The occupation and education of the participants was significantly different between two groups (p=0.003 and p=0.004 respectively) (Table 3 and Table 4). Most (57.3%) of the mothers had 1 to 2 children in group A whereas 51 (68.0%) mothers had 1 to 2 children in group B. The difference between two groups was not significant ($\div^2$=5.359; p=0.069) (Table 5). In group A, 72 (96.0%) participants had one ASD child and 3 (4.0%) participants had two ASD children (Figure 1). The age of the ASD children ranged from 17 months to 14 years with the mean age of 5.88 ± 3.25 years (Table 6).

Table 1: Distribution of the participants on the basis of age (n=150)

Age in years	Study group		p-value
	Group-A (n=75) Frequency (%)	Group-B (n=75) Frequency (%)	
Up to 20	2 (2.7)	1 (1.3)	*p=0.967
21-30	44 (58.7)	46 (61.3)	
31-40	26 (34.7)	25 (33.3)	
41-50	3 (4.0)	3 (4.0)	
Mean	29.59 (±5.66)	30.05 (±5.52)	†p=0.610

*Fisher's exact test and †unpaired t-test were employed to analyze the data.

Table 2: Distribution of respondents according to socio-demographic variables (n=150)

Socio-demographic variables	Study group		p-value
	Group-A (n=75) Frequency (%)	Group-B (n=75) Frequency (%)	
ReligionMuslim Hindu	66 (88.0)9 (12.0)	67 (89.3)8 (10.7)	*p=0.787
Socioeconomic statusHigherMiddleLower	6 (8.0)39 (52.0)30 (40.0)	6 (8.0)55 (73.3)14 (18.7)	*p=0.014
Social backgroundUrbanRural	37 (49.3)38 (50.7)	38 (50.7)37 (49.3)	*p=0.870
Type of familyNuclearJoint	37 (49.3)38 (50.7)	38 (50.7)37 (49.3)	*p=0.870

*$\div^2$ (Chi- square) test was employed to analyze the data.

Table 3: Distribution of participants according to occupation (n=150)

Occupation	Study group		p-value
	Group-A (n=75) Frequency (%)	Group-B (n=75) Frequency (%)	
Service	8 (10.7)	22 (29.3)	*p=0.003
Business	3 (4.0)	0 (0.0)	
Housewife	62 (82.6)	53 (70.7)	
Day labour	2 (2.7)	0 (0.0)	
Total	75 (100.0)	75 (100.0)	

*Fisher's exact test was employed to analyze the data.

Table 4: Distribution of participants according to educational status (n=150)

Educational status	Study group		p-value
	Group-A (n=75) Frequency (%)	Group-B (n=75) Frequency (%)	
Illiterate	10 (13.3)	17 (22.7)	
Primary	21 (28.0)	22 (29.2)	*p=0.004
SSC	20 (26.7)	3 (4.0)	
HSC	12 (16.0)	11 (14.7)	
Graduate	8 (10.7)	16 (21.4)	
Postgraduate	4 (5.3)	6 (8.0)	
Total	75 (100.0)	75 (100.0)	

*Fisher's exact test was employed to analyze the data

Table 5: Distribution of participants according to number of children (n=150)

Number of children	Study group		p-value
	Group-A (n=75) Frequency (%)	Group-B (n=75) Frequency (%)	
1 to 2	43 (57.4)	51 (68.0)	*p=0.069
3 to 4	25 (33.3)	13 (17.3)	
5 or more	7 (9.3)	11 (14.7)	
Total	75 (100.0)	75 (100.0)	

*$\div^2$ (Chi- square) test was employed to analyze the data.

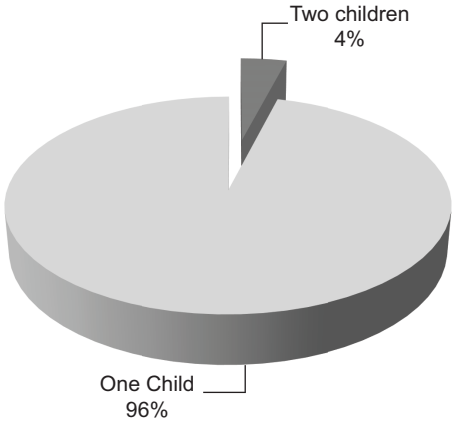
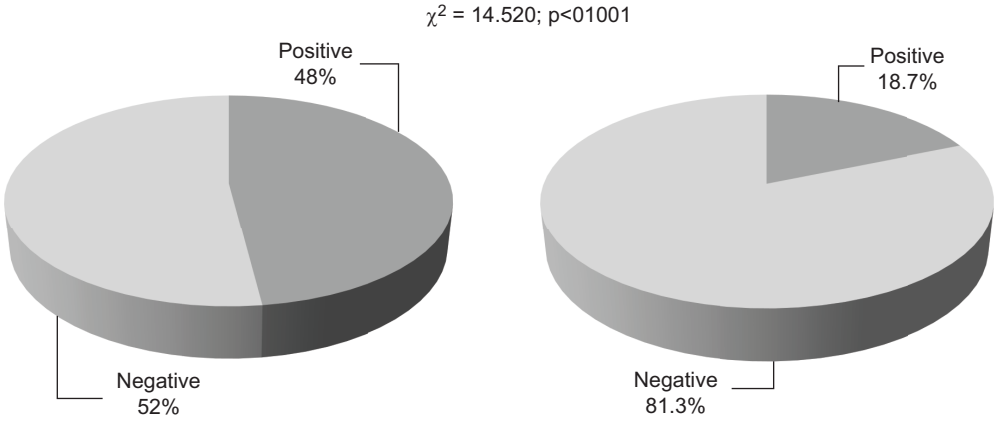


Figure 1: Distribution of participants according to number of ASD children (n=75)

Table 6: Distribution of participants according to the age of the ASD children (n=75)

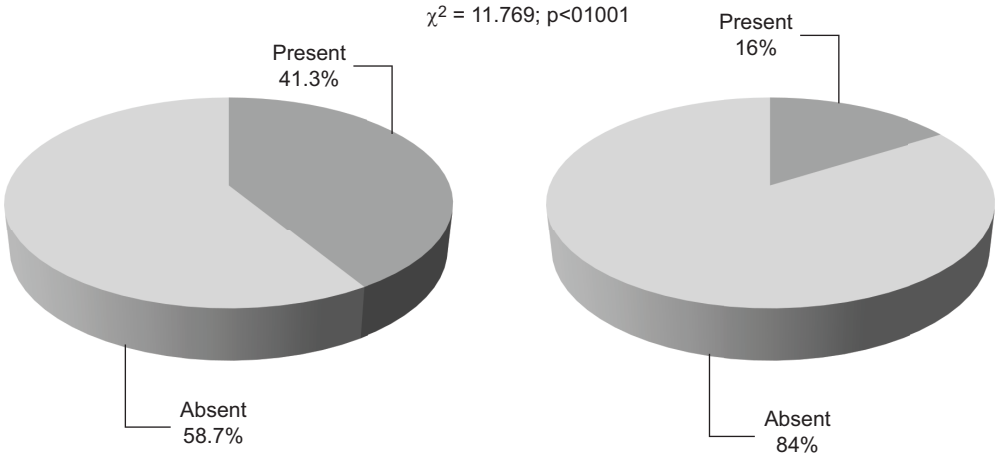
Age of ASD children	Years
Mean age	5.88
Standard deviation	±3.25
Range of age	17 months to 14 years

There was a significant difference of positive BDI score in mothers with ASD children than that of mothers with normally developing children (p<0.001) in this study (Figure 2). Depressive disorder was present in 31 (41.3%) participants of group A and in 12 (16.0%) participants of group B. Significantly higher rate of depressive disorder was present in group A than that in group B ($\div^2$=11.769; p=0.001) (Figure 3). Major depressive disorder was present in 19 (25.3%) mothers with ASD children and 8 (10.7%)



*÷^{2} (Chi- square) test was employed to analyze the data.

Figure 2: Distribution of participants by BDI scores (n=150)



*÷^{2} (Chi- square) test was employed to analyze the data.

Figure 3: Distribution of participants by depressive disorder according to DSM-5 criteria

mothers with normally developing children. There was a significant difference of major depressive disorder in mothers with ASD children than that of mothers with normally developing children (p=0.019). Persistent depressive disorder was present in 12 (16.0%) mothers with ASD children and 4 (5.3%) mothers with normally developing children. There was a significant difference of persistent depressive disorder in mothers with ASD children than that of mothers with normally developing children (p=0.034). Full criteria of depressive disorder were not meet in 5 (6.7%) participants in group-A and 2 (2.7%) participants in group-B, difference was not significant (p=0.442).

Discussion

Parents who raise a child with autism spectrum disorder face unique challenges. They tend to report lower quality of life, more depression and greater pessimism about the future than parents of typically developing children, as well as parents of children with other developmental disabilities.[13]

Autism is associated with burden and stress for parents.[14] Mothers of children with autism are more liable to suffer from depression than those of children with intellectual disability (ID) without autism, and mothers with typically developing children.[15,16] There was no statistically significant difference of the religion of the participants between group A and group B (p=0.797). Dave et al, found that religion of caregivers of intellectually disabled children was Hindu in 81.0% of cases and Muslim in 19.0% of cases. The reason of the difference may be the study place of Dave et al, which was India, a Hindu dominant country. But the present study was conducted in a Muslim dominant country. The socioeconomic status significantly differed between two groups (p=0.014). This may be due to the fact that

people of poor socioeconomic condition constitute the major bulk of the population in Bangladesh and they mostly avail the government hospital facilities. The occupation of the participants was significantly different between two groups (p=0.003). It has been noted in previous studies that employed mothers of disabled children perceive less stress in comparison to unemployed mothers and that employment may also serve as a buffer in their depression. Employed mothers usually have an outlet in the form of their job which allows them personal growth in some other area.[17] In our clinical evaluation and work with these mothers we have seen mothers who are employed are better adjusted than those who are unemployed. The difference between the two groups in relation to social background was not statistically significant (p=0.870). This may be due to that rural people are the major bulk of the population in Bangladesh and they are mostly poor or middle class people. They are the people who mostly avail government hospital facilities. Therefore rural mothers with ASD children were more in this study.

In this study the age of the ASD children ranged from 17 months to 14 years with the mean age of 5.88±3.25 years. This study showed that 48 (64.0%) of ASD children were male and 27 (36.0%) of ASD children were female. Epidemiological studies have consistently shown that autism spectrum disorders (ASDs) affect often more males than females. However, it has been debated whether this male predominance might be, at least in part, derived from under-diagnosis of this disorder in females.[1] In the present study BDI score was positive for depressive disorder in 36 (48.0%) participants of group A and 14 (18.7%) participants of group-B. Participants with BDI score positive for depressive disorder were significantly more in group A than that in group B (p<0.001).

In the present study depressive disorder was present in 31 (41.3%) participants of group A and in 12 (16.0%) participants of group B. Significantly higher rate of depressive disorder was present in group A than that in group-B (p=0.001). The factor impacting parental well-being is the shame often experienced by parents of children with autism. Parents may feel that they are not making the right treatment choices; especially given the constant advice from others about what treatments they should be trying.[18] They may also experience feelings of guilt for not doing enough for their autistic child and for not doing enough for their typically developing children.[19] Parents may even irrationally blame themselves for causing their child's condition in the first place.[20] This cascade of shame, guilt, and self-blame is a major contributor to parenting stress, depression and anxiety.[13] This study showed that major depressive disorder was present in 19 (25.3%) participants in group A and in 8 (10.7%) participants in group B. Presence of major depressive disorder was significantly more in group A than that in group B (p=0.019). Persistent depressive disorder was present in 12 (16.0%) participants in group A and in 4 (5.3%) participants in group B. Presence of persistent depressive disorder was significantly more in group A than that in group B (p=0.034). Full criteria of depressive disorder were not meet in 5 (6.7%) participants in group A and 2 (2.7%) participants in group B, difference was not significant (p=0.442). This may be due to co-existence of anxiety disorder which was not evaluated in this study.

Conclusion

A mother of ASD child with depressive symptoms often goes undetected and untreated. It is therefore necessary to assess the depressive disorders and manage them accordingly. Therefore awareness of the other members of the family and society should be directed towards the mothers' depression of the children having ASD. Mental health services must be directed to mothers as well as children of ASD. Effective planning and interventions are necessary to reduce mothers' depression.

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