

Parental Stress and children with ASD: sex, age, level of autism and support perceived.

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Declaration

'I declare that this thesis that I have submitted to Dublin Business School for the award of BA (Hons) Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.'

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Abstract

The aim of this study was to examine parental stress levels of parents who have children with Autism diagnosis. Parental stress levels were examined in relation to child's level of autism, age, sex, professional support and social support. An online survey was used to conduct this research, which included several demographic questions, Psychological variables, APSI questionnaire and MSPSS questionnaire. Demographic questions included sex, age and marital status. Psychological variables included severity of autism, number of children with Autism in the family and professional support perceived. There was a total of 490 participants. Participation was entirely voluntary and anonymous. Results of this study revealed that parental stress is highly influenced by the severity of autism their child has and child's age. Professional support and social support were found to have an influence on the stress levels of parents. Parental sex had no relationship with the sex of the child.

1. Introduction

Stress is a part of human's everyday life. Most people experience stress on daily bases. Exams, relationships, parenting, work – are only some of the triggers for stress response. Sometimes stress can be caused even by positive events like getting new job or getting married. Stress can affect individuals thinking, behaviour, confidence, wellbeing. Stress can highly influence the quality of individuals life and how they function and behave from day to day. Some of the most common stress symptoms include: feeling irritated, loss of appetite, headache, low energy levels, sleeping problems, difficulty concentrating etc. Stress can affect individual physically and mentally, provoke psychiatric and physical illness or depression (Slavich & Auerbach, 2018). Stress might affect the ability of parents to effectively raise their children and respond to the needs their children might have. Sometimes stress can lead to depression, which has more intense symptoms and lasts longer. Depression requires professional treatment and help, it does not go away by itself. Many parents also experience anxiety on daily bases, caused by responsibility they have for their children and the additional needs their children might have. Parenting is a very common stress trigger and it depends on many factors, like: relationships with the child, child's gender and age. Child's personality and behavioural problems are also important to consider. disorders, disability etc. Parenting a typically developing child can be challenging and stressful at times. It is important to take in to account if child has any disorder or disability as these are also the possible stress triggers for parents. There are many children who have special needs and their parents receive a bigger challenge. When child is being diagnosed with any kind of disorder it's a stressful

moment for the parents. So, beside the everyday life stress there is also a stress that's caused by the disability or disorder. Parents of children with ASD experience higher levels of anxiety, stress and depression (Rayan & Ahmad, 2018).

One of the most common disorders found in children is Autistic Spectrum Disorder (ASD) as one in forty children receives this diagnosis (Slaughter, 2018). ASD is a neurodevelopmental childhood disorder which is associated with language and cognitive impairment (Lee, Ong, Lee, Nazri, 2017). It also happens that along with ASD diagnosis there might be some other disabilities, physical or mental. Difficulties in social interaction and communication, sensory issues, restrictive diet, repetitive behaviour and interests are only some of the most common characteristics of ASD. Child needs to show several signs of autism before 3 years of age and undergo several assessments to be diagnosed with ASD. DSM diagnostic criteria is usually used for the diagnosis. DSM-5, which was published in 2013, proposed three functional levels which were based on the amount of support the child needs. Level 1 – mild, level 2- moderate, level 3- severe (American Psychiatric Association, 2013). The level of severity of the ASD diagnosis plays extremely crucial role. There would be a very big difference between children depending on level of Autism. If a child was diagnosed with Mild form of ASD, usually only some minor level of support required for the child to live a normal life. There could be some minor difficulties in social communication, speech delay, poor eye contact, behavioural problems, difficulty with imaginative play, difficulty making friends, sensory issues etc. It is not necessary that all those difficulties are present in one child. Sometimes child can have good communication skills and show some great academical achievements in school but might have difficulties in making friends, social difficulties, sensory difficulties etc. Children with mild level of Autism usually attend mainstream school with the Special Needs Assistant (SNA) support. Some children with very mild autism might not require constant support from Special Needs Assistant if they are able to cope on their own with the mainstream school routine. In

this case SNA can supervise the child during specific hours needed like: during lunch break or play time/ outside; or child might not require any extra support. When child is diagnosed with Moderate form of ASD, usually moderate level of support is required. At this level child usually has significant social and communication difficulties, no speech or delayed and restricted speech, obvious behavioural issues, often stimming, often repetitive behaviour, restricted diet, sensory issues, extremely poor eye contact etc. Children with moderate level of ASD attend special needs preschools and schools. Also, they can attend a mainstream school which has a special needs unit or ASD unit attached. With the Severe ASD level children usually require constant support. At this level children have severe communication difficulties, very high behavioural difficulties, aggressive behaviour, severe impairment in functioning, sleep problems, very restrictive diet, severe social difficulties. Children with this level of Autism attend special needs preschools and schools. Parenting a special needs child involves a lot of responsibility and a lot of stress. Mostly it's the mothers who spend with the child all the time so they are more stressed than the fathers (Soltanifar, Akbarzadeh, Moharreri, Soltanifar, Ebrahimi, Mokhber...& Naqvi, 2015). Sometimes it might take a while to get the diagnosis for the child due to long waiting lists in the Health, Safety and Environment (HSE) sector. This also causes frustration and stress to the parents which have undergo several types of assessments and stay on waiting list to get their child diagnosed. Children with special needs are being looked after by HSE which offers them different type of interventions, therapies, groups and classes. There is also another waiting list to receive those types of therapies and supports. Therapies with children who have ASD gain positive results but it also depends on the level of Autism the child has and the difficulties or needs they have. Many different types of therapies and interventions are available to children with ASD diagnosis. Therapies can help to learn a child some new things, develop different type of skills, manage behaviour etc. Behavioural Therapy, Speech and Language Therapy, Occupational Therapy, Physical

Therapy; are only some of those that are available to children. They can greatly influence child's development and bring some positive results. Lack of professional support, like therapies and interventions, for children with ASD and their parents plays a very important role as it is another extreme stress trigger in their life's.

As many children are being diagnosed with Autism every year, there is a high demand for constant research on this topic. Studies investigate this diagnosis and everything that's related to it. This type of research gives the possibility to discover, improve, develop and propose the possible new ways to support parents and children with this diagnosis. Many researches look at parental stress and coping, proposing new ways to support parents who are in stress and suggesting new coping strategies. Research in this area plays crucial role in parental wellbeing. It is important to consider and investigate all possible stress causes for parents of children with ASD and target those under the higher levels of stress as soon as possible. Level of ASD diagnosed, child's age and support perceived are only some of the main possible stress triggers for parents. Research helps to determine how each factor influences stress levels of parents in order for appropriate therapies and interventions to be implemented without delays. This current research will focus on several factors as possible causes of stress, such as: level of ASD, age, sex, social support and professional support. Parents who have children with Autism experience much higher levels of stress than parents who have children with other disorders as reported by previous research (Rivard, Terroux, Boursier, Mercier, 2014). As children being diagnosed with this disorder very often, their parents live under the higher stress levels than parents of typically developing children. Those parents experience high levels of stress and require extra support. This is one of the main reasons for the need of research in this area, to investigate what causes higher stress levels and to provide those parents with adequate support, therapies, interventions etc. There are many types of stress that parents who have children with special needs can experience. Gallagher and Whitney (2012) proposed four different types of

stress experienced by parents who have children with special needs. First type includes characteristics, visibility and severity of the disability, age and dependency of the child. Second type includes different characteristics of parents and family, including: income level, economic, career, education, social, beliefs, previous experiences, disability perception etc. Third type includes demographic characteristics and if there are other disabilities in the family. Fourth type includes societal attitudes on disability and services availability (Gallagher & Whiteley, 2012).

One of the recent studies was conducted on parental stress topic and received significant results. The study on determinants of stress in parents of children with autism spectrum disorder was conducted in New York in 2014 (Rivard et al, 2014). This study investigated parental stress of 236 mothers and fathers. The main aim of this study was to investigate parental stress levels and to identify stress predicting factors. Results have shown that fathers experience much higher total stress than mothers ($t(117) = -3.83, p < .001$). Both mothers and fathers stress levels were associated with child's age, autism severity, intellect and adaptive behaviour. Stress levels were also higher for both parents when child was female or was aged 5 years or over. So, parental stress levels are being influenced by several factors of ASD and the age of their child. Stress experienced by parents is much higher when child is older. Research also suggested that parents who have female child with ASD experience higher stress levels than parents who have male child with ASD. However further research in this area received opposite findings to the research above. This research suggested that stress of mothers does not depends on the severity of child's diagnoses, while the severity had influence on father's stress levels. Research conducted in Iran in 2015 has compared the parental stress among mothers and fathers of children who have autistic spectrum disorder (Soltanifar et al, 2015). A correlation between severity of the disorder and parental stress level was examined. This research included children aged between 2 and 12 years which had a diagnosis of ASD which

was based on Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria. A total of 42 couples with ADS children took part in this research. The ASD severity was identified by CARS (Childhood Autism Rating Scale) and parental stress level was identified using PSI (Parenting Stress Index). The analysis of this research revealed that there was a positive correlation between PSI and CARS which formed CARS-P rating ($r=0.339$, $P=0.028$). There was also a positive correlation for fathers between the total stress and CARS-P rating ($r=0.333$, $P=0.031$). A significant difference was found between fathers and mothers, PSI-child domain score ($P<0.005$), PSI-parent domain score ($P<0.005$) and Total Stress Index ($P<0.005$). These findings suggest that fathers of children who have more severe level of ASD disorder have experienced more stress, while for mothers there was no significant correlation with the severity of ASD. This study has shown that fathers also need support and help to cope with stress. Analyses revealed that mothers experience much more stress than fathers, but this stress does not depend on the severity of diagnosis. However, there are several limitations in this study, like: small sample size and not considering the longitudinal parenting process.

As parents of children with special needs experience a lot of stress in their life's, some researchers are investigating and comparing the stress between parents of different children, including other disabilities and normally developing children. A study which was conducted in Pakistan in 2016 investigated the parental stress among parents of children with and without disabilities (Nadeem, Choudhary, Parveen, Javaid, 2016). This research aimed to examine the difference in stress levels between two groups but also measure other variables, like: age, gender of parent, disability and education level. Only physical and sensory disabilities were considered for this research. A sample size of ($n=200$) was used for this research where 100 participants were parents to a child with disability and another 100 participants were parents to a typically developing child. Only children aged between 3 and 12 years were included in this study. Parental Stress Scale was used to measure the stress levels of parents. Results have

shown that there was a difference in stress levels between parents of children with disabilities and parents who have typically developing child. This shows that parents who have children with disabilities experience much more stress than those parents who have a typically developing child. It was suggested that education level of parent has no influence on the stress levels. Research also stated that parental stress level is not influenced by the age of the child as results were not significant. These are contradictory findings to the research conducted previously in 2014 which suggested that parental stress depends on child's age (Rivard et al, 2014). This research had some limitations, such as: considering only physical disabilities for this study. A suggestion on the need of a longitudinal study was also given by the researchers. Because Autistic Spectrum Disorder is a very common among young children, many researchers in different countries investigate this topic. Another study on ASD topic was conducted in Italy in 2016 which investigated parental stress, coping strategies and social support in families of children with a disability (Cuzzocrea, Murdaca, Costa, Filippello, Larcana, 2016). This research considered different levels of autism and a Down syndrome diagnosis. The main aim of this research was to investigate parental stress among parents who have children with Down syndrome (n=12), low functioning autism children (n=8), high functioning autism (n=10) and typically developing children (n=20). Three questionnaires were used for the purpose of this study: Social Support Questionnaire, Parent Stress Index and Coping Orientation to Problems Experienced. There was significant difference between all 4 groups. Results have shown that parents who have children with ASD experience significantly higher levels of stress than parents in other two groups. There was no significant difference between parents of typically developing children and parents who have children with Down syndrome. It was also shown that parents who have child with low functioning autism experience higher stress than parents who have child with high functioning autism. Analyses showed that three groups of parents had turned more to religion than to social support: parents

of children with high functioning autism: $Z = 2.87$, $p < 0.01$; parents of children with Down syndrome: $Z = 4.14$, $p < 0.001$; parents of typically developing children: $Z = 4.99$, $p < 0.001$. This study suggested that parents who have children with high functioning autism have more preference in problem solving than social support. There was no relationship between positive attitude and social support. Social support had no influence on stress levels of parents who have children with high functioning autism. Parents who have children with low functioning autism gave more preference to positive attitude strategy than to social support. There was an influence of social support on stress levels which showed that stress levels decreased ($F(3,12) = 3.92$; $p < 0.05$; $R^2 = 0.50$). This research considered only mild (high functioning) and severe (low functioning) as types of ASD. The current study investigates the level of ASD diagnosis dividing it in 3 categories as mild, moderate and severe. This will allow to show the difference across all levels of this diagnosis.

In 2017 another similar study was conducted, but instead of measuring only physical or sensory disabilities like the research above (Cuzzocrea et al, 2016), current research examined children with Autistic Spectrum Disorder. This research was conducted in Malaysia in 2017 and investigated parental stress levels of parents with children who have ASD and parents with typically developing (TD) children (Lee et al, 2017). A total of 66 participants took part in this research, where 30 participants were parents to children with ASD and 36 participants were parents to TD children. All children with ASD were diagnosed using the DSM 5. The 3rd edition short form Parenting Stress Index was used for this research. Parents who have children with ASD showed much higher stress levels than parents who have typically developing children ($p < 0.001$). Results have shown that parents of children with ASD have significantly higher stress levels. It was also reported that parents who have older children with ASD experience more total parenting stress than those parents who have younger children with ASD. This research shows contradicting findings comparing to research conducted in Pakistan

in 2016, which suggested there was no difference in stress levels depending on child's age (Nadeem et al, 2016). However, this research supports the findings of previous research conducted in New York in 2014, which suggested that parental stress level is associated with child's age (Rivard et al, 2014). Parents who have children with special needs experience more stress than parents of a typically developing child. Parents with special needs children need the extra support in their life. It is important to consider different levels of autism for the research to investigate the parental stress level and provide the extra help and support to those under the highest stress levels. Other variables which might reduce or increase the stress need to be considered also. It is suggested that it would be beneficial for parents to be evaluated for psychological problems as those under extreme stress might need professional help. This type of research helps mental health sector to implement and plan different types of effective interventions that will help to reduce stress and provide help to parents of children with ASD diagnosis. Perceived social support network can increase the feeling of satisfaction and competence as a parent (Soltanifar et al, 2015).

Many of the previously conducted researches have shown significant results suggesting that parents of special needs children experience very high levels of stress and extremely in need of support. The main aim of current research is to investigate the stress levels of parents who have children with ASD. Autism levels and several other variables which can increase or decrease stress will be introduced in this research. The purpose of this study is to examine if parental stress level will depend on the child's level of autism, age, sex, professional support or social support. This research provides results as to which parents are in the need of extra support and this is very useful when planning the treatment or intervention strategies for parents and children. Research was conducted using online questionnaire which was distributed over the internet. Main platform for this survey were Facebook groups dedicated to parent of children with ASD. This research was available to both mothers and fathers. Research has

collected information regarding child's age, level of autism, sex, professional support, number of children with autism in the family and also included APSI scale and MSPSS scale. There was five Hypotheses suggested for this research. The first hypothesis suggests that parental stress level will depend on the child's level of autism, which is divided to mild, moderate and severe. It was suggested that parents with children who have severe autism will experience much more stress than those parents who have children with moderate or mild autism. Second hypothesis suggests that parental stress level will depend on the age of special needs child. It was predicted that the older the child the more stress there is for parents. Third hypothesis examined the relationship between parental stress level, social support and professional support. A prediction was made, suggesting that parents who receive professional support will be less stressed than those parents who do not receive professional support. Fourth hypothesis stated that perceived social support will influence parental stress levels. It was hypothesised that those parents with lower social support levels will experience more stress than others. For the fifth hypothesis it was suggested that perceived stress levels will depend on the sex of child with ASD. This hypothesis will also examine the social support impact in relation to child's sex, investigating if parents of boys or parents of girls experience higher stress levels and the level of social support parents receive.

2. Method

2.1. *Participants*

A sample size of 490 participants was used for this study. Final sample for analysis was 454 participants. Participants who didn't complete the survey or didn't give the consent to participate, were removed from the analysis. Participants for this research were parents who have at least one child with ASD diagnosis. All individuals were aged 18 years or over to participate in this survey. There was no gender split for parents participating in this research, so both mothers and fathers could take part in this survey. Most of the participants were sourced via Facebook groups dedicated to parents of children with ASD. Participation in this research was entirely voluntary. No personal information was collected.

2.2. *Design*

Quantitative survey design using purposive sampling was performed for this research. A number of demographic and psychological questions along with APSI and MSPSS questionnaires were used. APSI questionnaire was used as a measure for perceived stress and MSPSS questionnaire was used as a measure for perceived social support. Collected information was analysed using SPSS (version 25) software. Correlation design was implied twice for analysis of two different hypothesis. The relationship between the following variables was investigated: child's age & perceived stress; social support & perceived stress.

Cross sectional design was implied for a One-way Anova analysis to investigate the relationship of the following variables: perceived stress & level of autism. Level of autism has three groups: mild, moderate and severe. A T-Test analyses was implied twice for analyses of two different hypothesis. The relationship between the following variables was investigated: perceived stress, social support & professional support; perceived stress, social support & child's sex. Professional support variable had two groups: yes and no. Childs sex variable had two groups: male and female.

2.3. Materials

A *kwiksurvey.com* website was used to make an online survey. Facebook web page was used for distribution of this survey in specific online groups. A permission was asked from moderators of several groups which are dedicated to parents who have children with ASD. Several demographic questions and psychological variables along with two questionnaires were used for this survey. This survey contained a total of 33 questions and took about 10 minutes to complete. At first participants were presented with introduction page which included purpose of the study and asked if participants give consent to participate.

Demographic questions asked in this survey are: what sex is your child; what age is your child; what is your marital status. Psychological variables that were used are: do you receive professional support (therapies/ interventions), what level of autism your child has (mild/moderate/severe); do you have more than one child diagnosed with autism; how many children with ASD are there in the house.

Autism Parenting Stress Index

Autism Parenting Stress Index (APSI) Questionnaire was used for this survey (Silva & Schalock, 2012). There are 13 items in this questionnaire. Possible answers include: not stressful – 0; sometimes creates stress – 1; often creates stress – 2; very stressful on a daily basis – 3; so stressful sometimes we feel we can't cope – 5. This questionnaire is asking parents to rate the proposed aspects of child's health according to how much stress it causes. Sample questions: your child's social development; tantrums/ meltdowns; self-injurious behaviour; sleep problems. There is no coding letter. All items add together to gain the results. The higher the score – the higher the stress levels. The Questionnaire is included in appendices.

Multidimensional Scale of Perceived Social Support

Multidimensional Scale of Perceived Social Support (MSPSS) Questionnaire was used for this survey (Zimet, Dahlem, Zimet & Farley, 1988). There are 12 items in this questionnaire. Items divide into three groups: family (Fam), friends (Fri), significant other (SO). The instruction for this questionnaire asks parents to rate how they feel about the statements given on the scale from 1 to 7, where 1 is "very strongly disagree" and 7 is "very strongly agree". Sample questions: my family really tries to help me; there is a special person who is around when I am in need; I can count on my friends when things go wrong. To attain the score for subscales, specified items need to be added together and divided by 4. For SO subscale add questions 1,2,5 &10 then divide by 4. Fam subscale: 3,4,8 &11 then divide by 4. Fri subscale:

6,7,9 &12 then divide by 4. For total MSPSS score add all items together and divide by 12.

The Questionnaire and coding sheet are included in appendices.

2.4. Procedure

Participants were sourced using internet forum. Questionnaire link was developed using kwiksurvey website. A link to questionnaire along with introduction message was posted in Facebook groups dedicated to parents of children with ASD. Permission was gained from forum moderator before publishing the questionnaire. This was an anonymous survey. Information page was provided regarding the purpose of the study. Participants were also informed regarding data storage and protection. Participants were also asked if they give the consent to participate and could reply “yes” or “no”. A list with several demographic and psychological questions was presented to participants. There was a total of 7 questions in this section. The APSI questionnaire followed after this which included a brief indication on how to answer the questions. APSI questionnaires contains a total of 13 questions. After APSI questions were completed participants were presented with MSPSS questionnaire which also included a brief description on how to answer the questionnaire. MSPSS questionnaire contains a total of 12 questions. When survey was completed participants were presented with “Thank you” page and support details. This questionnaire contained a total of 33 questions. A total time to complete this survey was about 10 minutes.

2.5. *Ethics*

This survey has been approved by Dublin Business School ethics committee prior to conducting the research. This research follows the ethical guidelines of Dublin Business school and Psychological Society of Ireland. A permission from forum moderator was gained before publishing the survey online. Participation in this research was entirely voluntary and anonymous. No personal information was collected. Participants were informed regarding data storage is protection. All participants have a right to withdraw from participation at any time and remove their data from research.

3. Results

3.1. *Descriptive Statistics*

The collected data was analysed using the SPSS (version 25) software. There was a total of 490 participants in this study. As some participants did not fill in the survey or didn't give the consent to participate, they were removed from the analysis. The final sample of 454 participants was used to conduct the analyses. All participants were parents who have at least one child diagnosed with Autistic Spectrum Disorder. Variables included: perceived stress, age, sex, severity of autism, social support and professional support. Perceived stress was measured using APSI questionnaire. Perceived social support was measured using MSPSS questionnaire. Level of autism was divided into three groups: mild, moderate and severe. Moderate autism was found to be the largest group in this variable. There was a total of 186 (44.6%) children with moderate autism. Mild autism group was slightly smaller than moderate group. There was a total of 196 (42.2%) children diagnosed with mild autism. Severe autism group was the smallest group in this variable. There was a total of 57 (13%) children diagnosed with severe autism. More boys than girls were diagnosed with autism. There was a total of 337 (75.7%) boys and 108 (24.3%) girls with Autism. Only a slightly more than half of the participants were found to be in receipt of professional support, with a total of 56,1% receiving professional support. Another 43.9% of participants indicated that they do not receive professional support. There was 18.3% of parents who reported having more than one child with autism. Most of the participants were married with a total of 76.2% married and 23.8% single parents. All these results can be found in Table 1: Descriptive Statistics.

Table 1 Descriptive Statistics

Variables	Frequency	Valid Percentage
Autism Level		
Mild	186	42.2
Moderate	196	44.6
Severe	57	13.0
Child sex		
Male	337	75.7
Female	108	24.3
Prof. Support		
Yes	253	56.1
No	198	43.9
>1 Child with ASD*		
Yes	83	18.3
No	371	81.7
Marital Status		
Single	107	23.8
Married	343	76.2

*>1 child with ASD – More than one child with ASD.

3.2. *Inferential Statistics*

A One-Way Anova was implied for the first hypothesis to investigate if parental stress levels are influenced by the severity of child's autism diagnosis. Variables for this hypothesis were perceived stress and level of autism. Level of autism had three groups: mild, moderate and severe. Analysis of variance indicated a significant difference for total APSI scores across each category of autism severity, ($F(2,398) = 41.718, p \leq .001$). Post hoc comparisons using the Tukey HSD test indicated that the Mean APSI score for mild autism group ($n = 21.1, SD = 8.74$) was significantly lower than the moderate ($n = 26.3, SD = 10.1$) and the severe group ($n = 34.9, SD = 11.1$), as can be seen in Table 2. From this analysis we can conclude that

autism level has a high impact on parental stress levels. Parents who have children with severe and moderate autism are much more stressed than parents who have children with mild autism.

Table 2 APSI mean scores for mild, moderate and severe autism.

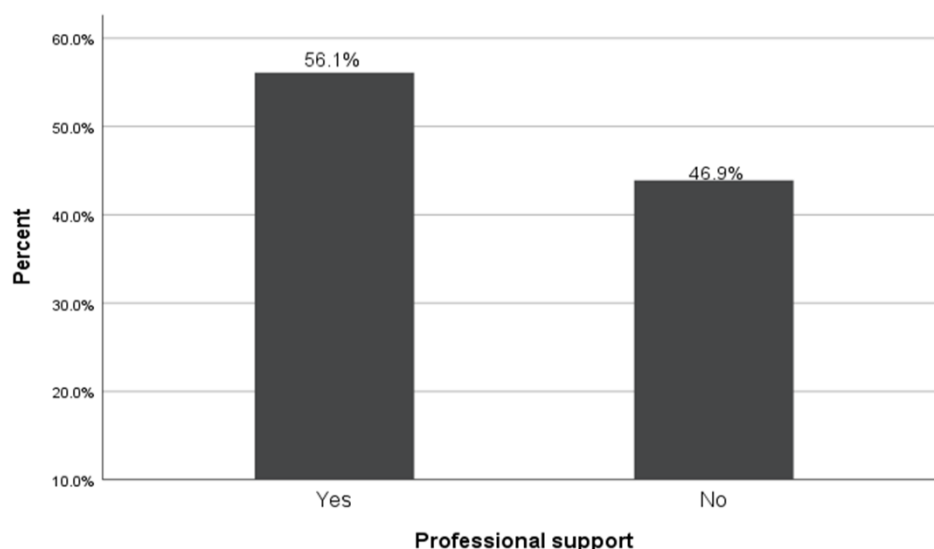
Variable	N	Mean	Std. Deviation
Mild	168	21.1	8.7
Moderate	181	26.2	10.1
Severe	52	34.9	11.1

To investigate the relationship of parental stress and age of child with autism, a correlational analysis was implied. Variables for this hypothesis were perceived stress and child's age. Correlational Analysis revealed that there was a weak negative correlation between parental stress (as measured by APSI) and the age of their child ($r = -.14$, $p = .01$). From this analysis we can conclude that parental stress levels depend on the age of child with autism. Analysis also showed that there was no significant relationship between age and total MSPSS.

When conducting an analysis to investigate the relationship between social support, professional support and parental stress, an Independent Sample T-Test was implied for the analyses. Independent Sample T-Test was conducted to analyse the difference in mean MSPSS score for those who receive and don't receive professional support. Results indicated that parents who received professional support display higher MSPSS scores ($M = 3.87$, $SD =$

1.61) than those who don't receive professional support ($M = 3.54$, $SD = 1.53$); $t(393) = 2.03$, $p = .04$. There was a total of 56.1% of participants who receive professional support and 46.9% of participants who do not receive professional support as can be seen in Figure 1. From this analysis we can conduct that parents who receive professional support for their children display higher scores on MSPSS scale than those parents who do not receive professional support. The higher score on MSPSS indicates that parents who receive professional support feel that they receive moderate level of social support, while lower MSPSS score indicates the feeling of low social support level. However, not all MSPSS sub-scales were significant when measuring between groups. Significant other sub-scale received significant results, while Family and Friends sub-scales were not significant. Analysis also showed that there was no significant relationship between professional support and APSI total. This analysis concludes that professional support has no influence on parental stress levels, however it has influence on the MSPSS scale.

Figure 1 Professional Support



To investigate the relationship of parental stress and social support, a correlational analysis was implied. Correlational Analysis revealed that there was a weak inverse correlation between MSPSS total score and APSI total score ($r = -.29, p < .001$). From this analysis we can conduct that that social support has a significant influence on parental stress levels. Parents who receive social support are less stressed than parents who do not receive social support.

An Independent Sample T-Test was conducted to analyse the difference in mean MSPSS score and mean APSI score depending of the sex of the child. Sex variable had 2 groups: male and female. Results indicated that there was no significant difference in MSPSS total scores between those who had male child ($M = 3.74, SD = 1.56$) and female child ($M = 3.75, SD = 1.68$). There was no significant difference in APSI total scores between those who had male child ($M = 24.9, SD = 10.7$) and female child ($M = 25.5, SD = 10.2$). There was a total of 337 boys and 108 girls. From this analysis we can conduct that parents of boys and parents of girls experience same stress levels as there was no significant relationship in this analysis. It was also shown that there was no relationship between social support and child's sex.

4. Discussion

The current study focused on stress levels experienced by parents who have children with Autistic Spectrum Disorder. The main objectives of this study were to investigate if parental stress levels will depend on the following: child's severity of autism, child's age, child's sex, professional support received, social support received. The research on this topic is very important as one in every forty children is being diagnosed with autism (Slaughter, 2018). Autism impacts parental life and provokes parental stress. Stress is a negative factor influencing individuals physically and mentally, and also can lead to depression (Slavich & Auerbach, 2018). As suggested by previous research, parents who have children with ASD experience higher levels of stress than parents who have children with other disorders or parents who have typically developing children (Rivard et al, 2014).

Current research revealed that severity of child's autism diagnosis had a significant influence on parental stress levels. Significant results were found on the APSI total scale when testing for the influence of ASD severity and mild ($M = 21.1$) group mean was significantly lower than moderate ($M = 26.3$) and severe ($M = 34.9$) groups. Total MSPSS was also significant between groups mild ($M = 4$), moderate ($M = 3.6$) and severe ($M = 3.4$). However, when looking at MSPSS sub-scale results, only Family and Friends sub-scales were significant; significant other sub-scale had no significant results. The above results suggest that parents who have children with severe autism experience much more stress than parents who have children with mild or moderate autism, similar results were indicated in previously conducted researches (Cuzzocrea et al, 2016; Rivard et al, 2014). So, parental stress level depends on the child's level of autism. Parents who have children with moderate level of autism experience less stress than parents of children with severe autism, but more than

parents with children who have mild autism. Therefore, parents who have children with mild autism experience much less stress than those who have children with moderate and severe levels of autism. However, previously conducted research suggested that mothers stress levels are not influenced by the severity of autism diagnosis (Soltanifar et al, 2015). It was suggested that severity of autism has influence only on father's stress levels. Severity of child's autism diagnosis also had a significant influence on Family and Friends MSPSS subscales.

There was significant correlation between APSI total score and the age of the child. No significant results were found between MSPSS total and child's age. These results suggest that parental stress levels are influenced by child's age. As previous studies suggested (Nadeem et al, 2016; Rivard et al, 2014) there is a relationship between parental stress and child's age. Current study also received similar results, suggesting that the older the child the more stress parents experience. Parents who have children with special needs require a lot of support. Professional and social support plays important part in life of parents who have children with autism. Therapies and interventions for children with autism have great impact on child's and parent's quality of life. This research shows that parents who receive professional support display higher scores on MSPSS total scale than those parents who don't receive professional support. This suggests that there is a significant relationship between perceived social support and perceived professional support. The higher score on MSPSS indicates that parents who receive professional support feel that they receive moderate level of support, while lower MSPSS score indicates the feeling of low support level. However, not all MSPSS sub-scales were significant when measuring between groups. Significant other sub-scale received significant results, while Family and Friends sub-scales were not significant. APSI total had no significant results either. These results suggest that there is no relationship between parental stress and professional support perceived.

Social support also had a significant influence on parental stress levels. Current research suggested that there was a weak negative correlation between MSPSS total score and APSI total score ($r = -.29, p < .001$). Parents who receive social support are less stressed than parents who do not receive social support. Similar results were achieved in previous research (Cuzzocrea et al 2016), however, only parents who had children with low functioning autism showed significant results in that research. Previously discussed research received significant results which indicated that parental stress levels depend on the child's sex (Rivard, et al. 2014). Research suggested that parents who have female child with autism experience more stress than those parents who have male child with autism. Current research also examined child's sex as a stress predictor for parents. This research received no significant relationship between parental stress levels and the sex of the child. These findings are apposite to those in previous research (Rivard et al, 2014). There was no significant relationship between social support and child's sex.

Further research in this area is very important in order to provide the parents who have children with autism with appropriate support. Not all results in this research were significant and some were opposite to those findings in previous studies. To summarise, the main finding of this research was that parental stress is highly influenced by child's severity of autism, child's age and social support perceived. Child's sex was found to be not significant and had no influence on parental stress levels. Professional support had no influence on parental stress, however there was a relationship between social support and professional support. This study suggested that parents who have children with severe autism are much more stressed than those parents who have children with mild and moderate autism, however it needs to be investigated is there a specific age frame where parents start to experience a much higher stress level. There was no relationship between boys and girls influence on parental stress. Because previous research had opposite results (Rivard et al, 2014) it still needs to be

investigated to determine if there is a difference in the stress levels between parents of boys and girls. Professional support variable requires more investigation to identify what kind of support or therapies are needed to the parents and their children and investigate if those supports can influence and help in reducing parental stress levels. Child's age is also an important factor to consider and investigate at what age parents experience higher stress levels. This needs to be measured in age groups to identify the age of the child when parents require more support and therapies. Social support is very important for parents as it decreases parental stress levels. Close family can be included in therapies and intervention to help them understand better how they can support and help to a parent who has child with autism.

5. Limitations

It is however, important to note the limitations of this study. Parental gender data was not collected in this survey, so it is not possible to investigate who is more stressed, mothers or fathers. For future research it is highly recommended to include a gender question for parents. Furthermore, parental age data was also not collected, it is only known that all participants are aged 18 years or over. Parental age is another factor that needs to be considered in future research to investigate if it has any influence on stress levels. Another limitation of this study is that it is not known if the child received official diagnosis from a specialist or if the diagnosis was assumed by the parent, same in respect of the level of autism. It is not known if parents rated severity of child's autism diagnosis on their own opinion or was it a clinical diagnosis. Current study relied only on self-report data. Sample of this study might be biased as parents were participants of autism support groups. Professional support variable was included in research but it is not known how often and what kind of professional support is received by participants.

6. Conclusion

Parents who have children with autism diagnosis experience much more stress than other parents. Research in this area aims to investigate parental stress levels and how they can be reduced. Therapies, interventions and coping strategies need to be implemented accordingly to those at higher stress groups. Research helps to identify which parents are under highest stress levels so that they can be provided with help and support. This research has shown that there are several factors that can influence the stress levels of parents who have child with autism, like: severity of autism diagnosis, age of child with autism and social support perceived. There was no relationship between parental stress levels and professional support. However, it is not known what kind of support and how often participants of this research received it. It is still important to investigate the influence and frequency of different types of therapies for children with autism on parental stress levels. There was no relationship between parental stress and child's sex, however much less girls were diagnosed with autism. Child's age in relation to parental stress needs to be investigated deeply with equal size samples of boys and girls.

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Appendices

Information sheet

Parental Stress and children with ASD: sex, age, level of autism and support perceived.

Dear parents/legal guardians,

My name is Kateryna Drogomyretska and I am a student in my final year of BA Psychology at Dublin Business School (DBS).

I am conducting a research to investigate the stress of parents/legal guardians who have children that were diagnosed with Autistic Spectrum Disorder (ASD). This study examines how different factors can influence the stress levels. This research is being conducted as part of my course and will be submitted for examination.

All participants must be 18 years or over and have a child with ASD diagnosis.

Participation is entirely voluntary and so you are not obliged to take part.

You are invited to take part in this study and participation involves completing the attached anonymous survey. Participation in this research is anonymous and confidential, no personal details will be collected. Responses cannot be attributed to any one participant. You can withdraw at any time before the submission of questionnaire. After the questionnaire has been submitted it will not be possible to withdraw from participation.

The questionnaires will be securely stored and data from the questionnaires will be stored in electronic format on a password protected computer.

By completing and submitting this questionnaire you are consenting to participate in this study.

Should you require any further information about the research, please contact

Kateryna Drogomyretska, xxxxxxxx.

My supervisor Dylan Colbert can be contacted at xxxxxxxx

Thank you for taking the time to complete this survey.

Thank you, page,

Thank you for taking the time to complete this survey.

Should you require any further information about the research, please contact

Kateryna Drogomyretska, xxxxxxxx

My supervisor Dylan Colbert can be contacted at xxxxxxxx

Demographic and Psychological questions

1. What age is your child?
2. What sex is your child? (male/female)
3. What level of Autism your child has? (mild/moderate/severe)
4. Do you receive professional support (therapies, interventions etc.)? (yes/no)
5. How many children with Autism do you have?
6. Do you have more than one child with autism? (yes/no)

Autism Parenting Stress Index (APSI)

	Stress Ratings				
	Not stressful	Sometimes creates stress	Often creates stress	Very stressful on a daily basis	So stressful sometimes we feel we can't cope
Please rate the following aspects of your child's health according to how much stress it causes you and/or your family by placing an X in the box that best describes your situation.					
Your child's social development	0	1	2	3	5
Your child's ability to communicate	0	1	2	3	5
Tantrums/meltdowns	0	1	2	3	5
Aggressive behavior (siblings, peers)	0	1	2	3	5
Self-injurious behaviour	0	1	2	3	5
Difficulty making transitions from one activity to another	0	1	2	3	5
Sleep problems	0	1	2	3	5
Your child's diet	0	1	2	3	5
Bowel problems (diarrhea, constipation)	0	1	2	3	5
Potty training	0	1	2	3	5
Not feeling close to your child	0	1	2	3	5
Concern for the future of your child being accepted by others	0	1	2	3	5
Concern for the future of your child living independently	0	1	2	3	5
	Subtotal				
Total					

- There is no specific coding sheet for this questionnaire. To attain a score all items, need to be added together. The higher the score – the more stress there is.

Multidimensional Scale of Perceived Social Support

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**

Circle the "2" if you **Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "4" if you are **Neutral**

Circle the "5" if you **Mildly Agree**

Circle the "6" if you **Strongly Agree**

Circle the "7" if you **Very Strongly Agree**

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	SO
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	SO
3.	My family really tries to help me.	1	2	3	4	5	6	7	Fam
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	Fam
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	SO
6.	My friends really try to help me.	1	2	3	4	5	6	7	Fri
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	Fri
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7	Fam
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	Fri
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	SO
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7	Fam
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7	Fri

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

Scoring for Multidimensional Scale of Perceived Social Support

The multidimensional scale of perceived social support: Scoring guidance

The Multidimensional Scale of Perceived Social Support is a measure of how much support a parent feels they get from family, friends and significant others.

Scoring

The parent completes 12 questions relating to the extent to which they feel they have support of their family, friends and a special person. Each of these forms a separate subscale relating to perceived support from a significant other, from friends and from family. You can also calculate a TOTAL Score.

To calculate subscale scores:

Significant Other Subscale: Add together items 1, 2, 5, & 10, then divide by 4.

Family Subscale: Add together items 3, 4, 8, & 11, then divide by 4.

Friends Subscale: Add together items 6, 7, 9, & 12, then divide by 4.

Total Scale: Add together all 12 items, then divide by 12.

Results

Any mean total scale score ranging from 1 to 2.9 could be considered low support; a score of 3 to 5 could be considered moderate support; a score from 5.1 to 7 could be considered high support.

Letter of access 1

Letter of access 2

Letter of access 3