**Research Article**

# Autistic Intensity in Relations to the Demographic Variables of Parents

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## Abstract

The study was carried out to investigate the relationship between the intensity of autistic disorders of the children and the demographic variables of the parents. A sample of 100 autistic children with age range from 6 to 26 years was purposively selected from a special school in Dhaka city. A questionnaire was used to get demographic variables of the parents of the autistic childrens. The Bengali version (Benerjy et al., 2005) of a Likert type scale named Autism Determining Symptom List (ADSL) was used in which 60 items and 5 answering options were included. The scale was used by direct interview and observation. The data was analyzed by using SPSS software. Findings demonstrated that the demographic variables of parents (father's blood group, socio economic status, living areas, number of siblings, number of autistic child and family planning) were positively correlated to autism intensity. On the other hand, demographic variables of parents (sex, mother's blood group and physical problem) were found negatively related to those of the autistic intensity.

*Keywords: Aautistic Intensity, Demographic Variables*

## Introduction

Autism is a developmental disorder that is marked by profound deficits in social, language, and cognitive abilities. The manifestations of autism vary considerably among children and within an individual child over time. There is no single behavior that is always typical of autism and no behavior that would automatically exclude an individual child from a diagnosis of autism, even though there are strong commonalities, especially in social deficits. In general terms, children within the autistic spectrum display a highly unusual pattern of deficits and skills. Children with autistic characteristics may be classified as having autism spectrum disorder, also known as pervasive developmental disorder (PDD). Pervasive developmental disorder includes several differentiated disorders, including autistic disorder, but all are characterized by "severe and pervasive impairment in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests, and activities" [1].

Autism has been defined by deficits in social reciprocity, communication, and repetitive behaviors or interests and these can each occur at different levels of severity. These early deficits in social responsiveness and communication have a seriously negative effect on the development of subsequent important behaviors. A child who is not socially engaged and does not learn to communicate effectively is at a definite disadvantage in learning more complex and subtle social and communicative skills. Either way, autism is no longer considered rare, occurring more commonly than Downs's syndrome, cystic fibrosis, and several childhood cancers [2].

The degree of impairment associated with autism varies widely, with approximately 75% of autistic individuals also meeting criteria for mental retardation [1]. Autism also occurs three to four times more frequently in males than females. Although recent advances have been made with respect to possible causal factors the exact etiology of autism remains unknown. Additionally, certain behavioral, educational, and pharmacological interventions have been demonstrated to be helpful for many individuals with autism.

A feature of children with autism is deviant or delayed speech and language skills [3]. Approximately half of children with autism fail to develop functional speech, but only a small percentage are completely nonverbal. This inability to communicate in a functional manner may be the most handicapping of any of the symptoms of the disorder [2].

The term ASD was proposed to use the term PDD in the Diagnostic and Statistical Manual of Mental Disorders 3rd Edition-Revised (DSM-III-R, American Psychiatric Association, 1987) and International Classification of Diseases10th Edition (ICD-10, World Health Organization, 1992). Since this time, a shift in the clinical perspective of these disorders has involved categorizing 7 the severity of symptoms as falling on a continuum or spectrum, with Asperger's Syndrome representing the higher functioning end, Autistic Disorder on the lower functioning end, and PDD-NOS falling in the middle. The term ASD to refer to all of these disorders and includes the following broad diagnostic criteria: 1) deficits in social communication and interactions, 2) restrictive, repetitive patterns of behavior, interests, and activities, and 3) symptoms must be present in early childhood American Psychiatric Association, 2010). Typically, children are diagnosed with ASD in the preschool years, although higher functioning children are often not diagnosed until the primary grades Autism Spectrum Disorders (ASDs) are typically characterized by difficulties with communication and social relationships, as well as inflexibility of thought and action. These are known collectively as the triad of impairments and are at the heart of the current diagnostic criteria [1] for ASD. In the most recent version of the DSM [1] (DSM-IV-TR: American Psychiatric Association, 2000), autism and related disorders are collected under an umbrella term of 'Pervasive Developmental Disorders (PDD), consisting of five

categorically defined disorders: Autistic Disorder (more commonly referred to as autism), Asperger's Disorder (more commonly referred to as Asperger's syndrome (AS)), Pervasive-Developmental Disorder – Not Otherwise Specified (PDD-NOS), Childhood Disintegrative Disorder (CD) and Rett's Disorder (more commonly referred to as Rett's syndrome (RS).

Although those in the US predominantly refer to the DSM [1], the 10th version of the International Classification of Diseases (ICD-10) (World Health Organization, 1992) is more commonly used throughout the rest of the world. In ICD-10 there are slight differences, with PDD instead consisting of seven disorders: childhood autism, atypical autism (which includes a typicality in age of onset and/or symptomatology), RS, other childhood (Ouellette-Kuntz et al., 2009). A recent 2013 pilot study in Bangladesh, utilizing community health workers, has found prevalence of all kinds of neuro developmental disability is 7.1%. Whereas, for ASD, the study indicates a prevalence of 0.15% (3% in Dhaka city and 0.07% in rural areas).Within this thesis, the following labels will be used: autism (referring to those with Autistic Disorder or childhood autism), Asperger's syndrome (referring to those with Asperger's Disorder or Asperger's syndrome), PDD-NOS (referring to PDD-NOS and atypical autism) and Autism Spectrum Disorder (referring to those with either autism, Asperger's syndrome or PDD-NOS).For a diagnosis of autism or AS to be made, an individual must meet criteria for all aspects of the triad of impairments. However, they must have exhibited functional language prior to 3 years of age to be diagnosed with AS; otherwise a diagnosis of autism is made. PDD-NOS, on the other hand, is the terminology used when the individual does not meet diagnostic criteria for all three domains. Diagnosis for ASD is based on wholly behavioral criteria and is typically based on a combination of parent interview (Autism Diagnostic Interview-Revised (ADI-R: Lord, Rutter, & Le Couteur, 1994)) and observation (e.g. Autism Diagnostic Observation Schedule – Generic (ADOS-G: Lord et al., 2000)) techniques, meaning that diagnosis is open to interpretation and can be dependent upon the experience and skill level of clinicians.

Autism Spectrum Disorders features a group of diagnoses that are considered clinically separate from another, but are many times grouped together for learning purposes, as their characteristics often times overlap. Demographic variables mean parents age, gender, father's and mother's blood group, father's and mother's qualification, socio economic status, living areas, marital status, number of siblings, number of autistic children, age difference between 1st children to autistic children, weight of autistic children, physical problem of autistic children, physical health of neonate stage, IQ of autistic child, family planning, physical problem of autistic children etc. This will help to find out the actual hidden causes.

## Methods

### Participants

The sample consisted of 100 persons who were purposively selected from different special schools for autistic children across Dhaka city, Bangladesh. No restrictions on age, sex, health, socio-economic status, education was placed on the selection of parents for participation in this study. Age of autistic children was started from 6 to 13 years and autistic children parents (father & mother) age was started from 25 to 60 years which were specify the autism intensity and their demographic variables of parents.

### Measuring Instruments

The following instruments were used in this study: demographic & personal information form, autism determining symptom list (ADSL). The first instrument being used for primary data collection was demographic Procedure information about the respondents.

This PIF involved information about the respondent's self and family history. There was no fixed time mentioned to complete the questionnaires but average completion times of the questionnaires were 30 to 45 minutes.

Autism determining symptom list (ADSL) Benerjy et al. (2005), This 60 item instrument provides scores on five dimensions: sensory: relating: body and object use; language; social and self-help. Scores on these may be summed to give an overall intensity score. It may be used with school-aged children. The scale consists of 60 of items. Each item consists of 5 point liker – style from (1) "entirely have not" (2) "very less has" (3) "less has" (4) "exclusive has" (5) "very exclusive has". Respondents could mark their comments on each the item giving a tick (√) mark on the appropriate point on the 5- point continuum. It's also used on special children school to identify the level of autism spectrum disorders on Bangladeshi context.

Standard data collection procedure was followed to collect the data from the different autism school at Dhaka city. They were informed of the purpose of the present study and necessary rapport was established before administering the questionnaires. They were asked to give tick (√) mark in the appropriate box. They were also requested not to omit any item in the questionnaire. They were assured that the data would be kept confidential and would be used only for research purpose. The questions asked parents to provide information about themselves and the child. The questions included the respondents' age (25 to 60 years), sex (male/female), father's/mother's blood group (A+/A-/B+/B-/O+/O-/AB+/AB-), father's/mother's qualification (H.S.C./ honors/masters), socio economic status (upper/middle/lower), living areas (rural/district/urban), marital status (married/unmarried/divorced/separated), number of siblings (1/2/3/4/5/6), number of autistic children (1st/2nd/3rd/4th), age difference between 1st child to autistic children (nil if 1st children was autistic/1/2/3/4/5/6/7/8/9/10years), weight of autistic children (1.5 to 2.8kg), physical problem of autistic children (yes/no), physical health of neonate stage (healthy/ unhealthy), IQ of autistic child (if knows they were wrote), family planning (yes/no), physical problem (If present they were wrote) and autism level (mild score 175 to 195/ low moderate 196 to 215/high moderate216 to 235/severe 237 to above). After scoring, all the data were exported to SPSS 20 data file for relevant analyses.

## Results

In order to analyze the data zero-order Pearson correlation and multiple regression analyses were applied on the obtained data. Correlation matrix of the variables in the study is presented in Table1 respectively. Table 1 shows the correlation matrix among age (1), sex (2), father's blood group (3 = FBG), mother's blood group (4 = MBG), socio economic status (5 = SES), living areas (6 = LA), number of siblings (7 = NA), number of autistic children (8 = NAC), difference between autistic children (9 = DBAC), weight of autistic children (10 = WAC), family planning (11 = FP), physical problem (12 = PP), and autism level scores (13 = ALS).

As shown in Table 1 result suggested that demographic variables of parents (father's blood group, socio economic status, living areas, number of siblings, number of autistic child and family planning) were positively correlated to autism intensity. On the other hand, demographic variables of parents (sex, mother's blood group and physical problem) were significantly negatively correlated. This table also shows that there was significant negative correlation between gender (-.492**) and age of parents. Also, there were significant negative correlation between mother's blood group (-.158) and fathers blood group (.012). Also, there were significant negative correlation between physical problem (-.350**) and family planning (-.303*).

In the Table 2 R indicates simple correlation between demographic

**Table 1:** Correlation matrix of the defined variables in this study has been presented respectively.

| Variables: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | -- | | | | | | | | | | | |
| Sex | -.490** | | | | | | | | | | | |
| FBG | -.071 | .006 | | | | | | | | | | |
| MBG | .200 | .012 | -.158 | | | | | | | | | |
| SES | .121 | -.010 | -.265* | .106 | | | | | | | | |
| LA | -.066 | .145 | .278* | .003 | .129 | | | | | | | |
| NS | .332** | -.095 | .076 | -.057 | -.296* | .073 | | | | | | |
| NAC | .395** | -.161 | -.071 | -.118 | -.116 | -.032 | .763** | | | | | |
| DBAC | 462** | -.135 | -.124 | .017 | -.061 | -.083 | .654** | .871** | | | | |
| WAC | -.233 | .067 | -.169 | -.419** | -.283* | .018 | .179 | .288* | .111 | | | |
| FP | -.227 | .037 | .031 | -.217 | -.283* | -.215 | -.258* | -.283* | -.290* | .266* | | |
| PP | .324** | -.152 | -.180 | .190 | .333* | -.138 | .137 | .267* | .223 | -.303* | -.350** | |
| AL | .058 | -.104 | -.062 | .236* | .142* | .037 | .101 | .178 | -.025 | -.071 | -.309** | .461** |

** Correlation is significant at the 0.01 level (2 tailed)
*   Correlation is significant at the 0.05 level (2 tailed)

**Table 2:** Regression model summary.

| Model | R | $R^2$ | Adjusted $R^2$ | Std. errors of the estimate | F change | Sig. F change |
|---|---|---|---|---|---|---|
| 1 | .616ᵃ | .379 | .341 | .773 | 9.937 | 0.000 |

a. Predictors: (constant) physical problem, age difference between autistic children, family planning, number of autistic children.
b. Dependent variable: autism level.

variables (physical problem, age difference between autistic children, family planning, number of autistic children) and autism intensity whereas $R^2$ implies that demographic variables accounts for 37.9% of the variation in autism intensity. Again the adjusted $R^2$ donates that the model is moderately good as the difference between $R^2$ and adjusted $R^2$ values (.379-.341=.038 about 3.8%) is countable and good. Finally, F change indicates that the change in $R^2$ is significant (p <0.05). Table 3.

The findings further indicated that variation in demographic variables of parents was accounted by joint linear influence of autism intensity. {F (4, 95) = 9.937, p <.000}. Therefore, Autism intensity was the important predictors, which influence of demographic variable of parents. Table 4.

The findings further indicated that t value in the model was significant (t98 = 3.079; p< .05) which indicates that the predictor (demographic variables of parents) was significant contribution to the model and current model likely to be representative of the true population value.

## Discussion

The main purpose of the present study was to prove demographic variables of parents as predictor of autism intensity. As shown in Table 1 results suggested that demographic variables of parents (fathers blood group, socio economic status, living areas, number of siblings, number of autistic child and family planning) were positively correlated to autism intensity. Demographic variables of parents (sex, mother's blood group and physical problem) were significantly negatively correlated. There was significant negative correlation

**Table 3:** Overall f-test for regression of demographic variables of parents on autism intensity.

| SV | SS | df | MS | F | Sig. level |
|---|---|---|---|---|---|
| Regression | 23.743 | 4 | 5.936 | 9.937 | 0.000 |
| Residual | 38.829 | 95 | .597 | | |
| Total | 62.571 | 99 | | | |

a. Predictors: (constant) physical problem, age difference between autistic children, family planning, number of autistic children.
b. Dependent variable: autism level.

**Table 4:** Parameters of the model.

| Model | Un standardized Coefficients | | Standardized coefficients Beta | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. error | | | |
| (Constant) | 1.486 | .483 | | 3.079 | .003 |
| number of autistic child | .983 | .286 | .692 | 3.431 | .001 |
| Difference between 1st child | -.203 | .053 | -.771 | -3.848 | .000 |
| Family planning | -.514 | .269 | -.205 | -1.910 | .061 |
| Physical Problem | .118 | .033 | .377 | 3.545 | .001 |

a. Dependent variable: autism level.

between sex and age of parents. Also, there was significant negative correlation between mother's blood group and father's blood group. Also, there was significant negative correlation between physical problem and family planning. Table 2 R indicates simple correlation between demographic variables (physical Problem, age difference between autistic children, family planning, number of autistic children) and autism intensity whereas $R^2$ implies that demographic variables accounts for 37.9% of the variation in autism intensity. Again, the adjusted $R^2$ donates that the model is moderately good as the difference between $R^2$ and adjusted $R^2$ values (.379-.341=.038 about 3.8%) is countable and good. Finally, F change indicates that the change in $R^2$ is significant (p <0.05). There has been little evidence to support such causes of autism as mother's exposure to drugs and alcohol, oxygen deprivation, lead exposure, or viral infections during pregnancy such as congenital rubella [4,5]. The findings of Table 3 indicated that variation in demographic variables of parents was accounted by joint linear influence of autism intensity {F (4, 95) = 9.937, p <.000}.

Therefore, Autism intensity was the important predictors, which influence of demographic variable of parents [6] (Taylor et al., 1999). Investigations suggested that well as any link to immunizations (Corbett et al., 2001). The findings of Table 4 indicated that t value in the model is significant (t98 = 3.079; p< .05) which indicates that the predictor (demographic variables of parents) was significant contribution to the model and current model likely to be representative of the true population value.

Genetic factors are likely to play a major role in the etiology of autism, and it is thought to be a complex collection of several genes that lead to autism in children [7,8]. Other investigations suggested that as many as 7% of males with fragile-X syndrome (a genetic disability) also have autism, which supports the theory that genes are

related to the occurrence of autism [9].

Autism is a neuro developmental disability. It has no cure. Conception to birth period is more crucial stage for every neonate [10,11]. Parents demographic variables are more interrelated with the autism intensity [12,13]. A professional like doctor, clinical psychologist, counselor and child psychologist can help to recovery any kind of obligation that child faces from birth by using various assessment and treatment.

## Acknowledgments

## Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

**Note:** We found the relationships on autism intensity with the demographic variables of 100 parents.

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