

Title of Thesis:

Activity Participation of Children with Autism Spectrum Disorder
at Home and Community

By

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Supervisor's Statement

As supervisor of Khadija Akter Lily's M.Sc. thesis work, I certify that I consider her thesis "**Activity Participation of Children with Autism Spectrum Disorder at Home and Community**" to be suitable for examination.

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Declaration

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

This dissertation is being submitted in partial fulfillment of the requirements for the degree of M.Sc. in Rehabilitation Science.

This dissertation is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by giving explicit references.

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I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority.

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CONTENTS

Chapter	Page No.
Abstract	IV-V
Tables	I
Figures	II
Abbreviations	III
CHAPTER I: INTRODUCTION	
1.1 Background of study	01-02
1.2 Justification of the Study	03-04
1.3 Operational Definition	04
1.4 Research Question	05
1.5 Research Objective	
1.5.1 General Objective	06
1.5.2 Specific Objectives	
1.6 Theoretical Framework	07
CHAPTER II: LITERATURE REVIEW	08-14
CHAPTER III: RESEACH METHODOLOGY	
3.1 Study Design	15
3.2 Study Population	15
3.3 Study Site	15-16
3.4 Study Period	16
3.5 Sample Size	16
3.6 Inclusion Criteria	16
3.7 Exclusion Criteria	17
3.8 Sampling Technique	17
3.9 Data Collection Tools	17-18
3.10 Data Analysis plan	18
3.11 Quality Control and Quality Assurance	19
3.12 Ethical Consideration	19

CHAPTER IV: RESULTS	19-36
CHAPTER V: DISCUSSION	37-39
CHAPTER VI: CONCLUDING REMARKS	
6.1 Conclusion	49
6.2 Limitations of the study	41
6.3 Recommendations	42
REFERENCES	43-47
APPENDICES	
APPENDIX – A: Information sheet (English)	48
APPENDIX – B: Information sheet (Bangali)	49
APPENDIX – C: Consent Form (English)	50
APPENDIX – D: Consent Form (Bengali)	51
APPENDIX – E: Questionnaire (English)	52-60
APPENDIX – F: Questionnaire (Bengali)	61-68
APPENDIX – G:IRB Application and Approval Letter	69
APPENDIX – H: Data Collection Permission Letter	70-77

List of Table	Page no.
Table 1: Child and Caregiver Sociodemographic Characteristics	19
Table 2: Child's Characteristic	21
Table : Sensory Features of the Environment or Activity Impact on Participation at Home Activities	23
Table 4: Sensory Features of the Environment or Activity Impact on Participation at Community Activities	25
Table 5: Importance of the Activity Participation at Home	26
Table 6: Importance of the Activity Participation at Community	27
Table 7: At a glance of Strategy (S) those Help the Children Participation at Home (H) and Community (C)	35

List of Figure	Page no.
Figure 1: Keeping or developing routines	28
Figure 2: Presence of certain sensory features in the activity	29
Figure 3: Child having control of the situation	29
Figure 4: Preparing and planning for participation in the activity	30
Figure 5: Changing the sensory feature of activity	30
Figure 6 :Use of sensory strategies during the activity	31
Figure7: Keeping or developing routines	32
Figure 8: Presence of certain sensory features in the activity	32
Figure 9: Child having control of the situation	33
Figure 10: Preparing and planning for participation in the activity	33
Figure 11: Changing the sensory feature of activity	34
Figure 12: Use of sensory strategies during the activity	34

Abbreviations

ASD	Autism Spectrum Disorder
BHPI	Bangladesh Health Professions Institute
CRP	The Centre for the Rehabilitation of the Paralysed
CRPD	Convention on the Rights of Persons with Disabilities
DSM-V	Diagnostic & Statistical Manual of Mental Disorders V
ICF	International Classification of Functioning, Disability and Health
PDD-NOS	Pervasive Developmental Disorder Not Otherwise Specified
P-SEQ	Participation and Sensory Environment Questionnaire
PWDs	Person with Disabilities
WHO	World Health Organization

Abstract

Autism Spectrum Disorder (ASD) is increasing; one child in 160 has an ASD and subsequent disability (World Health Organization, 2013). A new survey state that in Bangladesh at least 17 per 10,000 babies diagnosed with ASD and in urban area the prevalence is high and boys are more sufferers (Autism prevalence high in urban areas, 2019). Caregivers state that Children with ASD has sensory processing difficulty and behavior problem which keep away themselves to participate in day to day daily living activities as well as which has great impact on social engagement (Schaaf et al., 2013). Sensory feature of the environment or the activity impact on child's participation .Around 45-96 percent children with ASD shows sensory difficulties (Lane et al., 2010). Through this study evidence based on sensory related environmental barrier identified and modified the sensory environment according to need which increases participation. The main objective of the study is to explore the status of activity participation of Children with ASD at home and community. Descriptive cross sectional study design was selected to conduct this study. Data collected through Participation and Sensory Environment Questionnaire (P-SEQ). Caregiver average age 33.60 years old (mean 33.60) and the childs average age was 6 years old (mean 6.051) with 76.9% boy and 23.1% girl. 76% participants from urban community and 49% identified as middle income family. The majority of children with ASD have impaired speech (49%). Among Children with ASD hyper sensitive and sensory seeking response 38.5% and 61.5% respectively. According to caregiver sensory feature of the environment or activity has lot of impact in home activities but a lot and too much impact found in community activities. In case of sensory seeking child a lot of impact found on Dressing and Bathing (35.90%), Toileting (37.50%), Falling Asleep (39.10%) and Brushing (43.80%). In case of hypersensitive similarly found a lot of impact on Dressing, Putting on Socks and Shoes, Tooth Brushing Meal Time with Family Members and Play with Toys accordingly 35.00%, Falling Asleep and Play with Siblings or other Children in the Home accordingly 37.50%. Too much impact has identified on Library Activities and Sporting Event of Another (35.0%), Sporting Event of the Child, Swimming and Movies/Theaters (32.50%), Religious Service, Event, or Education, Dental Appointments and Procedures and Using a Public

Bathroom (30.00%). A lot of impact identified on Family Parties at Another's Home (40.60%), play with other children outside of home and school (40%), Religious Service, Event, or Education, Play at the Playground/Park and Sporting Event of Another (35.90%). Most of the caregivers mentioned that among 15 activities participation in eating (99%), tooth brushing (94.20%), Toileting (93.30%), Dressing (89.40%) and Bathing (89.40%) are very important at home. Meals at Family or Friends' home (80.30%), School (78.80%), Play at the Playground/Park (75.00%), Community events (72.10%) and Religious Service, Events or Education (72.00%) are very important at community. At home and community keeping or developing routine and presence of certain sensory features in the activity both strategies are most helpful for children with ASD. But Preparing and planning for participation in the activity and use of sensory strategies during the activity are most important for ASD with hyper response children. Other top level study can include Rehabilitation professional perspective about impact of sensory on activity and participation and combine and compare the findings from both professional and caregiver perspective. By this a standard evidence based guideline could be develop for responsible professional for ensuring proper treatment for children with ASD.

Key words: Activity Participation, Autism Spectrum Disorder (ASD), Participation and Sensory Environment Questionnaire (P-SEQ).

1.1 Background

Bangladesh has currently 10% equates to 13.83 million Person with Disabilities (PWDs) as of July 2012, which includes approximately 3.4 million children with disabilities according to World Bank's estimation and day by day the number of PWDs are increasing, so that everyday facing many challenges for ensuring their rights in our society (Current status of Rights of Persons with Disabilities in Bangladesh: Legal and Grassroots Perspectives, 2015). According to World Health Organization (2011) global disability rate is increasing due to increased number of chronic disease and population ageing and about 15 % of the world's population has some variety of disability whereas 2-4 % has difficulties in functioning .United Nations Convention on the Rights of Persons with Disabilities (CRPD) appraise disability is gradually recognize as a human right issue as so many PWDs has experience prohibiting from day to day life activities such as to access equal health care, education, employment opportunities and disability related service, so that Person with Disability has poor socioeconomic status rather Persons with out Disabilities (World Health Organization and The World Bank, 2011). Disability consider as an umbrella term that addressing impairments, activity limitations and participations restrictions. When any problem identify in body function or structure consider as impairment, difficulty in execution of any task or activities by individual consider as activity limitation, and when an individual faces problem to engage in life situations consider as participation restriction (World Health Organization, 2019). Bangladesh government has an act for person with Disabilities named "Persons with Disabilities' Rights and the Protection Act 2013" which describe about 12 types of disability such as autism or autism spectrum disorders, physical disability, mental illness leading to disability, visual disability, speech disability, intellectual disability, hearing disability, deaf-blindness, cerebral palsy, down syndrome, multiple disability and other disability (Government of the People's Republic of Bangladesh, 2010). Autism Spectrum Disorders are cognitive and neurobehavioural disorder mostly characterized by three important features: deficits in socialization, deficits in verbal and nonverbal

communication and restricted and repetitive behavior (Mizanur, 2010). Autism Spectrum Disorder (ASD) increasing but yet in many low and middle income countries the exact prevalence of ASD unknown though recent evidence estimates a global median prevalence of 62/10000: one child in 160 has an ASD and subsequent disability (World Health Organization, 2013). In recent time Autism is one of the concerning issue in Bangladesh and study showed that the highest number of the autistic children was aged 7-9 (32%) (Hasnain et al., 2014). A new survey state that in Bangladesh at least 17 per 10,000 babies diagnosed with ASD and in urban area the prevalence is high and boys are more sufferers (Autism prevalence high in urban areas, 2019). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), features of autism spectrum disorder (ASD) are describe as include deficits in social skills, communication, restricted or repetitive behaviours, excessive adherence to routine, intense interest patterns and atypical sensory interests or responses and an estimation state that around 42% to 88% of people with ASD have impairments related to sensory processing that include both hyper and and hyperresponsiveness (Weitlauf et al. 2017). Parents state that Children with ASD has sensory processing difficulty and behavior problem which keep away themselves to participate in day to day daily living activities which has great impact on social engagement (Schaaf et al., 2013). People with ASD need accessible health service similar to general people but they have difficulty to access education, health care and other support (World Health Organization, 2013). Early diagnosis and intervention through a collaborative approach between parents and rehabilitation professional may bring improvement for children with ASD (Russell et al., 2010). Overall our quality of life, health and wellbeing depends on participation which may include community and social involvement as well as involvement in task of mobility, self care or activities of daily living, work, play, household tasks and communication within environment that help to play our role and fulfill our desires (Pfeiffer et al., 2018). Children with ASD participate less in activities rather children with other disabilities or children with typical development but participation in daily activities provide opportunity for learning and develop new skills otherwise arise effect on normal development due to limited activity participation among children with ASD (Little et al., 2015).

1.2 Justification of the Study

As a human being we have to involve or participate in daily living activity. We obtain skills; competencies through day to day participation in daily activity and following that find our meaning in life. So in that case we have to involve meaningful and purposeful activity. Life satisfaction increase through participate in purposeful and meaningful activities and it keep us fit and well. There are so many obstacle which keep away children with ASD participation in daily living activities which has terrible impact on proper development of the child. A child with ASD has difficulty in sensory processing, integrating and responding regarding stimuli. Sensory feature of the environment or the activity impact on child's participation .Around 45-96 percent children with ASD shows sensory difficulties (Lane et al., 2010) either they response as sensory seeking and hypersensitive.

Environmental factors limiting participation among children with disability. Sensory aspect of both environment and individual plays vital role in participation. Accurate problem identification and make solution regarding environmental or individual sensory aspect of ASD can increase participation in home and community activities. Through this study evidence based sensory related environmental barrier identified and modified the sensory environment according to need which increases participation.

Nationally and internationally very limited research has conduct on activity participation or functional outcome measure for children with ASD. Even very few studies have done on impact of sensory feature of CWA on activity participation. This study helps the pediatric rehabilitation practitioner to plan interventions, to establish realistic goals for treatment, to make discharge plan, prediction of functional outcome, functional evaluation, as well as documentation of functional performance. This allows the rehabilitation professional to prioritize interventions according to child's need for increasing functional outcome as well as to supporting families.

As my working experience with children with ASD, in Bangladesh I have seen that parents are more concern their child's wellbeing rather actively participate in daily work even self care activity. They think their child is ill, small. So after getting well they will engage the child in daily activity performance. Even they don't know that sensoery aspect of environment can also the reason that cause less activity participation. Day to day less

participation and activity can decrease the overall selfcare, productivity and leisure performance. Parents mention that they need to give extra care when their children with disability play children without disability. About 50% children with disability rarely or never played with neighborhood peers in their home. Parents are less aware about the importance and selection of daily activity (Solish et al., 2010). Even more they do not feel comfort to bring out their child outside of the home. This study helps to motivating the parents to actively engage in daily activity as well as at home and community. Furthermore this study could be used as a future roadmap to plan functional activity tackle among 4 years to 10 years age children with ASD.

1.3 Operational Definition

Autism Spectrum Disorders (ASD): Autism spectrum disorder (ASD) is usually diagnosis in early childhood with in 3 years and persist in lifetime as this identified as neurodevelopmental disorder. ASD is mainly characterized by impairment in social interaction, communication and repetitive or restricted behavior.

Activity Participation: Activity state as an individual has the ability to do a task and participation is described as when an individual engage in a life event or engage in any activity or task. Participation also describes as a group of organized sequential activities or tasks that looking forward to address an important personal and social goal.

1.4 Research Question

What are the status of activity participation of Children with ASD at home and community?

1.5 Research Objectives

1.5.1 General Objectives

To explore the status of activity participation of Children with ASD at home and community.

1.5.2 Specific Objectives

- To explore socio-demographic characteristics.
- To identify the impact of the sensory environment on activity participation at home and community.
- To determine the perceived importance of the activity participation at home and community.
- To find out the most important strategies those help the Children activity participation at home and community

1.6 Theoretical Framework

Predictive variables		Response variables
<p>Demographic factor</p> <ul style="list-style-type: none"> • Child age • Child sex • Care giver age • Caregiver educational level • Caregiver occupation • Income 	<p>Environmental factor</p> <ul style="list-style-type: none"> • Living area • Housing • Accessibility 	<p>Status of Activity Participation at Home and Community.</p>
<p>Social factor</p> <ul style="list-style-type: none"> • Community support • Family support 	<p>Medical factor</p> <ul style="list-style-type: none"> • Drug intake • Therapeutic treatment • Assistive device 	
<p>Severity of child's characteristics</p> <ul style="list-style-type: none"> • Sensory response • Speech • Behavioral • Hearing • Vision 		

Autism is considered as a neurodevelopmental disorder also named as Pervasive Developmental Disorders (PDD) which consist of three main deficits such as impaired communication, social interaction and restricted or repetitive behavior or interest (Faras et al., 2010). ASD is marked in early childhood and persists throughout the life time of the person (Mizanur, 2010).

The term 'ASD' is an umbrella term, under this a range of neurodevelopmental disorders including Autism, Asperger's Syndrome and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) but Childhood Disintegrative Disorder and Rett's Syndrome are not referred under ASD due to their diagnostic criteria (Lang et al., 2010). The term "autism" deriving from the Greek words "autos" means self and "ismos" means action, American Psychiatrist Leo Kanner addressed the term "early infantile autism" in 1943 to explain about those children who lost attention in other people as well as an Austrian pediatrician, Hans Asperger separately explained another group of children who has same behavior with mild severity with higher intellectual ability in 1944, after that his name attached as autism asperger syndrome (Faras et al., 2010).

Symptoms of ASD identified at early childhood which affecting their day to day activity and this become lots of burden on their family as well as the community (Yu et al., 2017). There are different symptoms among children with ASD such as poor social interaction and attention, repetitive movements, somatosensory disturbance such as often involvement in any movement or go forward and backward frequently, atypical development patterns, mood disturbance such as over activity or lost to response (Pfeiffer et al., 2011). Type of symptom can be different significantly, following that degree of impact would be mild to severe while participation in daily living activity (Pfeiffer et al., 2017).

Study shows that the etiology of autism identified in early fetals abnormal brain development caused by gene defect that gene help to development of brain and genetic causes of ASD are identified in about 10-15% cases where the causes are enlisted as fragile X syndrome, phenylketonuria, congenital rubella, tuberous sclerosis and many cytogenetic (Ganaie et al., 2014). One of the causes can be genetic but for some group of

children who are preterm infants have high risk of ASD (Arpino et al., 2010). Study found that ASD is highly inherited and presence of strong positive genetic predisposition and other study also mention that if genetic factor not present than it due to pre-, neo- and post-natal environmental riskfactor are identified as the etiology of ASD and also some epidemiology study found that medicine, toxicants, maternal infection during pregnancy, inflammation, metabolic, immunologic or nutritional factor and so many factor are increasing the risk of ASD (Yu et al.,2017).

There are some important feature of children with ASD as their incapability to relate with others, do not maintain eye contact, decrease interest in object or people, show stereotyped behavior, delayed or unclear speech or echolalia that is very common among ASD children, difficulty to adjust in any change but like same situation as well as difficulty in engaging in meaningful communication with each other but some children with ASD has extraordinary ability or performance in music, mathematics , computers and photographic memory though study state about 60% persons with autism has low level of intelligence (Ganaie et al., 2014).

Symptom of ASD can identified with in 18 months age of children and the American Academy of Pediatrics recommends for doing developmental screening of all children by age 24 months but the assessment for ASD diagnosis is critical as the diagnosis based on wide ranging behavioural response estimation as well as need long period of time to reach at end (Blumberg et al., 2013). According to Childhood Autism Rating Scale's score the severely autistic range in 62.5%, normal development noticed up to 18 months of age about 25% of cases and after that there was notice problem in speech and behavior (Ganaie et al., 2014).

Autism disorder is increased by the turn of 21 century and study state that boys are affected by autism 3 to 5 times more than girls (Ganaie et al., 2014). The fifth edition of the Diagnostic & Statistical Manual of Mental Disorders (DSM-V) explain that Autism is not a particular disorder but under a single spectrum a group of conditions are exist and ASD can take place in all ethnic and socioeconomically groups, which is more common to the boys rather that the girls (ration is 4 boys: 1girl). (Collaborative framework for addressing Autism Spectrum Disorder in the South-East Asia Region, 2017).

There is myth that autism has no cure but it is well established that there are so many method like sensory integration therapy, applied behavior analysis, auditory integration and so many has big role to improve the life situations among children with ASD and almost 50% children with ASD can part of mainstream with appropriate and proper intervention as well as among them many have independent ability in daily living activities and can live productively and a little number need support throughout their life as like examples are they may need medical management which are related to epilepsy, hyperactivity, gastrointestinal problems, sleep disturbances, anxiety and depression and to improve clinicians knowledge or skills to identify variety of ASD symptoms as for ensuring proper intervention, establishes conveniences for early diagnosis, to alert and make powerful of parents and managemet for both child and parents and finally aware the social people to be helpful, concerened and caring to the ASD childrens need (Mizanur 2014).

Prevention and effective intervention of autism spectrum disorder is possible by knowing appropriate causative factor such as genetic or environmental as many risk factor are responsible to produce this condition (Ganaie et al., 2014). There is lack of evidence based intervention for children with ASD and the most commonly intervention focus on improving activity of daily living participation, appropriate behavior, communication and social skills as well study mention that early diagnosis and intervention can bring change in some children with ASD (Becerra et al. 2017) .

Proper learning development of the children with disabilities actually depend upon to meaningful involvement in activities which is more important for them as well as childs present and future overall quality of life faciliated through social engagement and they should be encouraged for this social inclusion as much as possible (Tonkin et al., 2014). About 37% children and youth with disabilities never took part in communities structured activity and as compared only 10% ASD children develop peers relationship according to a study conducted on participation between children with and without disability in Canada (Bedell et al., 2013).

Children with disability either acquired or congenital are familiar in many functional and structural problem, few numbers of activities and in society their participation is restricted as well as their function predisposed by contextual positive or negative effect

and in case of these they need medical and rehabilitation management whether any rehabilitation intervention is complex while dealing with children and one of the main goal of rehabilitation is restore function (Martinuzzi et al., 2010).

Day by day the prevalence of ASD are growing and there is differences in prevalence rate with no obvious evidence as a recent survey of 8 year children in United States estimates ASD prevalence is to be as high 1 in 68 whereas the global prevalence of ASD slightly lower rate of 62/10000 (Yu et al., 2017). A report of World Health Organization (WHO) identify that increase awareness, change in diagnosis concepts and service availability has effect prevalence estimate which are based on epidemiological studies from low and middle income countries (World Health Organization, 2013) .

In Bangladesh yet no national epidemiological study on ASD but near about 10.5 lakhs are suffering from autism as well as in 2001 only 12 children attended in the Centre for Child Development and Autism at Bangabandhu Sheikh Mujib Medical University but in 2009 this number increased to 105 according to probable prevalence due to may increase awareness among parents as well as increase the ability among paediatricians to make appropriate diagnosis (Mizanur, 2010).

More participation is better but there are some factor those has impact on ASD child's participation level such as autism severity, social competence, sensory responsivity, communication and behavior behavior (Simpson et al., 2018). Research mentioned that 6-17 years children with ASD less involved in out of school activity, community activity as well as other organized activity (Sood et al., 2014). Another research found 3-6 years children with ASD are participate smaller number activity than typical children (Lavesser and Berg, 2011). Study found that 87% of children with ASD have sensory processing challenges (Lane et al. 2010). Children with ASD cannot able to do their daily living activities due to having difficulty in sensory stimulus processing and integrating, so that they keeps themselves away from society (Schaaf et al., 2013). Research find out that presence of sensory processing differences limited child's participation in daily living skills, leisure, social and academic activities, and sensory processing differences are associated to maladaptive behavior for children with ASD with consequent effect on participation (Pfeiffer et al., 2018). Sensory processing response and sensory feature of

the environment has impact on participation either positive or negative (Reynolds et al., 2011). Presence of sensory symptoms could be understood through child's behavioral response to the environment which can be classified into three patterns such as hyperresponsiveness describe as overreaction to the sensory environment, hyposensitiveness describe as under reaction to the sensory environment and sensory seeking describe as repetitive touching of the object (McCormick et al., 2016). Hypersensitive response mention lower neurological threshold for sensory stimuli that means for a behavioral response less intense stimulus need, in contrast hyposensitive response indicates higher neurological threshold for sensory stimuli that means for a behavioral response more intense need but when threshold are excessive of this range that time response in a way that hamper their activity of daily livings (Pfeiffer et al., 2017). Another research mention that among children with ASD sensory feature gives four pattern of response, sensitive or avoidant response toward sensory stimuli address as hyperresponsiveness, lack or delayed response address hyposensitiveness, superior awareness regarding sensory stimuli and sensory interest address as enhance perception repetitions and seeking behavior address craving of sensory stimulation (Little et al., 2015). Evidence state that many children with ASD can not response appropriately regarding sensory stimuli as they have sensory processing problem and they are under in hyper reactivity to hyporeactivity, about 70-90% children with ASD demonstrate inappropriate response to sensory stimuli that comes from environment (Pfeiffer et al., 2018).

LaVesser and Berg (2011) found that children with ASD 3-6 years participate in fewer activities than typical children and identified some factor that may responsible for lower participation such as having tantrums, unable to follow directions, poor interest and sensory issue. Another study found that social, motor and sensory deficit limit participation as well as restriction has also worsen impact on participation and poor social skills can be overcome through play interaction and participate in functional or symbolic play (Reynolds et al., 2011). Research showed in social, home chores and school activities children with ASD has less participation rather than children without ASD and a child's participation is influenced by environment and based on the environment participation is different (Pfeiffer et al., 2018).

Among too many barrier of participation study mention that yet no access to, lack of availability of program, information, services, unknow resources and policies are listed, as more participation can identify the barrier or factor that can keep away to participate in activiteies but over the years children participation is increasing (Tonkin 2014).

Research identify that there is limitations among children and youth with physical, cognitive and intellectual disabilities to participate in home, school and community environment and according to International Classification of Functioning, Disability and Health (ICF) childs participation decrease when there is lack of able-bodied exist between childs functioning as bring disability as well as the level of participation is influence by both personal and environmental contextual factor (Coster et al., 2011). International Classification of Functioning, Disability and Health (ICF) describe health condition as body function and structures, activities and participations, both are interlinked by contextual factors as well as ICF provide a common platform for rehabilitation professionals who are giving care for health condition that is characterized by problem in many area which has affect on functioning and need management in many aspect such as medical to psychosocial or education to housing (Martinuzzi et al,2010).

Environmental component facilate children and youth's participation in functional task and envirionment is work as mediator to successful participation and to a successful particiapation they have to interlinked with environment as this motivated feelings of happiness, pleasure, liberty and recognition, furthermore children identified that they need to negotiate with environmental hinder which create anger, fear or annoyance and they also identify that environment has big role to disable them rather their own disability as well as parents also mention that larger perceived hinder were in the natural and built envirionment (Tonkin et al., 2014).

The social environment has big influence on participation as study showed that about 43.3% adolescents with ASD never make friends, 54.4 % never knocked by friends and 50.4% are never invite to engage in activities compared than all other groups with adolescents (Shattuck et al., 2011). There are some factor identified which has impact on successful participation such as bulling, stigma, policis, the non use of sign language, unnecessary supports from adults, time pressure, restricted information for parents, lack

of consultation, poor assistant for caregiver, community program design and cost associated with sports leisure facilities (Tonkin et al., 2014).

Study mention that parents identify participation in home activities are mainly affected by the sensory features of the environments or activity and this is assess through participation and Sensory Environment Questionnaire (P-SEQ)- Home Scales which state that internal consistency is very high which is 0.96 and overall P-SEQ used to assess the impact of sensory environment on participation of young children within activities at home and community environment (Pfeiffer et al. 2017).

3.1 Study Design

Descriptive cross sectional study design was selected to conduct this study to fulfill the aim and objective of the study. The cross sectional design is the best suited method for presenting a situation or provide a snapshot over a short period of time (Creswell, 2014). Using this study design the researcher collects information about status of activity participation among CWA at home and community who come in CRP for Rehabilitation services. The researcher has chosen this design as a means of using large numbers of participant and then collecting data accurately. Data will collect only once from each participant by using structured survey questionnaire.

3.2 Study Population

The study population included all the children who are diagnosed with Autism Spectrum Disorder in Bangladesh by a paedritician or a Multidisciplinary Team.

3.3 Study Site

The Centre for the Rehabilitation of the Paralysed (CRP)

Researcher has interest to do research in fully rehabilitation organization based. In case of this CRP is the best suited as paediatric unit of CRP along with branches are providing service to children with disability as well as children with ASD. Another aspect is that from both urban and rural area patients come to CRP. Data collector was assigned each sub-centre of CRP with proper guideline for data collection.

CRP is one of the renowned and well established national government organizations in Bangladesh that serves and rehabilitates people with disabilities. CRP's has started in 1979 and working for person with disability to fulfill their need. CRP address holistic approach and community reintegration process during providing rehabilitation to any person with disability. CRP's vision is "To ensure the inclusion of girls and boys, women and men with disabilities into mainstream society". This organization provided medical and therapeutic interventions; rehabilitation and providing support services such as physical, emotional, social, psychological and economical. One of the most important intentions of CRP is to develop skilled health care personnel and establishes standard of

rehabilitation services. CRP has developed centres in different parts of the country to expand the services for disabled people. CRP-Savar is the head office for the Centre for the Rehabilitation of the Paralysed (CRP) and the branches include: CRP-Mirpur, CRP-Ganakbari, A. K. Khan-CRP Chittagong, Afsar Hussain-CRP Rajshahi, CRP-Barisal, CRP-Gobindapur, CRP-Moulvibazar, CRP-Sylet, and CRP-Manikganj. CRP mainly work for promoting empowerment among person with disability and this is possible by facilitating community base program, advocacy and networking for disability related and facilitated especially girl and women with disability beside these CRP contributed to increase awareness about disability in nationally and globally (Centre for the Rehabilitation of the Paralysed, 2019).

3.4 Study Period

The study has conducted from July 2018-April 2019, including data collection, data analysis and report write up.

3.5 Sample Size

Obtained Sample Size 104 due to availability of data on that estimated time.

3.6 Inclusion Criteria

Children with ASD between 4-10 years of chronological age.

Both girl and boy are included.

Children with ASD who has the opportunity to attend both home and community life together.

Full time caregiver of Children with ASD.

3.7 Exclusion Criteria

Parents who are not willing to participate.

ASD children with presence of other disease or unstable medical condition.

3.8 Sampling Technique

Data was collected from Children with ASD who came to CRP with in the estimate study time. Resource limitation is another factor to get bigger sample size and time limitation is also considerable issue as one of the purpose of this research is to fulfill the academic requirement. The participant has select on basis on inclusion criteria as to find out the actual snapshot of the situation.

3.9 Data Collection Tools

Socio demographic profile sheet: This questionnaire developed by the researcher and includes items related to the personal characteristics such as age, sex, occupation, living area etc.

Participation and Sensory Environment Questionnaire (P-SEQ): A researcher team constructs the Participation and Sensory Environment Questionnaire (P-SEQ) with intention to help the clinical professional to develop appropriate intervention plan and through this parents can state how their child responds towards the sensory environment that has impact in daily living participation at home and community. Firstly this tool used for children with ASD and further study need to use this tool for children without ASD. This scale has two parts such as home and community that filled up by caregivers or parents. Each section of this scale addresses the impact of sensory environment or sensory feature of the activity on participation as well as perceived importance of the activity and ranks the helpful strategies for their child's participation. At first suggested to use this tool ages 3 to 7 years old child but is suggested for use up to 10 years of age children (Participation and Sensory Environment Questionnaire and Parent Effort Scale, 2017). One study results identified excellent internal consistency ($\alpha = 0.96$), moderate test-retest reliability ($r = .62$), and reasonable item distribution regarding P-SEQ- Home Scales (Pfeiffer et al., 2018). Linguistic validation and pilot study was done of P-SEQ before final data collection.

Caregiver completed the Participation and Sensory Environment Questionnaire (P-SEQ) for Children with Autism. The P-SEQ is a caregiver report that identifies child's responses (hypersensitivity or sensory seeking) to the sensory feature of the environment or activity impact on participation in 15 activities that take place at home and 19 activities that take place at community. Caregivers are asked to rate the impact of participation at home and community following a 5-point scale (from none = 1 to too much to participate = 5). Caregivers also identified importance of participation at home (15 activities) and community (19 activities) following 3-point scale (from Not important = 1 to very important = 3). Caregivers are asked to rank up to three strategies that help child

participate in home and community activities following 1=most helpful to 3= 3rd most helpful rank.

3.10 Data Analysis Plan

All data has checked edited and computed and analyze using the SPSS software (version 22) using descriptive and analytical methods. Before conducting all the research data analyses, firstly investigated the missing values of the data and findings stated that missing values were of very minimal concern for the current data. Overall, there were noticed very few missing values and no patterns of missing values were observed. Descriptive analyses were completed to examine basic demographic characteristics of the sample. Result has presented in Frequency Tables and Bar chart. Moreover for the data analysis supports was taken from statistical expert and presented based of objective which has selected earlier.

3.11 Quality Control and Quality Assurance

For quality control and assurance measures was as follows:

Regular help and guidance from the supervisor was taken before conducting interview.

Data collection was done by the researcher herself and assigned data collector person with and analyses the data with the help of interpreters that translated the English questionnaire into Bengali.

Data has checked and rechecked for reliability.

For data collection pretested questionnaire was prepared.

For easy understanding the questionnaire was translated into Bengal.

3.12 Ethical Consideration

The research proposal was submitted to the Institutional Review Board of BHPI and approval was obtained from the board. Bangladesh Medical Research Council (BMRC) and World Health Organization (WHO) guideline also followed to conduct this study. Permission from authority of CRP has obtained, then written consent obtained from the care givers of the child under study and confidentiality of the information given by the

respondent was maintained. Respondents were given rights to refuse withdrawn from the study, any time they wish.

This study included survey responses from caregivers whose children with ASD ages 4-10 years. A total of 104 participants completed the P-SEQ scales. Diagnoses of ASD were reported by caregiver as well as checked professional documentation of a diagnosis. Caregiver average age was 33.60 years old (mean 33.60). 69.2%, of the participants identified themselves as the child's mother and 66.3% were housewife and 26.9% are service holder. More than 49% has completed graduation among the caregivers. 76% participants were from urban community and 49% identified as middle income family. For the children demographic, the average age was 6 years old (mean 6.051) with 76.9% boy and 23.1% girl. 53.8% children with ASD are going to school (Table 1).

Table 1 Child and Caregiver Sociodemographic Characteristics

Demographic variables	ASD (n=104) n,%
Caregiver age	
21-30	42(40.4)
31-40	46(44.2)
41-50	13(12.6)
51-60	3(3)
Caregiver employment status	
House Wife	69(66.3)
Service Holder	28(26.9)
Business	5(4.8)
Others	2(1.9)
Caregiver relation to child	
Fathers	28(26.9)
Mother	72(69.2)
Others	4(3.8)
Caregiver education level	
Primary or less	8(7.7)
Higher Sceondary or less	43(41.4)
Graduation and above	51(49)
Others	2(2)
Residential Community	
Urban	79(76)

Semiurban	12(11.5)
Rural	13(12.5)
Family monthly Income	
Top Income(BDT 58,106)	38(36.5)
Middle Income (BDT 18,404)	51(49)
Bottom Income(BDT 8,342)	15(14.4)
Child Age	
4-5	31(29.8)
5-6	35(33.8)
6-7	24(23.1)
Above 7 up to 10	14(13.5)
Child gender	
Boy	80(76.9)
Girl	24(23.1)
Child School status	
Going	56(53.8)
Not going	48(46.2)

Only 7.7% and 8.7% CWA has impaired vision and hearing. The majority of children with ASD have impaired speech (49%). Most of the ASD child has hyper responsive behavior (84.6%).Among Children with ASD hyper sensitive and sensory seeking response 38.5% and 61.5% respectively (Table 2).

Table 2 Child's Characteristic

Severity of senses	n (%)
Child Vision	
Able	96(92.3)
Impaired	8(7.7)
Child Hearing	
Able	92(88.5)
Impaired	9(8.7)
Not Able	3(2.9)
Child Speech	
Able	16(15.4)
Impaired	51(49.0)
Not Able	37(35.6)
Child Sensory response	
Hyper sensitive	40(38.5)
Sensory seeking	64(61.5)

Sensory Features of the Environment or Activity Impact on Participation at Home:

There were 15 activities mentioned under home activities. Caregiver identified child's responses (hypersensitivity or sensory seeking) to the sensory features of the environment or activity impact on participation in the mentioning activities that take place at home. The activities were Dressing (excluding shoes, socks and coat), putting on socks and shoes, Putting on coat by self or by another, Tooth brushing, Bathing (excluding washing hair), Washing hair, Brushing hair (combing, fixing, putting hair in ponytail holder), Cutting fingernails and toenails, Toileting (Diaper changes or going to the bathroom on the toilet), Falling Asleep, staying asleep or sleeping through the night, Eating, Mealtime with family members, Play with siblings or other children in the home and Play with toys. Different responses are identified according to the task. Both hypersensitive and sensory seeking response of child caregiver mentioned a lot of impact on participation at home activities. In case of hypersensitive response the percentages of impact were Dressing (excluding shoes, socks and coat) , putting on socks and shoes , tooth brushing , meal time with family members and play with toys accordingly 35.00% , Falling asleep and play with siblings or other children in the home accordingly 37.50%. In case of sensory seeking response child caregiver also mentioned a lot of impact toward activity participation at home. Dressing (excluding shoes, socks and coat) and bathing (excluding washing hair) (35.90%), toileting (Diaper changes or going to the bathroom on the toilet) (37.50%), falling asleep (39.10%) and tooth brushing (43.80%) (Table 3).

Table 3 Sensory Features of the Environment or Activity Impact on Participation at Home Activities

Task	Child' Responses n%									
	Hypersensitive					Sensory Seeking				
	None	A little	Some	A lot	Too much	None	A little	Some	A lot	Too much
Dressing (excluding shoes,socks and coat)	22.50	19.00	22.50	35.00	1.00	26.60	20.30	15.60	35.90	1.60
putting on socks and shoes	22.50	20.00	22.50	35.00	0.00	23.40	28.10	26.60	20.30	1.60
Putting on coat by self or by another	27.50	20.00	22.50	30.00	0.00	20.30	32.80	21.90	23.40	1.60
Tooth brushing	22.50	25.00	15.00	35.00	2.50	14.10	21.90	12.50	43.80	7.80
Bathing (excluding washing hair)	30.00	27.00	10.00	30.50	2.50	26.60	25.00	9.40	35.90	3.10
Washing hair	30.00	27.50	12.50	22.50	5.00	28.10	29.70	12.50	23.40	4.70
Brushing hair (combing, fixing, putting hair in ponytail holder)	32.50	22.50	17.50	22.50	5.00	15.60	31.30	23.40	28.10	1.60
Cutting fingernails and toenails	25.00	27.50	10.00	27.50	10.00	17.20	31.30	20.30	25.00	6.30
Toileting (Diaper changes or going to the bathroom on the toilet)	27.50	27.50	20.00	22.50	2.50	15.60	20.30	21.90	37.50	4.70
Falling Asleep	17.50	27.50	15.00	37.50	2.50	15.60	21.90	23.40	39.10	0.00
Staying asleep or sleeping through the night	17.50	27.50	17.50	32.50	5.00	18.80	32.80	25.00	21.90	1.60
Eating	20.00	22.50	17.50	32.50	7.50	9.40	28.10	29.70	28.10	4.70
Mealtime with family members	20.00	25.05	17.50	35.00	2.50	10.90	26.60	21.90	37.50	3.10
Play with siblings or other children in the home	17.50	17.50	20.00	37.50	7.50	15.60	20.30	23.40	35.90	4.70
Play with toys	22.50	17.50	17.50	35.00	7.50	14.10	34.40	18.80	28.10	4.70

Sensory Features of the Environment or Activity Impact on Participation at Community:

There are 19 activities mentioned under community activities. Caregiver identified child's responses (hypersensitivity or sensory seeking) to the sensory features of the environment or activity impact on participation in the mentioning activities that take place at community. The activities are Family Parties at Another's Home, Parties for Another Child in the Community, Eating at a Restaurant, Meals at Family or Friend's Home, Movies/Theaters, Religious Service, Event, or Education ,Library Activities ,Dental Appointments and Procedures, Doctor Appointments and Procedures, Vacations ,Play at the Playground/Park, play with other children outside of home and school, Sporting Event of Another, Sporting Event of the Child, Swimming, Amusement Park/Water Park, Using a Public Bathroom, Community Events and Taking Public Transportation. Caregiver mentioned a lot and too much impact toward activity participation in community following hypersensitive and sensory seeking response of the child to the sensory feature of environment or activity. Too much impact has identified on Library Activities and Sporting Event of Another (35.0%), Sporting Event of the Child, Swimming and Movies/Theaters (32.50%), Religious Service, Event, or Education, Dental Appointments and Procedures and Using a Public Bathroom (30.00%). A lot of impact identified on Family Parties at Another's Home (40.60%), play with other children outside of home and school (40%), Religious Service, Event, or Education, Play at the Playground/Park and Sporting Event of Another (35.90%) (Table 4).

Table 4 Sensory Features of the Environment or Activity Impact on Participation at Community Activities

Task	Child's Responses									
	Hypersensitive n%					Sensory Seeking n%				
	None	A little	Some	A lot	Too much	None	A little	Some	A lot	Too much
Family Parties at Another's Home	25.00	12.50	30.00	25.00	7.50	6.30	20.30	25.00	40.60	7.80
Parties for Another Child in the Community	20.00	20.00	27.00	25.00	7.50	9.40	15.60	29.70	37.50	7.80
Eating at a Restaurant	22.50	17.50	20.00	25.00	15.00	10.90	21.90	18.80	31.30	17.20
Meals at Family or Friend's Home	22.50	12.50	32.50	17.50	15.50	7.80	17.20	26.60	34.40	14.10
Movies/Theaters	17.50	22.50	15.00	12.50	32.50	18.80	14.10	18.80	26.60	21.90
Religious Service, Event, or Education	17.50	20.00	12.50	20.00	30.00	7.80	17.20	10.90	35.90	28.20
Library Activities	15.00	22.50	15.00	12.50	35.00	6.30	18.80	7.80	26.60	40.60
Dental Appointments and Procedures	12.50	15.00	17.50	25.00	30.00	9.40	17.20	14.10	17.20	42.20
Doctor Appointments and Procedures	7.50	17.50	22.50	45.00	7.50	4.70	17.20	29.70	34.40	14.10
Vacations	10.00	12.50	25.00	25.00	27.50	9.40	23.40	23.40	23.40	20.30
Play at the Playground/Park	10.00	15.00	32.50	22.50	20.00	20.30	15.60	17.20	35.90	10.90
play with other children outside of home and school	7.50	20.00	20.00	30.00	0.00	9.40	17.20	20.30	40.00	1.60
Sporting Event of Another	5.00	25.00	20.00	15.00	35.00	4.70	9.40	18.80	35.90	29.70
Sporting Event of the Child	7.50	17.50	20.00	22.50	32.50	9.40	14.10	9.40	32.80	34.40
Swimming	12.50	12.50	25.00	17.50	32.50	10.90	9.40	7.80	26.60	45.30
Amusement Park/Water Park	12.50	27.50	17.50	20.00	22.50	6.30	15.60	12.50	34.40	31.30
Using a Public Bathroom	17.50	17.50	20.00	15.00	30.00	10.90	15.60	12.50	32.80	28.10
Community Events	10.00	17.50	20.00	27.50	25.00	7.80	18.80	12.50	32.80	27.20
Taking Public Transportation	10.00	22.50	22.50	30.00	15.00	18.80	18.80	10.90	31.30	20.20

Almost all caregivers mentioned that daily living self-care and play activities are very important. Most of the caregivers mentioned that among 15 activities participation in eating (99%), tooth brushing (94.20%), Toileting (93.30%), Dressing (89.40%) and Bathing (89.40%) are very important. Mealtime with family members and play with siblings or other children in the home are 88.50% and 86.50% respectively. Moreover other activities of daily living are also very important (Table 5).

Table 5 Importance of the Activity Participation at Home

Task	Not Important	Moderately Important n%	Very Important
Dressing (excluding shoes, socks and coat)	1.00	9.60	89.40
putting on socks and shoes	1.00	18.50	80.50
Putting on coat by self or by another	3.80	18.30	77.90
Tooth brushing	1.90	3.80	94.20
Bathing (excluding washing hair)	1.00	9.60	89.40
Washing hair	2.90	12.50	84.60
Brushing hair (combing, fixing, putting hair in ponytail holder)	4.80	10.60	84.60
Cutting fingernails and toenails	2.50	12.00	85.50
Toileting (Diaper changes or going to the bathroom on the toilet)	0	6.70	93.30
Falling Asleep	2.90	18.30	78.80
Staying asleep or sleeping through the night	2.90	16.30	80.80
Eating	0	1	99
Mealtime with family members	2.90	8.70	88.50
Play with siblings or other children in the home	2.90	10.60	86.50
Play with toys	3.80	14.40	81.70

Caregiver mentioned about importance of activity participation in community. According to caregiver statement Meals at family or friends' home (80.30%), school (78.80%), play at the playground/park (75.00%), community events (72.10%) and religious service, events or education (72.00%) are very important. Furthermore all activity participation at community is very important (Table 6).

Table 6 Importance of the Activity Participation at Community

Task	Not	Moderate	Very
	Importan t	Importan t	Importan t
		n%	
Family Parties at Another's Home	1.90	26.00	72.10
Parties for Another Child in the Community	3.80	27.90	68.30
Eating at a Restaurant	4.80	39.40	55.80
Meals at Family or Friend's Home	2.90	16.80	80.30
Movies/Theaters	18.30	29.80	51.90
Religious Service, Event, or Education	4.80	23.20	72.00
Library Activities	9.60	34.60	55.80
Dental Appointments and Procedures	9.60	28.80	61.50
Doctor Appointments and Procedures	9.70	23.10	70.20
Vacations	3.80	27.90	68.30
Play at the Playground/Park	3.80	21.20	75.00
play with other children outside of home and school	1.00	20.20	78.80
Sporting Event of Another	7.70	28.80	63.50
Sporting Event of the Child	7.70	36.50	55.80
Swimming	9.60	32.70	57.70
Amusement Park/Water Park	4.80	24.00	71.20
Using a Public Bathroom	7.70	29.80	62.50
Community Events	6.70	21.20	72.10
Taking Public Transportation	4.80	24.00	71.20

Strategy those Help the Children Participation at Home

Caregiver were asked to rank up to three strategies among six strategies that help to participate in home and community activities and rank it accordingly (most helpful, 2nd most helpful and 3rd most helpful).The six strategies are accordingly Keeping or developing routines, Presence of certain sensory features in the activity, Child having control of the situation, Preparing and planning for participation in the activity, changing the sensory feature of activity and use of sensory strategies during the activity. In this study total children with autism 104.It was found that children with ASD with hypersensitive 40 (38.5%) and sensory seeking 64 (61.5%) responses.

Keeping or developing routines is the most helpful for children with ASD who has sensory seeking response and hypersensitive response of children with ASD. In case of keeping or developing routines strategy is helpful for their children with sensory seeking response, caregiver state that 76.9% participants identify as most helpful strategy for their child and other 20.5% participants identify as 2nd most helpful strategy and 2.6% participant identify as 3rd most helpful strategy for their child . Regarding keeping or developing routines strategy is helpful for their children with hypersensitive response caregiver responded as among 77.3 % participants identify as most helpful strategy for their child and other 18.2% participants identify as 2nd most helpful strategy and 4.5% participants identify as 3rd most helpful strategy for their child (Figure 1).

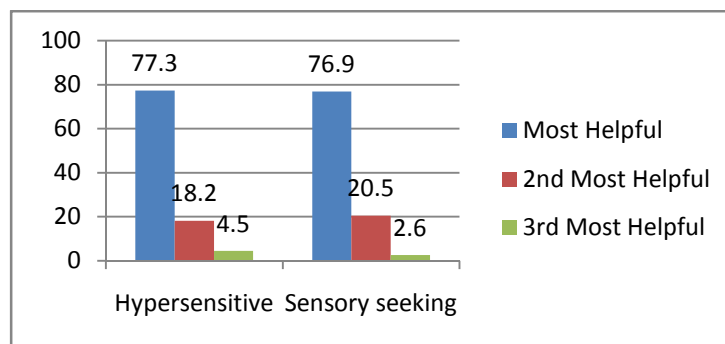


Figure 1 Keeping or developing routines

Presence of certain sensory features in the activity strategy is helpful for their children with sensory seeking response, 38.6% participants identify as most helpful strategy for their child and other 38.6% participants identify as 2nd most helpful strategy and 22% participants identify as 3rd most helpful strategy for their child and children with hypersensitive response, 33.3% participants identify as most helpful strategy for their child and other 46.7% participants identify as 2nd most helpful strategy and 4.6% participants identify as 3rd most helpful strategy for their child (Figure 2).

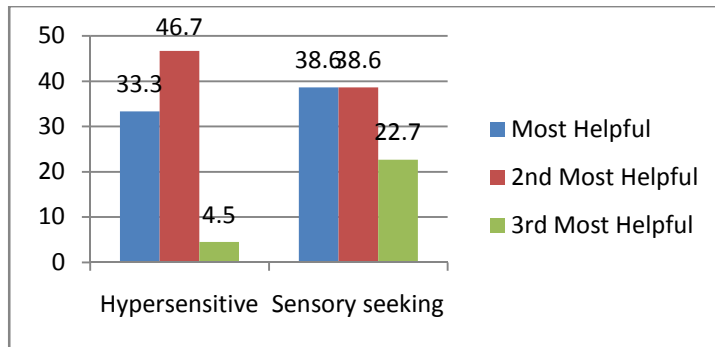


Figure 2 Presence of certain sensory features in the activity

Child having control of the situation strategy is helpful for their children with sensory seeking response, 18.5% participants identify as most helpful strategy for their child and other 37% participants identify as 2nd most helpful strategy and 44.5% participants identify as 3rd most helpful strategy for their child. Child having control of the situation strategy is helpful for their children with hypersensitive response, 11.1% participants identify as most helpful strategy for their child and other 50% participants identify as 2nd most helpful strategy and 38.9% participant identify as 3rd most helpful strategy for their child (Figure 3).

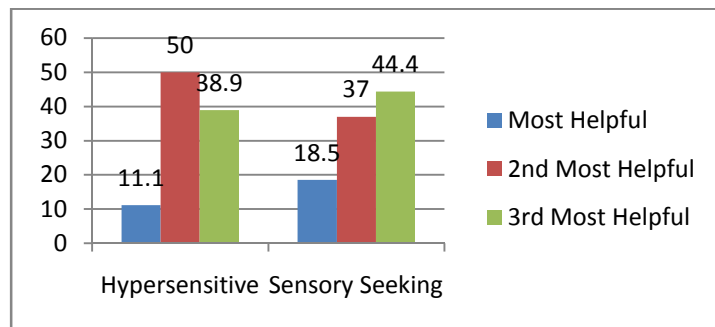


Figure 3 Child having control of the situation

Preparing and planning for participation in the activity strategy is helpful for their children with sensory seeking response, 18.8% participants identify as most helpful strategy for their child and other 41.7% participants identify as 2nd most helpful strategy and 39.6% participants identify as 3rd most helpful strategy for their child and for children with hypersensitive response, 29.6% participants identify as most helpful strategy and 2nd most helpful strategy and 40.7% participants identify as 3rd most helpful strategy for their child (Figure 4).

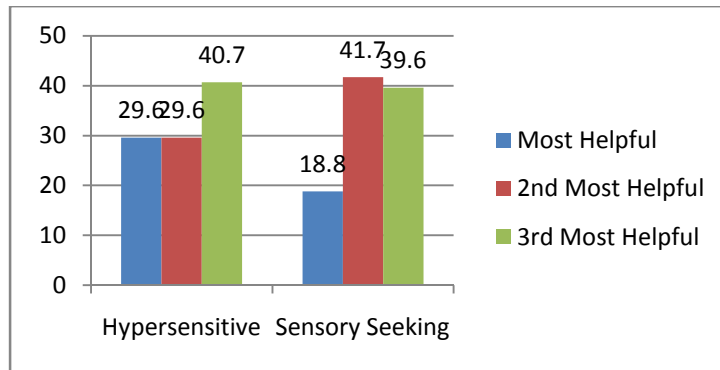


Figure 4 Preparing and planning for participation in the activity

Changing the sensory feature of activity is helpful for their children with sensory seeking feature, 7.1% participants identify as most helpful strategy for their child and other 42.9% participants identify as 2nd most helpful strategy and 50% participants identify as 3rd most helpful strategy for their child. 42.9% participants identify keeping or developing routines strategy is most helpful strategy for their child and other 28.6% participants identify as 2nd most helpful strategy and 28.5% participant identify as 3rd most helpful strategy for their child (Figure 5)..

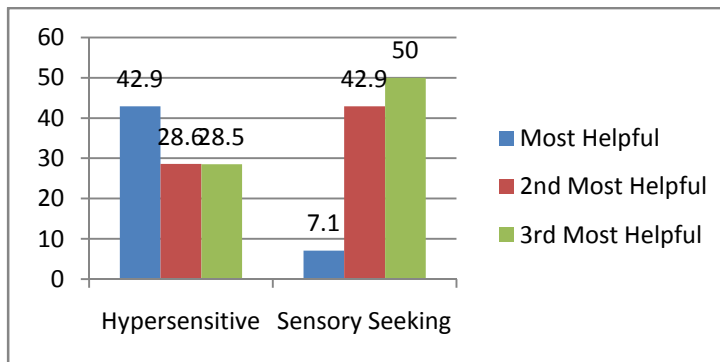


Figure 5 changing the sensory feature of activity

Use of sensory strategies during the activity is the most helpful for children with ASD who has hypersensitive response rather sensory seeking response. Use of sensory strategies during the activity strategy is helpful for their children with sensory seeking response, 18.2% participants identify as most helpful strategy for their child and other 13.6% participants identify as 2nd most helpful strategy and 68.2% participant identify as 3rd most helpful strategy for their child . 75% participants mentioned use of sensory strategies during the activity strategy is helpful most helpful strategy for their child and other 18.8% participants identify as 2nd most helpful strategy and 6.2 participants identify as 3rd most helpful strategy for their child (Figure 6).

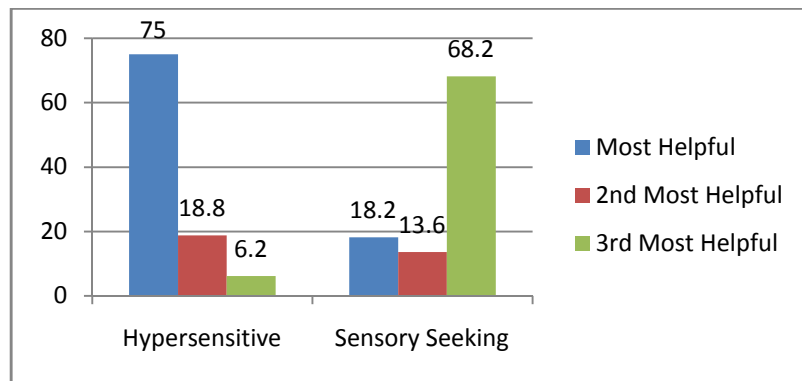


Figure 6 Use of sensory strategies during the activity

Strategy those Help the Children Participation at Community

78.8% participants selected keeping or developing routines strategies for sensory seeking responses which help to do community activity is most helpful for children with ASD who has sensory seeking response. On the other hand 80% participants mentioned this strategy is most helpful for children with ASD who has hypersensitivity response. Keeping or developing routines strategies is more helpful for hypersensitive response child (Figure 7) .

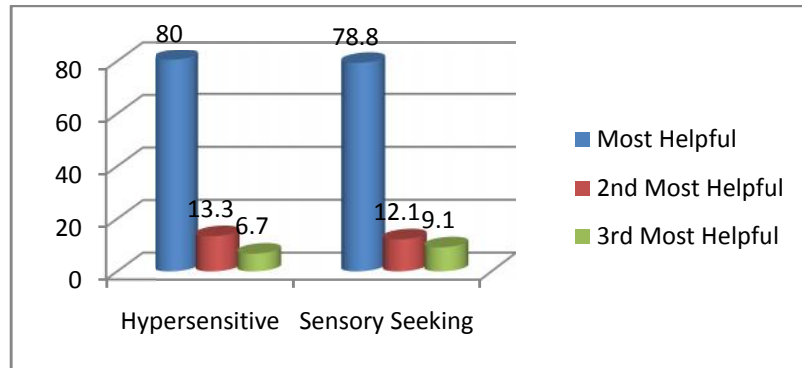


Figure 7 keeping or developing routines

32.6% participants selected Presence of certain sensory features in the activity Strategies for children with ASD with sensory seeking response which help to do community activity is most helpful,58.1% participants mentioned this strategy is 2nd most helpful and 9.3% participants mentioned this strategy is 3rd most helpful for children with ASD who has sensory seeking response. On the other hand 51.9% participants mentioned this strategy is 2nd most helpful for children with ASD who has hypersensitivity response. Presence of certain sensory features in the activity strategies is helpful for hypersensitive response (Figure 8).

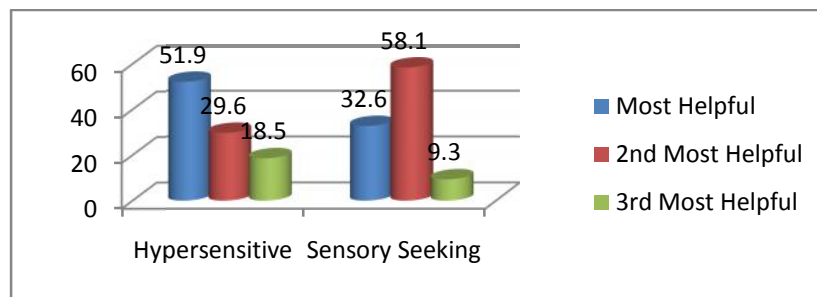


Figure 8 Presence of certain sensory features in the activity

In case of child having control of the situation Strategies for children with ASD with sensory seeking response 36.8% participants mentioned this strategy is 3rd most helpful for children with ASD who has sensory seeking responses On the other hand 54.5% participants mentioned this strategy is 3rd most helpful for children with ASD who has hypersensitivity response. Child having control of the situation strategies is helpful for sensory seeking response (Figure 9).

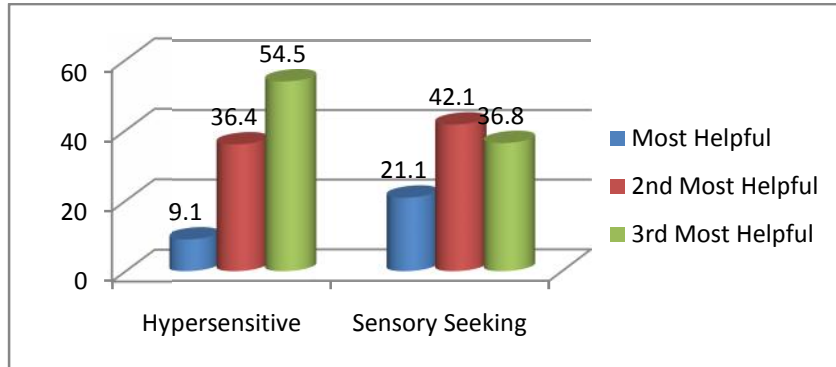


Figure 9 Child having control of the situation

Preparing and planning for participation in the activity Strategies is most helpful for children with ASD who has hypersensitive response. Only 19.1% participants mentioned this strategy is most helpful for children with ASD who has sensory seeking response. On the other hand 43.4% participants mentioned this strategy is most helpful for children with ASD who has hypersensitivity response (Figure 10).

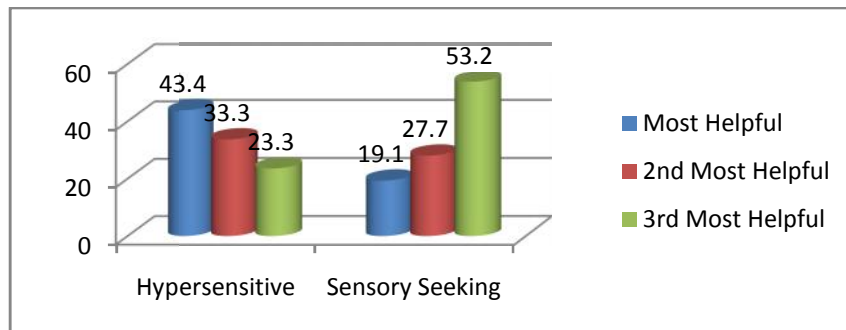


Figure 10 Preparing and planning for participation in the activity

Changing the sensory feature of activity strategies are most helpful for children with ASD with hypersensitive response .33.3% participants mentioned that this strategies are most helpful for hypersensitive children with ASD as well as only 8.7% participants mentioned that this strategies is helpful for sensory seeking children with ASD (Figure 11).

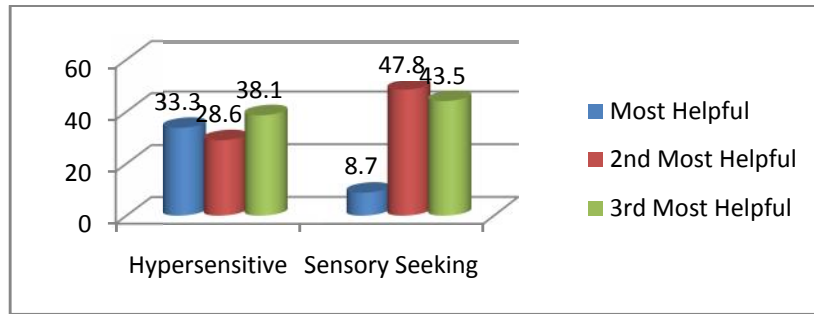


Figure 11 changing the sensory feature of activity

Uses of sensory strategies during the activity strategies are most helpful for children with ASD with hypersensitive response. Large number about 75% participants mentioned that this strategies are most helpful for hypersensitive children with ASD, 34.6% participants mentioned that this strategies is also most helpful for sensory seeking children with ASD (Figure 12).

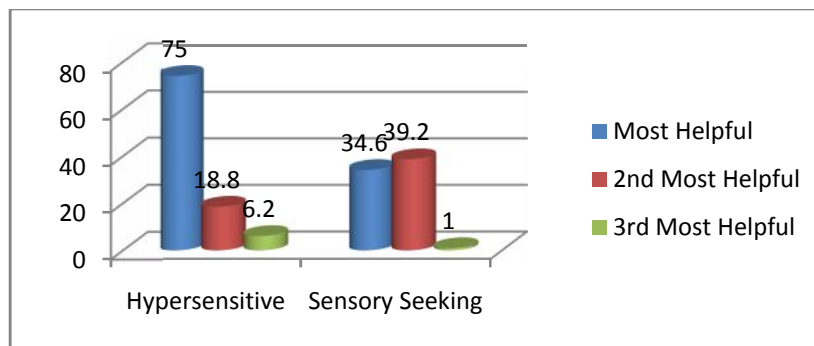


Figure 12 Use of sensory strategies during the activity

Table 7 At a glance of Strategy (S) those Help the Children Participation at Home (H) and Community (C)

Strategy (S)	In-case of Hypersensitive Response						In-case of sensory seeking Response					
	n%		n%		n%		n%		n%		n%	
	Most Helpful	2nd most helpful	3rd most helpful	H	C	H	C	H	C	H	C	H
S.1. Keeping or developing routines	77.3	80	18.2	13.3	4.5	6.7	76.9	78.8	20.5	12.1	2.6	9.1
S.2. Presence of certain sensory features in the activity	33.3	51.9	46.7	29.6	20	18.5	38.6	32.6	38.6	58.1	22.7	9.3
S.3. Child having control of the situation	11.1	9.1	50	36.4	38.9	54.5	18.5	21.1	37	42.1	44.4	36.8
S.4. Preparing and planning for participation in the activity	29.6	43.4	29.6	33.3	40.7	23.3	18.8	19.1	41.7	27.7	39.6	53.2
S.5. Changing the sensory feature of activity	42.9	33.3	28.6	28.6	28.5	38.1	7.1	8.7	42.9	47.8	50	43.5
S.6 Use of sensory strategies during the activity	75	75	18.8	18.8	6.2	6.2	18.2	34.6	13.6	19.2	68.2	46.2

In a summary keeping or developing routines is most helpful strategy for both hypersensitive and sensory response children with ASD during participating in home and community activities. Similarly presence of certain sensory features in the activity is also most helpful strategy for both hypersensitive and sensory response children with ASD. Changing the sensory feature of activity and use of sensory strategies during the activity are helpful for children with hypersensitive response rather children with sensory seeking response.

The result from this study provide a valuable contribution to our understanding about the sensory feature of the environment or activity which has impact towards the participation at home and community, importance of participation of these activity and most appropriate strategy to overcome this problem for the children with ASD aged 4-10 years. Many researches have done following same sociodemographic characteristics of caregiver and children with ASD. In this study caregiver average age 33.60 years old and the Childs average age was 6 years old with 76.9 percent boy and 23.1 percent girl. 76 percent participants were from urban community and 49 percent identified as middle income family. The majority of children with ASD have impaired speech (49 percent). Among Children with ASD hyper sensitive and sensory seeking response 38.5 percent and 61.5 percent respectively. Some characteristic are similar with other study as example caregiver average age, relationship with child, income, gender of children and so on (Simpson et al., 2017). Results of this study indicate that sensory feature of the activity or home environment and community environment has significantly impact on participation. Sensory feature of the environment or activitiy has greater impact on community activity participation rather home activity.Children with ASD shows decreased participation in activities outside of the school setting and participated with less people with fewer environments. Day by day and child to child sensory processing characteristic can vary and response to the sensory environment can be different (Pfeiffer et al. 2018). Body function and body structure one of the most important factors for doing any task (WHO 2001). If any one of this hampered than sensory function also can be impacted as well as participation may also vary day to day. Participation is affected by environment as well as sensory processing differences (Bedell et al. 2011; Faller et al. 2015). One study showed that a P-SEQ home scale has excellent internal consistency and moderate test –retest reliability (Pfeiffer et al. 2018). P-SEQ used as an assessment for children with ASD to see how sensory aspects of the environment or activity impact on participation at home and community settings (Pfeiffer et al. 2018). Appropriate

intervention can be select for children with ASD through identifying and modifying appropriate environmental barrier. According to caregiver sensory feature of the environment or activity has lot of impact in home activities but a lot and too much impact found in community activities. In case of sensory seeking child a lot of impact found on Dressing and Bathing, Toileting, Falling Asleep and Brushing. In case of hypersensitive similarly found a lot of impact on Dressing, Putting on Socks and Shoes, Tooth Brushing, Meal Time with Family Members and Play with Toys, Falling Asleep and Play with Siblings or other Children in the Home accordingly. Too much impact has identified on Library Activities and Sporting Event of Another, Sporting Event of the Child, Swimming and Movies/Theaters, Religious Service, Event, or Education, Dental Appointments and Procedures and Using a Public Bathroom. A lot of impact identified on Family Parties at Another's Home, play with other children outside of home and school , Religious Service, Event, or Education, Play at the Playground/Park and Sporting Event of Another . Caregiver can identify those helpful strategy that increase children with ASD participation (Pfeiffer et al. 2017). Some studies found that among school aged children with ASD sensory sensitivities and sensory seeking is associated with decreased social, school and activity competence (Reynolds et al.2011). Study mention lack of activity participation in the community (e.g. visiting restaurant or parks), caregiver often restrict activities to the home environment due to increased sensory sensitivities (LeVesser and Berg 2011; Schaaf et al., 2011). This study found that sensory feature of the environment has greater impact on community participation rather home participations among children with ASD aged 4-10 years with (sensory seeking and hypersensitivity response). In case of hypersensitive or sensory seeking Caregiver identified both home and community activities are very important for their child. Most of the caregivers mentioned that among 15 activities participation in eating, tooth brushing, Toileting, Dressing and Bathing are very important at home and at community Meals at Family or Friends' home , School, Play at the Playground/Park, Community events and Religious Service, Events or Education are very important. At home and community keeping or developing routine and presence of certain sensory features in the activity both strategies are most helpful for children with ASD with sensory seeking and hyperresponse behavior. But Preparing and plaaning for participation in the activity and

use of sensory strategies during the activity are most important for hyperresponsive ASD children. Study found that sensory integration based and environmental enrichment based approaches help to overcome sensory challenges (Weitlauf et al., 2017).

One study findings mentioned children with ASD with sensory seeking response participated more frequently in home activities rather outdoors. Hyper responsiveness participated more outside the home specially neighborhood- social activities, community activities (Little et al. 2015).

6.1 Conclusion

At present ASD is a high concerning issue in Bangladesh as the government concern on that issue. According to the Disability Act Autism enlisted in the classification of disability. World wide day by day the numbers of children with autism are increasing and in Bangladesh this situation is same. New interventions are introducing for increase their quality of life. Children are facing so many difficulties to participate day to day activity due to so many factors. Caregiver identifies that participation at home and community activity is very impotent for their child. But sensory feature of the environment or activity and sensory response of the child are the major issues that keep away children to participate. Responsible Professionals are trying to address these issues for ensure ASD childrens proper intervention. But in Bangladesh lacking of standard assessment by which parents and professional can identify these barrier. So the result of this study can provide the evidence about children sensory response and sensory feature of the environment or activity which has impact on participation both at home and community. This is used to identify the barrier of sensory environment and amount of impact on participation as well as necessary step can be taken to increase participation at home and community among ASD children.

6.2 Limitations of the Study

During the research work researcher has observed limitation regarding generalizability. Evaluate the children community participation based on their current living area which not represents permanent community environment.

6.2 Recommendations

Despite some limitations, this study contributes an understanding of the status of activity participation among children with ASD at home and community in Bangladesh. Based on

the given limitation of the study here focused on the possible recommendation and further studies regarding the participation of ASD children are incorporate below-

There are also so many factors that may impact on participation of children with ASD. However, this study primarily focused on sensory feature of the environment or activity. Future studies may be focused on identifying other influential factor with its impact on participation of children with ASD as well as other disabling condition.

This study analysis was cross sectional, so that over time the impact of sensory features on home and community activity participation requires further study. Future studies could include observational measure for certain period of time with large sample. This study is one rehabilitation institute based. Further more institute could be add.

Further studies need to investigate difference between the participation and the expectation to identify the overall satisfaction with current level of activity participation among ASD children.

Other top level study can include Rehabilitational professional perspective about impact of sensory on activity participation and combine and compare the findings from both professional and caregiver perspective. By this a standard evidence based guideline could be develop for responsible professional for ensuring proper treatment for children with ASD. Carring out such a study on participation can be possible to generalize at country level.

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APPENDICES

APPENDIX- A: Information Sheet (English)

Information Sheet

I am Khadija Akter Lily, Student of of M.Sc. in Rehabilitation Science course at the Bangladesh Health Professions Institute (BHPI), academic institute of Centre for the Rehabilitation of the Paralysed (CRP) under the Faculty of Medicine of University of Dhaka (DU). This is a 2 year full time course under the project of “Regional Inter-professional Masters Program in Rehabilitation Science” funded by SAARC Development Fund (SDF). In regards to partial fulfillment of requirements for this course, it is obligatory to conduct a research in final year of study. I would like to invite you to take part in this research study, titled “Activity participation among Children with Autism Spectrum Disorder (ASD) at Home and Community”. My research Supervisor is Prof. Md. Obaidul Haque, Vice principal, BHPI. The purpose of the study is to explore the status of activity participation among ASD at home and community. Participation and Sensory Environment Questionnaire (p-SEQ) will be used to collect data.

Your participation in this study is voluntary and it will take maximum 30-45 minutes. If you do not want to participate or withdraw from the study, you may do so at any time. You will not be paid for your participation. Confidentiality of all records will be highly maintained. Gathered data will never be used in such a way that you or your child could be identified in any presentation or publication without your permission.

If you have any question now or later regarding the study, please feel free to ask the person stated below-

Khadija Akter Lily

Student of Masters in Rehabilitation Science

Session-2017-2018

Bangladesh Health Professions Institute (BHPI)

Center for the Rehabilitation of the Paralysed (CRP),

Savar, Dhaka, Bangladesh

APPENDIX- B: Information Sheet (Bengali)

অংশগ্রহণকারীর জন্য গবেষণা বিষয়ক তথ্যসমূহ

আমি খাদিজা আক্তার লিলি, একজন কোয়ালিফাইড অকুপেশনাল থেরাপিস্ট। বর্তমানে আমি রিহ্যাবিলিটেশন সায়েন্সে স্নাতোত্তর পর্যায়ে অধ্যয়ন করছি। এটি সেন্টার ফর দ্যা রিহ্যাবিলিটেশন অব দ্যা প্যারালাইসড (সি.আর.পি.) এর একাডেমিক ইনস্টিটিউট বাংলাদেশ হেলথ প্রফেশনস্ ইনস্টিটিউট (বি.এইচ.পি.আই.) এর দুই বছর মেয়াদী শিক্ষামূলক প্রোগ্রাম যা ঢাকা বিশ্ববিদ্যালয়ের মেডিসিন ফ্যাকালটির অধীনস্থ। ইহা রিজিওনাল ইন্টার প্রোফেশনাল মাস্টারস প্রোগ্রাম ইন রিহ্যাবিলিটেশন সায়েন্স প্রজেক্টের আন্তর্জাতিক একটি প্রোগ্রাম যা সার্ক ডেভেলপমেন্ট ফান্ড দ্বারা পরিচালিত। কোর্সের কার্যক্রমের অংশ হিসেবে শেষ বর্ষে একটি গবেষণা করতে হয়। আমি আপনাকে এই গবেষণায় অংশগ্রহণের জন্য আমন্ত্রণ জানাচ্ছি এবং আমার গবেষণার বিষয়টি হচ্ছে:

“অটিজম স্পেকটাম ডিজঅর্ডারে আক্রান্ত শিশুদের বাড়িতে এবং সমাজে অংশগ্রহণ সংক্রান্ত”

আমার গবেষণার সুপারভাইজর প্রফেসর মোঃ ওবায়দুল হক, ভাইস প্রিন্সিপাল, বি.এইচ.পি.আই.। এই গবেষণার মাধ্যমে অটিজমে আক্রান্ত শিশুদের বাড়িতে এবং সমাজে অংশগ্রহণ সংক্রান্ত তথ্যাবলী জানা যাবে। অংশগ্রহণ এবং পরিবেশগত অনুভূতি প্রশ্নাবলীসমূহ (Participation and Sensory Environment Questionnaire) ব্যবহার করা হবে তথ্য সংগ্রহের জন্য।

আপনি নিজ ইচ্ছায় এই গবেষণায় অংশগ্রহণ করছেন এবং সর্বোচ্চ ৩০-৪৫ মিনিট সময় লাগবে। এই গবেষণা থেকে যে কোন সময় অব্যাহতি পাওয়ার অধিকার আপনি রাখেন। এই গবেষণায় অংশগ্রহণের জন্য আপনাকে কোন টাকা বা উপহার দেওয়া হবে না। এই গবেষণায় আপনার সমস্ত তথ্যের গোপনীয়তা রক্ষা করা হবে। এই গবেষণা আপনার বা আপনার বাচ্চার কোন ক্ষতির কারণ হবে না। যদি এখন আপনার কোন জিজ্ঞাসা থাকে অথবা পরবর্তীতে এই গবেষণা থেকে আপনি কিছু তথ্য জানতে চান তবে নিম্নোক্ত ঠিকানায় যোগাযোগ করবেন:

খাদিজা আক্তার লিলি

ছাত্রী - মাস্টারস প্রোগ্রাম ইন রিহ্যাবিলিটেশন সায়েন্স

সেসন: ২০১৭-১৮

বাংলাদেশ হেলথ প্রফেশনস্ ইনস্টিটিউট (বি.এইচ.পি.আই.)

সেন্টার ফর দ্যা রিহ্যাবিলিটেশন অব দ্যা প্যারালাইসড (সি.আর.পি.)

সাভার, ঢাকা, বাংলাদেশ

APPENDIX- C: Consent Form (English)

Consent Form

To be completed by the:

a. Participant

1. Have you read the information sheet? Yes/No
2. Have you had an opportunity to discuss this study and ask any question? Yes/No
3. Have you had satisfactory answers to all your questions? Yes/No
4. Have you received enough information about the study? Yes/No
5. Do you understand that you are free to withdraw from the study at any time, without having to give a reason and without affecting you and your children? Yes/No
6. Information from interview and questionnaire, those will be collected by the investigator might be examined by other research assistants. However, all personal details will be treated as highly confidential. Do you give your permission for these individuals to have access to your records? Yes/No
7. Have you had sufficient time to come to your decision? Yes/No
8. Do you agree to take part in this study? Yes/No

Participant's signature _____ Date _____
Name (BLOCK LETTERS) _____

b. Investigator

I have explained the study to the above participant precisely and he/she has indicated her willingness to take part in the study.

Investigator's signature _____ Date _____
Name (BLOCK LETTERS) _____

APPENDIX- D: Consent Form (Bengali)

সম্মতি পত্র

১. অংশগ্রহণকারী কতৃক পূরনীয় (হ্যাঁ / না তে টিক দিন):

১. আপনি কি গবেষণা বিষয় তথ্য পত্রটি পড়েছেন?	হ্যাঁ / না
২. এই গবেষণা নিয়ে কোন আলোচনা বা প্রশ্ন করার সুযোগ কি আপনি পেয়েছেন?	হ্যাঁ / না
৩. আপনি আপনার সকল প্রশ্নের কি সন্তোষজনক উত্তর পেয়েছেন?	হ্যাঁ / না
৪. এই গবেষণা সম্পর্কে আপনি কি পর্যাপ্ত তথ্য পেয়েছেন?	হ্যাঁ / না
৫. আপনি কি বুঝতে পেরেছেন কোন কারণ না দেখিয়েও এই গবেষণা থেকে যে কোন সময় অব্যাহতি পাওয়ার অধিকার আপনি রাখেন?	হ্যাঁ / না
৬. আপনার কাছ থেকে যে গবেষণা তথ্য পাবেন, তা অন্য গবেষক সহায়তাকরীর সাহায্যে বিশ্লেষণ করা হবে। এ ক্ষেত্রে আপনার ব্যক্তিগত সমস্ত তথ্যের গোপনীয়তা রক্ষা করা হবে। আপনি কি তা জেনে অনুমতি দিয়েছেন?	হ্যাঁ / না
৭. আপনি কি আপনার সিদ্ধান্ত নেওয়ার জন্য পর্যাপ্ত সময় পেয়েছেন?	হ্যাঁ / না
৮. আপনি কি এই গবেষণায় অংশগ্রহণ করতে রাজি আছেন?	হ্যাঁ / না

অংশগ্রহণকারীর নাম :

অংশগ্রহণকারীর স্বাক্ষর (তারিখসহ) :

২. গবেষক কতৃক পূরনীয়

আমি উপরিউক্ত অংশগ্রহণকারীর সাথে আমার গবেষণা নিয়ে ব্যাখ্যা করেছি এবং তিনি নিজ ইচ্ছায় এই গবেষণায় অংশগ্রহণ করছেন,

গবেষকের নাম :

গবেষকের স্বাক্ষর (তারিখসহ) :

APPENDIX-E: Questionnaire (English)
Demographic Information

Code:

Date:

Respondent name:

Age:

Profession:

Relation with Autism Children: 1.Father 2. Mother 3.Others

Educational Background: 1. Informal education 2. Less than Primary 3. Primary 4. Less than secondary 5. Secondary completed 6. Higher secondary completed 6. Graduation completed 8. Above graduation 9. Others

Address:

Type of living community: 1. Urban 2. Semi-urban/small town 3. Rural 4. Other

Family Monthly income (BDT):

1. At least 58,106 (Top income group)
2. At least 18,404 (Middle income group)
3. At least 8342 (Bottom income group)

How many adults are in your house hold (including you):

Number of sibling:

Autism children Information:

Name:

Age:

Date of Birth:

Gender: 1.male 2.Female

Does child go to school: 1.yes/ 2.No

Name of school:

Grade:

Does child receive medical care: 1.Medicine 2. Therapy 3.Assistive device 4.No

Hearing: 1.Able 2.impaired 3.Not able

Vision: 1.Able 2.impaired 3.Not able

Speech: 1.Able 2.impaired 3.Not able

Behaviour: 1. Normal 2.Hyper response 3.hyporesponse

Participation and Sensory Environment Questionnaire (P-SEQ)

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This questionnaire measures the amount of effort needed to help your child to participate in common activities in both home and community environments AND if the sensory features of the environment or the activity impact on your child's participation. **Participation** is your child's involvement in an activity. Your child may or may not have the skills necessary to complete the activity by them self, but can still participate (i.e. putting his arms out to help with dressing, sitting and being fed while at a restaurant). **Sensory Features** refer to the type of sensory stimuli that is in the environment or present when participating in the activity. This could include: the way something feels to the touch or the texture (tactile); the amount or type of noise (auditory); the amount or type of visual information or light; the amount of movement (vestibular); the way something smells or tastes; or the amount of heavy muscle work (proprioception). Your child's **responses** to the sensory features of the environment may include sensory seeking (i.e. jumping, running, crashing into things, touching things more than usual), typical responses, and hypersensitive responses (overly sensitive or reactive). We are also interested in the strategies that are used to support (or help) your child's participation in activities. The following are a list of possible strategy choices and descriptions of the strategies:

1. Keeping or developing routines	Following an already established predictable routine or developing a new predictable routine.
2. Presence of certain sensory features in the activity	Sensory features that are naturally part of the environment or the activity (i.e. movement on the swings at the park; deep touch input from the foam at gymnastics; the feel and resistance of the water when swimming; darkness in the movie theater) that support or enable participation for your child.
3. Child having control of the situation	The child feels in control of how the activity is completed or the environment in which it is completed.
4. Preparing and planning for participation in the activity	Anticipating the unique needs of your child to participate in the activity and preparing the child or other materials and strategies that are necessary for more successful participation (i.e. using a social story to prepare the child, bringing snacks or favorite toys/objects, developing alternate plan or environment if necessary).

5. Changing the sensory features of activity	These are adaptations or modifications to the actual sensory features that are naturally occurring in the environment or the activity (i.e. reducing the noise in the environment, turning off the sound on a toy, taking the tags out of the child's clothing, turning down the lights).
6. Use of sensory strategies during the activity	These involve providing sensory input or techniques to block out sensory input that are implemented with the child (i.e. firm hugs, wearing noise reducing headphones, use of fidget or oral motor toys).

HOME ENVIRONMENT

How much does your child's responses (**hypersensitivity** and/or **sensory seeking**) to the sensory features of the environment or activity impact on participation in the following activities that take place at Home?

Hypersensitivity: overly sensitive or reactive to sensory stimuli (i.e. not liking to be touched or not liking loud noises)

Sensory Seeking: responds with intense searching for more or stronger sensory stimuli (i.e. jumping, running, crashing into things, or touching things more than usual)

	Task	(1) None	(2) A Little	(3) Some	(4) A Lot	(5) Too Much to Participate (only choose this answer if your child does not participate in this activity due to the amount of effort)
1	Dressing (excluding shoes, socks, and coat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Putting on Socks and Shoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Putting on Coat by Self or by Another	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Tooth Brushing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Bathing (excluding washing hair)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6	Washing Hair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Brushing Hair/Hair Care (combing, fixing, putting hair in ponytail holder)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Cutting Fingernails and/or Toenails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Toileting (diaper changes or going to the bathroom on the toilet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Falling Asleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Staying Asleep or Sleeping Through the Night	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Mealtime with Family Members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Play with Siblings or Other Children in the Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Play with Toys/Objects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important is it for your child to participate in these activities?

	Task	(1) Not Important/Essential	(2) Moderately or Somewhat Important/Essential	(3) Very Important/Essential
1	Dressing (excluding shoes, socks, and coat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Putting on Socks and Shoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Putting on Coat by Self or by Another	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Tooth Brushing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Bathing (excluding washing hair)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Washing Hair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7	Brushing Hair/Hair Care (combing, fixing, putting hair in ponytail holder)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Cutting Fingernails and/or Toenails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Toileting (diaper changes or going to the bathroom on the toilet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Falling Asleep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Staying Asleep or Sleeping Through the Night	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Mealtime with Family Members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Play with Siblings or Other Children in the Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Play with Toys/Objects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rank up to three strategies that help your child participate in **home** activities:

(1 = Most Helpful, 2 = 2nd Most Helpful, 3 = 3rd Most Helpful)

Rating	Strategy
	Keeping or developing routines: Following an already established predictable routine or developing a new predictable routine.
	Presence of certain sensory features in the activity: Sensory features that are naturally part of the environment or the activity (i.e. movement on the swings at the park; deep touch input from the foam at gymnastics; the feel and resistance of the water when swimming; darkness in the movie theater) that support or enable participation for your child.

	Child having control of the situation: The child feels in control of how the activity is completed or the environment in which it is completed.
	Preparing and planning for participation in the activity: Anticipating the unique needs of your child to participate in the activity and preparing the child or other materials and strategies that are necessary for more successful participation (i.e. using a social story to prepare the child, bringing snacks or favorite toys/objects, developing alternate plan or environment if necessary).
	Changing the sensory features of activity: These are adaptations or modifications to the actual sensory features that are naturally occurring in the environment or the activity (i.e. reducing the noise in the environment, turning off the sound on a toy, taking the tags out of the child's clothing, turning down the lights).
	Use of sensory strategies during the activity: These involve providing sensory input or techniques to block out sensory input that are implemented with the child (i.e. firm hugs, wearing noise reducing headphones, use of fidget or oral motor toys).

COMMUNITY ENVIRONMENT

How much does your child's responses (**hypersensitivity** and/or **sensory seeking**) to the sensory features of the environment or activity impact on participation in the following activities in the Community?

Hypersensitivity: overly sensitive or reactive to sensory stimuli (i.e. not liking to be touched or not liking loud noises) **Sensory seeking:** responds with intense searching for more or stronger sensory stimuli (i.e. jumping, running, crashing into things, or touching things more than usual).

		(1) None	(2) A Little	(3) Some	(4) A Lot	(5) Too Much to Participate (only choose this answer if your child does not participate in this activity due to the amount of effort)
1	Family Parties at Another's Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Parties for Another Child in the Community or at Another's Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3	Eating at a Restaurant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Meals at Family or Friend's Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Movies/Theaters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Religious Service, Event, or Education (i.e. church, synagogue, mosque)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Library Activities (i.e. choosing a book at the library, attending reading times)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Dental Appointments and Procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Doctor Appointments and Procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Vacations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Play at the Playground/Park or Indoor Play Place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Play with Other Children Outside of Home and School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Sporting Event of Another (i.e. professional game, siblings event)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Sporting Event of the Child (i.e. gymnastics, soccer, t-ball)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Swimming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	Amusement Park/Water Park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Using a Public Bathroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	Community Events (i.e. fairs, concerts, fireworks, parade)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Taking Public Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important is it for your child to participate in these activities?

		(1) Not Important/Essential	(2) Moderately or Somewhat Important/Essential	(3) Very Important/Essential
1	Family Parties at Another's Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Parties for Another Child in the Community or at Another's Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3	Eating at a Restaurant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Meals at Family or Friend's Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Movies/Theaters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Religious Service, Event, or Education (i.e. church, synagogue, mosque)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Library Activities (i.e. choosing a book at the library, attending reading times)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Dental Appointments and Procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Doctor Appointments and Procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Vacations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Play at the Playground/Park or Indoor Play Place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Play with Other Children Outside of Home and School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Sporting Event of Another (i.e. professional game, siblings event)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Sporting Event of the Child (i.e. gymnastics, soccer, t-ball)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Swimming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	Amusement Park/Water Park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Using a Public Bathroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	Community Events (i.e. fairs, concerts, fireworks, parade)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Taking Public Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rank up to three strategies that help your child participate in **community** activities: (1 = Most Helpful, 2 = 2nd Most Helpful, 3 = 3rd Most Helpful)

Rating	Strategy
	Keeping or developing routines: Following an already established predictable routine or developing a new predictable routine.
	Presence of certain sensory features in the activity: Sensory features that are naturally part of the environment or the activity (i.e. movement on the swings at the park; deep touch input from the foam at gymnastics; the feel and resistance of the water when swimming; darkness in the movie theater) that support or enable participation for your child.
	Child having control of the situation: The child feels in control of how the activity is completed or the environment in which it is completed.
	Preparing and planning for participation in the activity: Anticipating the unique needs of your child to participate in the activity and preparing the child or other materials and strategies that are necessary for more successful participation (i.e. using a social story to prepare the child, bringing snacks or favorite toys/objects, developing alternate plan or environment if necessary).
	Changing the sensory features of activity: These are adaptations or modifications to the actual sensory features that are naturally occurring in the environment or the activity (i.e. reducing the noise in the environment, turning off the sound on a toy, taking the tags out of the child's clothing, turning down the lights).
	Use of sensory strategies during the activity: These involve providing sensory input or techniques to block out sensory input that are implemented with the child (i.e. firm hugs, wearing noise reducing headphones, use of fidget or oral motor toys).

APPENDIX-E: Questionnaire (Bengali)

অংশগ্রহণকারীর সাধারণ তথ্যসমূহ

কোড:

তারিখ:

অংশগ্রহণকারীর নাম:

বয়স:

পেশা:

ঠিকানা:

অটিজম শিশুর সাথে সম্পর্ক: ১. পিতা ২. মাতা ৩. অন্যান্য

শিক্ষাগত যোগ্যতা: ১. অনানুষ্ঠানিক শিক্ষা ২. প্রাথমিক থেকে কম ৩. প্রাথমিক সম্পন্ন ৪. মাধ্যমিকের চেয়ে কম ৫. মাধ্যমিক সম্পন্ন ৬. উচ্চ মাধ্যমিক সম্পন্ন ৭. স্নাতক সম্পন্ন ৮. স্নাতকত্তর ৯. অন্যান্য

আপনার ছেলেমেয়ের সংখ্যা:

বাড়িতে প্রাপ্ত বয়স্ক আছে (আপনি সহ):

বসবাসের স্থান: ১. শহর ২. মফস্বল ৩. গ্রাম ৪. অন্যান্য

পরিবারের মাসিক আয়: ১. অন্তত ৫৮,১০৬ টাকা (উচ্চ আয়ের শ্রেণী)

২. অন্তত ১৮,৪০৪ টাকা (মধ্যম আয়ের শ্রেণী)

৩. অন্তত ৮,৩৪২ টাকা (নিম্ন আয়ের শ্রেণী)

অটিজম শিশুর তথ্য

অটিজম শিশুর নাম:

বয়স:

জন্ম তারিখ:

লিঙ্গ : ১. ছেলে ২. মেয়ে

শিশু কি স্কুলে যায়: ১. হ্যাঁ ২. না স্কুলের নাম :

শ্রেণী :

শিশুর দেখার ক্ষমতা: ১. সক্ষম ২. কিছুটা দুর্বলতা আছে ৩. সক্ষম নয়

শিশুর শোনার ক্ষমতা: ১. সক্ষম ২. কিছুটা দুর্বলতা আছে ৩. সক্ষম নয়

শিশুর কথা বলার ক্ষমতা: ১. সক্ষম ২. কিছুটা দুর্বলতা আছে ৩. সক্ষম নয়

শিশুর আচরন: ১. স্বাভাবিক ২. অস্বাভাবিক প্রতিক্রিয়া ৩. কোন প্রতিক্রিয়া নাই

শিশুর অনুভূতির ধরণ: ১. অতিরিক্ত সংবেদনশীল (Hypersensitive), যেমন: কেউ স্পর্শ করলে পছন্দ করে না, উচ্চ আওয়াজ পছন্দ করে না ২. অনুভূতি খোজা /পাবার চেষ্টা (Sensory seeking), যেমন: লাফানো, দৌড়ানো

শিশু কি কি ধরনের চিকিৎসা নিচ্ছে: ১. ঔষধ ২. থেরাপী ৩. সহায়ক উপকরণ

Participation and Sensory Environment Questionnaire

2017 Beth Pfeiffe

(অংশগ্রহণ এবং পরিবেশগত অনুভূতি প্রশ্নাবলীসমূহ)

পরিবেশে বা কাজের অনুভূতি জনিত বৈশিষ্ট্য (Sensory features) যদি শিশুর অংশগ্রহণে প্রভাব ফেলে তাহলে বাড়ি এবং সমাজ উভয় পরিবেশে সাধারণ কাজ সমূহে অংশগ্রহণ করতে আপনার শিশুর যতটা সহযোগীতা প্রয়োজন হয় তা এই প্রশ্নাবলীর মাধ্যমে পরিমাপ করা যায়। অংশগ্রহণ বলতে আপনার শিশুর কোন কাজে সংযুক্ত হওয়াকে বোঝায়। নিজের মাধ্যমে কাজটি করার দক্ষতা আপনার শিশুর থাকতে পারে আবার নাও থাকতে পারে কিন্তু তারপরেও সে অংশগ্রহণ করতে পারে (যেমন: হাত বাহিরে নেয়ার মাধ্যমে জামাকাপড় পড়তে সাহায্য করা, রেট্রুয়েন্টে বসে থাকা এবং খাবার খাওয়া)। কোন কাজে অংশগ্রহণের ক্ষেত্রে উপস্থিত অথবা পরিবেশে বিদ্যমান অনুভূতি উদ্দীপকগুলোই (Sensory stimuli) মূলত অনুভূতি জনিত বৈশিষ্ট্য। এর অন্তর্ভুক্ত হতে পারে: স্পর্শ অথবা জমিন/গঠন বিন্যাসের মাধ্যমে কিছু অনুভূত হওয়া (স্পর্শ/Tactile), শব্দের পরিমাণ অথবা ধরন (শ্রবণ/Auditory), দৃশ্যমান তথ্যের পরিমাণ অথবা ধরন অথবা আলো, নড়াচড়ার পরিমাণ (ভারসাম্য/Vestibular), গন্ধ অথবা স্বাদ গ্রহণের পদ্ধতি/ উপায়, অথবা শক্তিশালী পেশী সমূহের কাজের পরিমাণ (প্রোপ্রিয়সেপসন/ Proprioception)। পরিবেশের অনুভূতিজনিত বৈশিষ্ট্যের প্রতি আপনার শিশুর সাড়াসমূহের মধ্যে অতিরিক্ত অনুভূতি পাবার চেষ্টা (যেমন: লাফানো, দৌড়ানো, কোন জিনিসের উপর ঝাপিয়ে পড়া, কোন জিনিস বা বস্তুকে স্বাভাবিকের চেয়ে বেশী স্পর্শ করা), স্বাভাবিক প্রতিক্রিয়া এবং অতিরিক্ত সংবেদনশীল প্রতিক্রিয়া (মাত্রাতিরিক্ত সংবেদনশীল অথবা প্রতিক্রিয়াশীল/overly sensitive or reactive) বিষয়গুলো অন্তর্ভুক্ত হতে পারে। আপনার শিশুর কাজে অংশগ্রহণের ক্ষেত্রে সহযোগী হিসেবে যে কৌশলগুলো ব্যবহৃত হয়, আমরা সেগুলো জানতেও আগ্রহী। নিচে কিছু সম্ভাব্য কৌশল ও কৌশলগুলোর ব্যাখ্যা দেয়া হলো:

১। দৈনন্দিন কাজকর্মের সূচি রাখা বা তৈরী	অনুমান করা যায় এমন কোন পূর্ব প্রতিষ্ঠিত রুটিন অনুসরণ করা অথবা অনুমান করা যায় এমন রুটিন তৈরী করা।
২। কাজে নির্দিষ্ট অনুভূতিজনিত বৈশিষ্ট্যের উপস্থিতি	যে অনুভূতিজনিত বৈশিষ্ট্যগুলো স্বাভাবিক ভাবেই পরিবেশ কিংবা কাজের অংশ সেগুলো আপনার শিশুর অংশগ্রহণে সহযোগীতা করে অথবা সক্ষম করে তোলে (যেমন: পার্কে দোলনায় চড়া, জীমেনেসটিক ফোম থেকে গভীর স্পর্শ পাওয়া, সাতার কাটার সময় অনুভূতি বা বাধা পাওয়া, সিনেমা কক্ষের অন্ধকার)।
৩। পরিস্থিতির উপর শিশুর নিয়ন্ত্রন আছে	কাজটি যেভাবে সম্পন্ন হয় বা যে পরিবেশে সম্পন্ন হয় তার উপর শিশু নিয়ন্ত্রন অনুভব করে।
৪। কাজে অংশগ্রহণের জন্য প্রস্তুতি এবং পরিকল্পনা গ্রহন	কাজে অংশগ্রহণের ক্ষেত্রে আপনার শিশুর যে প্রয়োজনীয়তা গুলো থাকতে পারে সে ব্যাপারে আগে থেকেই অনুমান করা এবং সেটা অনুযায়ী শিশুকে অথবা অন্যান্য প্রয়োজনীয় বস্তু এবং কৌশলসমূহ প্রস্তুত করা যাতে শিশু সফলভাবে অংশগ্রহণ করতে পারে (যেমন: শিশুকে প্রস্তুত করার জন্য সামাজিক গল্প বলা, নাস্তা বা পছন্দের খেলনা/বস্তু আনা, যদি প্রয়োজন হয় তাহলে বিকল্প পরিকল্পনা বা পরিবেশ তৈরী করা)।
৫। কাজে অনুভূতিজনিত বৈশিষ্ট্যের পরিবর্তন	পরিবেশে বা কাজে স্বাভাবিক যে অনুভূতি জনিত বৈশিষ্ট্য থাকে তার অভিযোজন বা রূপান্তর করা (পরিবেশ থেকে শব্দ পরিহার করা, খেলনার শব্দ

	বন্ধ করা, শিশুর কাপড় থেকে ট্যাগ সরানো, লাইট কমানো)।
৬। কাজের সময় অনুভূতি কৌশলসমূহ ব্যবহার করা	যে অনুভূতির যোগান শিশুকে দেয়া হচ্ছিল সেটা বন্ধ করার জন্য কৌশল অবলম্বন করে অনুভূতির যোগান বা পদ্ধতি প্রদান করা (যেমন: দৃঢ় আলিঙ্গন, শব্দ কমায় এমন হেডফোন ব্যবহার করা, ফিডজেট বা ওরাল মটর ব্যবহার করা)।

বাড়ির পরিবেশ

(১)পরিবেশে বা কাজে বিদ্যমান অনুভূতিজনিত বৈশিষ্ট্য (Sensory feature) কি নিম্নে বর্ণিত বাড়িতে করণীয় কাজগুলোতে শিশুর অংশগ্রহণের ক্ষেত্রে প্রভাব ফেলে (অতিরিক্ত সংবেদনশীল বা অনুভূতি পাবার চেষ্টা)?

অতিরিক্ত সংবেদনশীল (Hypersensitive): মাত্রা অতিরিক্ত সংবেদনশীল অথবা অনুভূতি উদ্দীপনায় প্রতিক্রিয়াশীল (যেমন: কেউ স্পর্শ করলে পছন্দ করে না, উচ্চ আওয়াজ পছন্দ করে না)।

অনুভূতি খোজা/পাবার চেষ্টা (Sensory seeking): তীব্র অনুসন্ধান অথবা প্রবল অনুভূতি উদ্দীপনায় সাড়া দেয় (যেমন: লাফানো, দৌড়ানো, কোন কিছুর উপর ঝাপিয়ে পড়া অথবা স্বাভাবিকের চেয়ে কোন বস্তুকে বেশী স্পর্শ করা)।

কাজ	(১) একটুও প্রভাব ফেলে না	(২) সামান্য কিছু প্রভাব ফেলে	(৩) বেশ কিছু প্রভাব ফেলে	(৪) অনেক প্রভাব ফেলে	(৫) অতিরিক্ত প্রভাব ফেলে অংশগ্রহণ করতে (উত্তরটি বাছাই করুন যদি আপনার শিশু কখনোই এই কাজে অংশগ্রহণ করে না)
১। জামা পড়া (জুতা, মোজা এবং কোট বাদে)					
২। মোজা এবং জুতা পড়া					
৩। নিজ বা অন্যের সাহায্যে কোট (হাতওয়ালা জ্যাকেট) পড়া					
৪। দাঁত মাজা					
৫। গোসল করা (চুল ধোওয়া বাদে)					
৬। চুল ধোয়া					
৭। চুল আচড়ানো/চুলের যত্ন (আচড়ানো,ঠিকঠাক করা, ঝুটি বাধা)					
৮। হাত এবং পায়ের নখ কাটা					
৯। টয়লেট বা পায়খানা ব্যবহার (ডায়াপার পরিবর্তন অথবা গোসল খানার টয়লেটে যাওয়া)					
১০। ঘুমানো/ঘুমিয়ে পরা					

১১। ঘুমন্ত অবস্থায় থাকা অথবা সারা রাত ঘুমানো				
১২। খাওয়া				
১৩। পরিবারের সদস্যদের সাথে খাওয়া				
১৪। বাড়িতে ভাইবোন অথবা অন্য বাচ্চাদের সাথে খেলা করা				
১৫। খেলনা/বস্তু নিয়ে খেলা করা				

(২) নিম্নের কাজগুলোতে অংশগ্রহণ করা আপনার বাচ্চার জন্য কতটা গুরুত্বপূর্ণ/প্রয়োজন?

কাজ	(১) গুরুত্ব পূর্ণ নয়	(২) কিছুটা গুরুত্বপূর্ণ	(৩) খুবই গুরুত্বপূর্ণ
১। জামা পড়া (জুতা, মোজা এবং কোট বাদে)			
২। মোজা এবং জুতা পড়া			
৩। নিজ বা অন্যের সাহায্যে কোট (হাতওয়ালা জ্যাকেট) পড়া			
৪। দাঁত মাজা			
৫। গোসল করা (চুল ধোওয়া বাদে)			
৬। চুল ধোয়া			
৭। চুল আচড়ানো/চুলের যত্ন (আচড়ানো,ঠিকঠাক করা, ঝুটি বাধা)			
৮। হাত এবং পায়ের নখ কাটা			
৯। টয়লেট বা পায়খানা ব্যবহার (ডায়াপার পরিবর্তন অথবা গোসল খানার টয়লেটে যাওয়া)			
১০। ঘুমানো/ঘুমিয়ে পরা			
১১। ঘুমন্ত অবস্থায় থাকা অথবা সারা রাত ঘুমানো			
১২। খাওয়া			
১৩। পরিবারের সদস্যদের সাথে খাওয়া			
১৪। বাড়িতে ভাইবোন অথবা অন্য বাচ্চাদের সাথে খেলা করা			
১৫। খেলনা/বস্তু নিয়ে খেলা করা			

(৩) নিম্ন লিখিত কৌশলগুলো থেকে তিনটি কৌশল বাছাই করুন যা শিশুকে বাড়িতে কাজ করার সময় সাহায্য করে, বাছাইকৃত তিনটি কৌশলের পাশে খালিঘরে যথাক্রমে লিখুন : ১ম গুরুত্বপূর্ণ সাহায্যকারী কৌশলের পাশে = ১, ২য় গুরুত্বপূর্ণ সাহায্যকারী কৌশলের পাশে = ২, ৩য় গুরুত্বপূর্ণ সাহায্যকারী কৌশলের পাশে = ৩

মাত্রা	কৌশল
	অনুমান করা যায় এমন কোন পূর্ব প্রতিষ্ঠিত রুটিন অনুসরণ করা অথবা অনুমান করা যায় এমন রুটিন তৈরী করা
	যে অনুভূতিজনিত বৈশিষ্ট্যগুলো স্বাভাবিক ভাবেই পরিবেশ কিংবা কাজের অংশ সেগুলো আপনার শিশুর অংশগ্রহনে সহযোগীতা করে অথবা সক্ষম করে তোলে (যেমন: পার্কে দোলনায় চড়া, জীমেনেসটিক ফোম থেকে গভীর স্পর্শ পাওয়া, সাতার কাটার সময় অনুভূতি বা বাধা পাওয়া, সিনেমা কক্ষের অন্ধকার)
	কাজটি যেভাবে সম্পন্ন হয় বা যে পরিবেশে সম্পন্ন হয় তার উপর শিশু নিয়ন্ত্রন অনুভব করে
	কাজে অংশগ্রহনের ক্ষেত্রে আপনার শিশুর যে প্রয়োজনীয়তা গুলো থাকতে পারে সে ব্যাপারে আগে থেকেই অনুমান করা এবং সেটা অনুযায়ী শিশুকে অথবা অন্যান্য প্রয়োজনীয় বস্তু এবং কৌশলসমূহ প্রস্তুত করা যাতে শিশু সফলভাবে অংশগ্রহন করতে পারে (যেমন: শিশুকে প্রস্তুত করার জন্য সামাজিক গল্প বলা, নাস্তা বা পছন্দের খেলনা/বস্তু আনা, যদি প্রয়োজন হয় তাহলে বিকল্প পরিকল্পনা বা পরিবেশ তৈরী করা)
	পরিবেশে বা কাজে স্বাভাবিক যে অনুভূতি জনিত বৈশিষ্ট্য থাকে তার অভিযোজন বা রূপান্তর করা (পরিবেশ থেকে শব্দ পরিহার করা, খেলনার শব্দ বন্ধ করা, শিশুর কাপড় থেকে ট্যাগ সরানো, লাইট কমানো)
	যে অনুভূতির যোগান শিশুকে দেয়া হচ্ছিল সেটা বন্ধ করার জন্য কৌশল অবলম্বন করে অনুভূতির যোগান বা পদ্ধতি প্রদান করা (যেমন দৃঢ় আলিঙ্গন, শব্দ কমায়ে এমন হেডফোন ব্যবহার করা, ফিডজেট বা ওরাল মটর ব্যবহার করা)

সামাজিক পরিবেশ

(১)পরিবেশে বা কাজে বিদ্যমান অনুভূতিজনিত বৈশিষ্ট্য (Sensory feature) কি নিম্নে বর্ণিত সামাজিক পরিবেশে করণীয় কাজগুলোতে শিশুর অংশগ্রহনের ক্ষেত্রে প্রভাব ফেলে (অতিরিক্ত সংবেদনশীল বা অনুভূতি পাবার চেষ্টা)?

অতিরিক্ত সংবেদনশীল (Hypersensitive): মাত্রা অতিরিক্ত সংবেদনশীল অথবা অনুভূতি উদ্দিপনায় প্রতিক্রিয়াশীল (যেমন: কেউ স্পর্শ করলে পছন্দ করে না, উচ্চ আওয়াজ পছন্দ করে না)।

অনুভূতি খোজা /পাবার চেষ্টা (Sensory seeking): তীব্র অনুসন্ধান অথবা প্রবল অনুভূতি উদ্দিপনায় সাড়া দেয় (যেমন: লাফানো ,দৌড়ানো, কোন কিছুর উপর বাপিয়ে পড়া অথবা স্বাভাবিকের চেয়ে কোন বস্তুকে বেশী স্পর্শ করা)।

কাজ	(১) একটুও প্রভাব ফেলে না	(২) সামান্য কিছু প্রভাব ফেলে	(৩) বেশ কিছু প্রভাব ফেলে	(৪) অনেক প্রভাব ফেলে	(৫) অতিরিক্ত প্রভাব ফেলে অংশগ্রহণ করতে (উত্তরটি বাছাই করুন যদি আপনার শিশু কখনোই এই কাজে অংশগ্রহণ করে না)
১। অন্য বাড়িতে পারিবারিক অনুষ্ঠান					
২। অন্য বাড়িতে বা সমাজে অন্য বাচ্চার জন্য অনুষ্ঠান					
৩। রেস্টোরা/রেস্টুরেন্ট এ খাওয়া					
৪। পরিবার বা বন্ধুর বাড়িতে খাবার খাওয়া					
৫। সিনেমা/নাটক					
৬। ধর্মীয় সেবা, অনুষ্ঠান অথবা শিক্ষাদান (যেমন: চার্চ, মন্দির, মসজিদ)					
৭। লাইব্রেরী কার্যক্রম (লাইব্রেরী থেকে বই পছন্দ করা, পড়তে বসা)					
৮। দস্ত চিকিৎসা সংক্রান্ত সাক্ষাৎ এবং কার্যপ্রণালী					
৯। চিকিৎসকের সাথে সাক্ষাৎ এবং কার্যপ্রণালী					
১০। অবকাশ/ছুটি/অবসর					
১১। খেলার মাঠ/পার্ক অথবা অভ্যন্তরীণ খেলার জায়গায় খেলা					
১২। বাড়ির বাহিরে বা স্কুলে অন্য বাচ্চাদের সাথে খেলা					
১৩। অন্যদের ক্রীয়াসংক্রান্ত অনুষ্ঠান (যেমন: পেশাদার খেলা, ভাইবোনের অনুষ্ঠান)					
১৪। বাচ্চার ক্রীয়া ইভেন্ট (যেমন: জীমে যাওয়া,সকার ,টি-বল)					
১৫। সাঁতার কাটা					
১৬। বিনোদন উদ্যান /ওয়াটার পার্ক (পানির উদ্যান)					
১৭। পাবলিক বাথরুম ব্যবহার					
১৮। সামাজিক কার্যক্রম (যেমন: মেলা,কনসার্ট,আতশবাজি,প্যারেড)					
১৯। পাবলিক পরিবহন ব্যবহার					

(২) নিম্নের কাজগুলোতে অংশগ্রহণ করা আপনার বাচ্চার জন্য কতটা গুরুত্বপূর্ণ/ প্রয়োজন ?

কাজ	(১) গুরুত্বপূর্ণ নয়	(২) কিছুটা গুরুত্বপূর্ণ	(৩) খুবই গুরুত্বপূর্ণ
১। অন্য বাড়িতে পারিবারিক অনুষ্ঠান			
২। অন্য বাড়িতে বা সমাজে অন্য বাচ্চার জন্য অনুষ্ঠান			
৩। রেস্টোরা/রেস্টুরেন্ট এ খাওয়া			
৪। পরিবার বা বন্ধুর বাড়িতে খাবার খাওয়া			
৫। সিনেমা/নাটক			
৬। ধর্মীয় সেবা, অনুষ্ঠান অথবা শিক্ষাদান (যেমন: চার্চ, মন্দির, মসজিদ)			
৭। লাইব্রেরী কার্যক্রম (লাইব্রেরী থেকে বই পছন্দ করা, পড়তে বসা)			
৮। দন্ত চিকিৎসা সংক্রান্ত সাক্ষাৎ এবং কার্যপ্রণালী			
৯। চিকিৎসকের সাথে সাক্ষাৎ এবং কার্যপ্রণালী			
১০। অবকাশ/ছুটি/অবসর			
১১। খেলার মাঠ/পার্ক অথবা অভ্যন্তরীণ খেলার জায়গায় খেলা			
১২। বাড়ির বাহিরে বা স্কুলে অন্য বাচ্চাদের সাথে খেলা			
১৩। অন্যদের ক্রীয়াসংক্রান্ত অনুষ্ঠান (যেমন: পেশাদার খেলা, ভাইবোনের অনুষ্ঠান)			
১৪। বাচ্চার ক্রীয়া ইভেন্ট (যেমন: জীমে যাওয়া, সকার, টি-বল)			
১৫। সাঁতার কাটা			
১৬। বিনোদন উদ্যান /ওয়াটার পার্ক (পানির উদ্যান)			
১৭। পাবলিক বাথরুম ব্যবহার			
১৮। সামাজিক কার্যক্রম (যেমন: মেলা, কনসার্ট, আতশবাজি, প্যারেড)			
১৯। পাবলিক পরিবহন ব্যবহার			

(৩) নিম্ন লিখিত কৌশলগুলো থেকে তিনটি কৌশল বাছাই করুন যা শিশুকে বাড়িতে কাজ করার সময় সাহায্য করে, বাছাইকৃত তিনটি কৌশলের পাশে খালিঘরে যথাক্রমে লিখুন : ১ম গুরুত্বপূর্ণ সাহায্যকারী কৌশলের পাশে = ১, ২য় গুরুত্বপূর্ণ সাহায্যকারী কৌশলের পাশে = ২, ৩য় গুরুত্বপূর্ণ সাহায্যকারী কৌশলের পাশে = ৩

মাত্রা	কৌশল
	অনুমান করা যায় এমন কোন পূর্ব প্রতিষ্ঠিত রুটিন অনুসরণ করা অথবা অনুমান করা যায় এমন রুটিন তৈরী করা
	যে অনুভূতিজনিত বৈশিষ্ট্যগুলো স্বাভাবিক ভাবেই পরিবেশ কিংবা কাজের অংশ সেগুলো আপনার শিশুর অংশগ্রহণে সহযোগীতা করে অথবা সক্ষম করে তোলে (যেমন: পার্কে দোলনায় চড়া, জীমেনেসটিক ফোম থেকে গভীর স্পর্শ পাওয়া, সাঁতার কাটার সময় অনুভূতি বা বাধা পাওয়া,

	সিনেমা কক্ষের অঙ্ককার)
	কাজটি যেভাবে সম্পন্ন হয় বা যে পরিবেশে সম্পন্ন হয় তার উপর শিশু নিয়ন্ত্রন অনুভব করে
	কাজে অংশগ্রহনের ক্ষেত্রে আপনার শিশুর যে প্রয়োজনীয়তা গুলো থাকতে পারে সে ব্যাপারে আগে থেকেই অনুমান করা এবং সেটা অনুযায়ী শিশুকে অথবা অন্যান্য প্রয়োজনীয় বস্তু এবং কৌশলসমূহ প্রস্তুত করা যাতে শিশু সফলভাবে অংশগ্রহন করতে পারে (যেমন: শিশুকে প্রস্তুত করার জন্য সামাজিক গল্প বলা, নাস্তা বা পছন্দের খেলনা/বস্তু আনা, যদি প্রয়োজন হয় তাহলে বিকল্প পরিকল্পনা বা পরিবেশ তৈরী করা)
	পরিবেশে বা কাজে স্বাভাবিক যে অনুভূতি জনিত বৈশিষ্ট্য থাকে তার অভিযোজন বা রূপান্তর করা (পরিবেশ থেকে শব্দ পরিহার করা, খেলনার শব্দ বন্ধ করা, শিশুর কাপড় থেকে ট্যাগ সরানো, লাইট কমানো)
	যে অনুভূতির যোগান শিশুকে দেয়া হচ্ছিল সেটা বন্ধ করার জন্য কৌশল অবলম্বন করে অনুভূতির যোগান বা পদ্ধতি প্রদান করা (যেমন দৃঢ় আলিঙ্গন, শব্দ কমায় এমন হেডফোন ব্যবহার করা, ফিডজেট বা ওরাল মটর ব্যবহার করা)

APPENDIX-G:IRB APPROVAL LETTER



বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref.

CRP-BHPI/IRB/09/18/1229

Date: 20/07/2018

To,
Khadija Akter Lily
M.Sc. in Rehabilitation Science (MRS)
Session: 2017-2018, Student ID: 181170076
BHPI, CRP-Savar, Dhaka-1343, Bangladesh

Subject: Approval of thesis proposal "Activity Participation of Children with Autism Spectrum Disorder at Home and Community"

Dear Khadija Akter Lily,

Congratulations,

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned thesis, with yourself, as the Principal Investigator" The Following documents have been reviewed and approved:

S.N.	Name of Documents
1.	Thesis Proposal
2.	Questionnaire (English and Bangla version)
3.	Information sheet & consent form.

The study involves answering a questionnaire to address Activity participation among Children with Autism Spectrum Disorder (ASD) and strategies identification that influence in activity participation: A study in selected area around Dhaka city, Bangladesh that takes about 30 to 45 minutes to complete it. Since, there is no likelihood of any harm to the participants and have possibilities of benefit for both the researcher and participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 09:00 a.m. on 24th April 2018 at BHPI.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন : ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স : ৭৭৪৫০৬৯

CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745069, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org

APPENDIX-H: Data collection Permission Letter

Date: 29/09/ 2018

The Head

Paediatric Department

Centre for the Rehabilitation of the Paralysed (CRP)

Savar, Dhaka

Subject: Application for permission of data collection for Master's Thesis

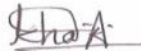
Sir,

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Therefore I look forward to having your kind approval for the data collection of children with ASD and their parents.

Yours Sincerely,



Khadija Akter Lily

Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

*She will collect
data from this Dept.
please help her.*
29-9-18
Mosnara Perveen
Head of Department
Department of Paediatrics
CRP Savar, Dhaka

Date: 29/09/ 2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

Mirpur, Dhaka

Subject: Application for permission of data collection for Master's Thesis

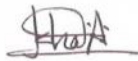
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Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Allowed
C. I.
Amal
1-10-18
226

Date: 01/10/ 2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

CRP- Mymensingh

Subject: Application for permission of data collection for Master's Thesis

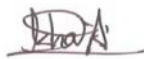
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Khadija Akter Lily

Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Approved
16/10/18

Mahmudul Hasan Imran
Center Manager
29, HAU Branch, Mymensingh

Date: 01/10/ 2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

CRP- Pabna

Subject: Application for permission of data collection for Master's Thesis

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Khadija Akter Lily

Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Permission for data
collection is granted.



13-10-18
KOUSHIK AHMED
Centre Manager (Assistant Manager)
CRP-Pabna Diabetes Shantty

Date: 01/10/ 2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

A.K.Khan CRP, Chittagong

Subject: Application for permission of data collection for Master's Thesis


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Khadija Akter Lily

Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Permitted
10/10/2018
Md. Khatirur Rahman
Centre Manager
A.K. Khan CRP-Chittagong
Kalingda, Mohana, Chaudhara, Chittagong.

Date: 01/10/2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

CRP- Sylhet

Subject: Application for permission of data collection for Master's Thesis

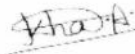
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Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Allow to data
collection from
branch. *lul* CRP-Sylhet
07-10-18.

Showdhury Md. Kamrul Hasan
Centre Manager
Iskandar Sitara-CRP, Sylhet

Date: 01/10/ 2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

Afsar Hussain CRP Rajshahi

Subject: Application for permission of data collection for Master's Thesis

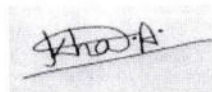
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Khadija Akter Lily

Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh


7/5/19.
Suma Begum
Centre Manager
Integrated Disability & Livelihood Project
Afsar Hussain CRP Rajshahi

Date: 01/10/2018

Center Manager

Centre for the Rehabilitation of the Paralyzed (CRP)

CRP- Barisal

Subject: Application for permission of data collection for Master's Thesis

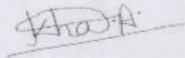
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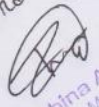
Yours Sincerely,



Khadija Akter Lily

Student of M.Sc. in Rehabilitation Science (MRS)

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

permitted accordingly

Rubina Akter
Centre Manager
CRP, Barisal.