DISCLOSURE OF ASD DIAGNOSIS AND PEER'S SOCIAL RESPONSE IN GRADE 3 TO 7 CHILDREN

by

JASMINE (TSING) LEE

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Abstract

One of the common features of Autism Spectrum Disorder (ASD) is deficits in social communication skills, which discourages positive social interaction and leads to negative social responses from peers. Inclusive education encourages all students to be included in general classroom settings; this should also apply to those who may be seen as neurodiverse. Beyond just physical presence, social engagement is essential for successful inclusive education. Bolton and Ault (2018) suggested a positive correlation between Autism diagnosis disclosure and positive social response in college students and adults. The current study investigated if similar results can be observed from younger participants. In addition, participants’ empathy scores were taken into account in this investigation. Forty-three participants from grades three to seven were recruited from a tutorial centre to participate in this study. The participants were asked to complete a questionnaire to ascertain their social responses toward a peer who demonstrates ASD traits with or without the influence of ASD diagnosis disclosure. Information about participants’ gender, grade level and empathy scores were collected to examine the correlation among these variables and participants’ social responses. Results from this study found that the group which were disclosed to an ASD designation demonstrated more prosocial responses and less asocial responses toward the peer in the illustration. Although the difference was not statistically significant, this initial study suggested the possibility of a positive effect of ASD diagnosis disclosure in a younger population.

Keywords: Autism Spectrum Disorder, Social Responses, Inclusive education, Neruodiversity

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Chapter 1: Introduction

Four decades ago, Canada's One Million Children report was created as "a blueprint for meeting the needs of one million Canadian children who require attention, treatment and care" (Laycock, 2012, p.165) due to various disabilities. The report provided information of the beginning of Canadian inclusive education. Today, each Canadian province has its own system of implementing inclusive education. In British Columbia, the Ministry of Education advocates that "all students should have equitable access to learning, opportunities for achievement, and the pursuit of excellence in all aspects of their education programs" (Ministry of Education, 2019, para. 3). Even though an inclusive education system is in place to support students with diverse learning needs, some research suggested that students with Autism Spectrum Disorder (ASD) may still experience isolation from their peers (Orsmond, Shattuck, Cooper, Sterzing, & Anderson, 2013).

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013), people with ASD often struggle in social communication due to their deficits in their back-and-forth communication with other people socially and emotionally; this is referred as social-emotional reciprocity. With these potential social challenges that students with ASD are facing and the rapidly rising number of ASD diagnoses, strategies are needed to support these students socially in school settings (Gardiner & Iarocci, 2013). Past studies have suggested that increased knowledge of ASD may decrease others' stigma towards students with autism (Gillespie-Lynch, Brooks et al., 2015). The current study, instead of educating people about ASD in depth, focused on the influence that a disclosure of ASD diagnosis had on peer’s social response.

Rationale

According to PsycINFO (2019), over ten thousand studies have been conducted on ASD and its related topics. However, studies that focused on the effect of ASD diagnosis disclosure are scarce. The present study aimed to learn about the effect of ASD diagnoses disclosure as will be more fully discussed in the subsequent chapter. In addition, most studies that concentrated on the correlation between ASD and peers’ social responses were conducted in college settings (Gillespie-Lynch et al., 2015; Gardiner & Iarocci, 2013; Nevill & White, 2011). The current study focused on a much younger population and hoped to examine whether peers show similar social responses toward people with ASD across age groups. The study reported here was greatly influenced and motivated by the findings of Bolton and Ault (2018) that suggested disclosure of autism diagnoses may promote adults and college students’ positive social responses toward autistic individuals. The present study investigated if this result could be replicated among primary and middle school students.

In addition to Bolton and Ault’s (2018) finding, this study looked into the possible effect of empathy on participants’ responses. A review of the literature, as elaborated in the next chapter, suggested that limited research focused on the correlation between empathy and people’s social responses in this particular area. This would suggest a need to further explore whether one’s empathy may impact one’s reaction towards someone with known ASD diagnosis.

Definition of Terms

Autism Spectrum Disorder (ASD)

Autism Spectrum Disorder (ASD) is characterized as a "complex condition that impacts brain development and affects a person's social relationships, communication, interests and behaviour" (Ministry of Education of British Columbia, 2018). This study focused on the social responses toward people with ASD. According to a report from U.S. Centers for Disease Control and Prevention (CDC, 2019), ASD prevalence has increased from 1 in 88 children in 2014 to 1 in 68 children in 2016. Very few studies have been reported on the effect of ASD diagnosis disclosure, although extensive research has been done to learn about ASD in other aspects.

In this present study**,** social responses will be measured by the prosocial and asocial response of a peer towards an individual who demonstrated ASD traits. There will be a further discussion on the definition of prosocial and asocial response in the following section. Disclosure of an ASD diagnosis will be defined as exposing one's diagnosis of ASD from a recognized health professional to another person. As this study did not aim to educate the public about ASD but rather to examine the effect of the disclosure of an ASD diagnosis, this study was limited to peers' social responses toward examples of behaviours that may be observed in people with ASD in classroom settings.

Inclusive Education

According to the Ministry of Education in British Columbia, "Inclusion describes the principle that all students are entitled to equitable access to learning, achievement and the pursuit of excellence in all aspects of their education" (Ministry of Education, 2016, p.7). Inclusive education in Canada is not regulated nationally, as it is in the United States where much of the extant research was done, but it is supported by the Ministry of Education in each province. This study focused on inclusive education in British Columbia, where the study took place. As mentioned in the beginning of the chapter, the Ministry of Education advocates a system of inclusive education for all students. However, past research suggested that students who could be termed neurodiverse, as elaborated below, were not socially included in general classrooms (Dean, Kasari et al., 2014; Orsmond, Shattuck et al., 2013; Boer & Pijl, 2016). In addition, according to searches of PSYC INFO database and Google Scholar search engine, the author could find no similar study on how ASD diagnosis disclosure impacts inclusive education that took place in British Columbia.

Neurodiversity

Neurodiversity as used here, refers to an innovative view of disability which has emerged in the past decade. Instead of emphasizing the deficits of a person, using the term neurodiversity may encourage a new narrative that replaces the value-laden term deficit with that of difference. For example, Armstrong (2010) defined "neurodiversity" as "an exploration of what have thus far been considered mental disorders of neurological origin but that may instead represent alternative forms of natural human difference" (p.8). Besides looking at disability from a different perspective, the view of neurodiversity also suggests that there are unvalued strengths within people who may otherwise be seen as disabled (Rentenbach, Prislovsky & Gabriel, 2017). Peers' negativity towards neurodiverse students may come from misconceptions or misunderstandings of their differences. A more comprehensive explanation on the view of neurodiversity and its relation to the present study will be included in the next chapter.

Prosocial and Asocial Response

Generally, prosocial behaviour is defined as "socially accepted, friendly behaviors enacted for the purpose of helping others, which are beneficial to society as well as individuals (Liu, Su, Tian & Huebner, 2020, p.3)". In this study, prosocial is defined as behaviours that foster a positive interaction between the participants and the peer that showed autistic-like behaviour, such as willingness to play or work with the peer. Asocial response was defined as the behaviours that discourage a positive interaction between the participants and the peer that showed autistic-like behaviour, such as moving his or herself away from the peer or ask for a change of partner. These two terms, prosocial and asocial, will be used to report the described social response in this study.

Purpose of the Study and Research Question

The purpose of this exploratory study was to investigate how disclosure of ASD diagnoses may affect primary and middle school students' social responses toward students with ASD. This would provide insight as to whether disclosure of an ASD diagnosis can promote understanding towards people with ASD and thereby encourage positive social responses. This study hypothesized that disclosure of an ASD diagnosis would promote positive social responses in primary and middle school students regardless of the participants' grade level, gender and empathy score. Therefore, participants who were informed of an ASD diagnosis should demonstrate more positive social responses towards students with ASD, compared to the participants who were not informed of the diagnosis. The research question is: How does disclosure of an ASD diagnosis influence children’s social responses toward peers with ASD? In addition to examining the effect of an ASD diagnosis disclosure, this study investigated how grade level, gender and empathy may correlate with the result.

To understand the purpose of the present research, a thorough review of literature was conducted to examine the various sub-components, including ASD and its history, prevalence and diagnosis, social acceptance, empathy and neurodiversity.

Chapter 2: Literature Review

As discussed in the previous chapter, people with ASD commonly struggle with social communication which greatly hinders their social life (Orsmond et al, 2013). The inclusion policy in British Columbia intends to include students with ASD in the classrooms with their typically developing peers. Although Rotheram-Fuller et al.’s research suggested that students with ASD did not receive significantly more rejection than their peers, they found that students with ASD were significantly less accepted by their peers compared to typically developing peers (2010). While comprehensive research has addressed the frustration that people with ASD were facing due to their limited social skills, studies into whether the disclosure of an ASD diagnosis could promote positive social response were rare. Bolton and Ault published an innovative study in 2018 which suggested the positive correlation between autism diagnoses disclosure and positive social responses from peers. This encouraging result fostered the investigation reported here. It may be noted here that while Bolt and Ault (2018) used the term “autism”, this report will use the term Autism Spectrum Disorder (ASD), for reasons that are explained below. The following literature provides additional information about ASD and related topics that are relevant to this research.

Autism Spectrum Disorder (ASD)

Autism Spectrum Disorder (ASD) is defined as a neurodevelopmental disorder characterized by impaired social interaction, difficulties with verbal and non-verbal communication, and restricted or repetitive behaviour (American Psychiatric Association, 2013). Autism Canada states that “[e]ach person with an Autism Spectrum Disorder (ASD) is unique and will have different abilities” (2018), indicating that people with

ASD may present diverse symptoms. Some people with ASD can experience severe challenges in cognitive, sensory, and social communication skills, while others can experience mild challenges. Therefore, students with ASD may experience diverse challenges in the classroom based on the severity of their conditions. Due to the unique nature of ASD, it is difficult to generalize the results from the past investigations. Similar to Bolton and Ault's (2018) study, this study utilized an illustration of a student who behaved oddly in the classroom. The student was described as disruptive by standing up and flapping his or her hands in class and the student ignored his or her peers. These behaviours may not be representative of all students with ASD; there is a huge diversity in the severity of symptoms among students with ASD. Nevertheless, for the purpose of the study such obvious behaviours were utilized consistently across both groups, as is described in the methodology.

History

The term "Autism" was first documented in 1908 by Eugen Bleuler. It was used to describe people who were severely schizophrenic. Child psychiatrist, Leo Kanner, suggested a condition named "early infantile autism" which was characterized by "a powerful desire for aloneness" and "an obsessive insistence on persistent sameness" based on his study onf11 children in 1943. In the 1960s and 1970s, various studies were conducted to investigate the cause of autism and it was once believed that autism was caused by having an unloving mother. "Infantile autism" was listed on the Diagnostic and Statistical Manual of Mental Disorders (DSM) in 1980 which was later replaced by the term "autism disorder" in 1987. Asperger's Syndrome was identified by Hans Asperger in 1944 as a milder form of autism, but only added to the DSM in 1994. Before 2013, Autism Spectrum Disorder (ASD) was divided into three subcategories in the DSM. These subcategories were Autistic Disorder, Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS) and Asperger's Syndrome. In 2013, all of these subcategories of ASD were integrated in the diagnosis of Autism Spectrum Disorder (ASD) in DSM-5 (Wolff, 2004; Mandal, 2019; American Psychiatric Association, 2013).

Prevalence

According to the World Health Organization (2018), 1 in 160 children is diagnosed with ASD worldwide. In the United States, the Centers of Disease Control and Prevention (2018) found that the prevalence of ASD had increased from 1 in 123 children to 1 in 59 children during the period of 2004 to 2014. Based on the statistics from the Government of Canada, it is estimated 1 in 66 children have been diagnosed with ASD (2018). In British Columbia, the overall number of students with special needs in public schools has remained relatively constant in the past two decades, remaining at around 10% of the student population. However, the number of diagnosed students in the category of ASD has grown to over seven times more students than there were in 2001 (British Columbia Teachers' Federation.2019).

Diagnosis

The Diagnostic and Statistical manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013) is widely used as a diagnostic reference for medical professionals in North America. According to the Centers for Disease Control and Prevention (2019), ASD can be detected at 18 months or younger. Typically, a reliable diagnosis can be made from a medical professional at the age of two. The diagnostic process includes screening by a family doctor, followed by a referral to a specialist for diagnostic evaluation. In British Columbia, when a child is diagnosed with ASD, parents may contact the Ministry of Education and apply for funding to support a child's ASD related expenses, such as the costs of various forms of therapies (Ministry of Education, 2019).

This study focused on the possible effects of ASD diagnosis disclosure on social response to individuals with ASD. The British Columbia Teachers' Federation (BCTF) (2019) recently highlighted the importance of diagnosis disclosure in their statement that "the identification and assessment of children and youth with neuro-diverse special needs enables school administration to properly resource targeted services and allows teachers to tailor services to these students". However, students and their caregivers may tend to avoid disclosing diagnoses because disclosure is often associated with increased stigma towards people with ASD (Gillespie-Lynch, Brooks, Someki, Obeid, Shane-Simpson, & Kapp, 2015). Gillespie-Lynch et al's study challenged this common association as it suggested that increased knowledge about ASD, such as understanding ASD is a developmental disorder, could reduce stigma towards people with ASD (2015). Other research has also suggested that disclosure of ASD diagnoses may reduce negative perceptions towards people with ASD (Austin, Galijot, & Davies, 2017).

Social Acceptance

As mentioned in the previous chapter, inclusive education has been implemented in the education system for four decades. However, children with ASD are still less socially accepted, in terms of attaining significantly higher "rather not work with" scores and lower "happy to work with" scores than their typically developing peers in Jones and

Frederickson's study (2010). Boer and Pijl's (2016) study also suggested that attitude towards students with ASD is an important factor in predicting peers' social responses. Consistent results that showed the discrepancy between individuals with ASD and their peers in term of social acceptance were found in other studies, which indicated an urgent need to investigate for ways that may improve peer attitude towards children with ASD. Furthermore, to help children with ASD to improve their social acceptance in the classroom. This study hoped to understand if disclosure of an ASD diagnosis could be feasible to foster peer's positive social behaviour.

Stigmatism

With the implementation of a paradigm of educational service delivery that values inclusion, students with ASD are physically included or situated in typical classrooms. However, numerous studies suggested that people hold stigma towards people with ASD and the stigma is built to a large extent on the misconception of ASD (Gillespie-Lynch et al., 2015; Kinnear et al., 2015; Tipton & Blacher, 2013). In most of the past studies, researchers did not disclose the ASD diagnosis to research participants. Instead, they described autistic-like behaviours in order to understand people's perceptions of people with ASD (Gardiner & Iarocci, 2013; Tipton & Blacher, 2013). This practice persisted until the work of Bolton and Ault (2018) showed that disclosure of Autism diagnosis promoted positive social responses instead of worsening stigma in college students and adults. Despite the limitations of the sample size and other uncontrolled variables, Bolton and Ault's (2018) work provided an innovative view towards the disclosure of Autism diagnosis. Replication of the study is needed to reassess the effect of diagnosis disclosure. Although inclusion policies are reinforced in North America, stigmatism towards people with ASD is inevitably happening. With the soaring number of ASD diagnoses, people may still hold false beliefs towards people with ASD due to lack of intentional learning about ASD (Gillespie-Lynch et al., 2015). The issues of false beliefs and stigma had a direct effect on the methodology of the research reported here.

When recruiting for suitable participating organizations, the author asked various organizations if they would like to participate in a study about autism. Fourteen out of the eighteen visited organizations rejected promptly with reasons that indicate exclusion, such as “we don’t have those students in our centre” and “parents will not like us to bring this topic up.” On the positive side, there was one centre that willingly agreed to participate in the current study. The director of the centre showed great interest in ASD and this related project. This observation reflected the phenomenon that most people know about ASD, however, the level of knowledge and openness vary tremendously.

Familiarity with ASD

Studies showed that familiarity with ASD could be a critical factor which may contribute to positivity towards people with Autism (Gillespie-Lynch et al., 2015; Bolton & Ault, 2018). Gillespie-Lynch and colleagues (2015) measured participants’ level of stigma towards people with autism before and after an online training which included an educational PowerPoint on autism. They found that participants showed decreased stigma after the online training. Therefore, it is suggested increased knowledge of autism may reduce stigma towards people with autism. The study also showed that misconception of autism, such as mixing up with other diagnoses, was common among the participants. It may be noted here that knowledge about autism has been shown to be important. However, the purpose of the research reported here was to explore the effects of disclosure versus non-disclosure of a diagnosis of ASD, and not specifically knowledge about ASD itself.

Bolton and Ault (2018) suggested participants who had past experience with people with autism demonstrated more positive response towards people with autism. These studies measured the effect of familiarity with ASD, in terms of knowledge about ASD and personal relationships with people with ASD, on one’s responses toward people with ASD. Although these studies showed that increased familiarity with ASD promoted positive social responses towards people with ASD, the results were based on responses of college-age and adult participants. School-age children’s responses in this area were not investigated. Future research is needed to examine if similar behaviour could be observed in school-age children. The studies discussed thus far showed sufficient evidence that school-aged children with ASD received less desirable social relationships compared to their typically developing peers. Increased knowledge about ASD, in terms of disclosure of an ASD diagnosis, may possibly foster a more positive social relationship between children with ASD and their typically developing peers. This was the deliberately limited focus of the current study in an effort to understand how better to promote social relationships.

Quality of Life

In general terms, quality of life has been described as “an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (World Health Organization, 2014). It may also be understood as “how an individual measures the ‘goodness’ of multiple aspects of their life” (Theofilou, 2013, p.151). One factor that relates to quality of life is social interaction, which in turn is related to communication. People with ASD are, by definition, commonly challenged by their social and communication abilities. It is possible that deficits of social and communication abilities may contribute to a lower quality of life in people with ASD, compared to people with other disabilities.

Kuhlthau and her colleagues (2009) studied the quality of life of children with ASD. Their study suggested that the quality of life scores of the participating children with ASD were significantly lower than people who were generally healthy and than people who were suffering from chronic health conditions. Pfeiffer and her colleagues' (2016) study revealed that adults with ASD demonstrated a lower quality of life compared to typically developed adults. In addition, they found that adults with ASD showed a lower quality of life compared to those with other disabilities. They suggested that this disparity was related to their limited psychosocial skills.

The current study aimed to investigate if ASD diagnosis disclosure would be a feasible way to improve social responses towards peers with ASD. As discussed in the previous section, one's social response is closely connected to one's attitude which may greatly influence the social lives of people with ASD, and hence, their quality of life. With much attention focused on the level of quality of life that people with ASD are experiencing, limited research has examined the relationship between quality of life and social experience of people with ASD. The present study was designed to learn about whether disclosure of an ASD diagnosis encourages positive social responses from others. Future research may study the effect of positive social responses on the quality of life of people with ASD.

Empathy

Empathy may be defined as "one person's response to his or her perceptions of another person's current experience" (Hodges & Myers, 2007). Another definition of empathy is offered by Decety and his colleagues (2016) who referred to empathy as "the natural ability to perceive and be sensitive to the emotional states of others, coupled with a motivation to care for their well-being" (p.1). Given these definitions, the current study investigated if one's empathy, which is suggested to be an innate ability may alter one's social responses toward the peer who demonstrated ASD traits. Past research (Decety, Bartal, Uzefovsky & Knafo-Noam, 2016) suggested empathy and prosocial behaviours are positively correlated. Empathy is gradually developed from infancy. Preverbal infants are capable to show empathetic concerns towards others. By the age of two, toddles may show comforting responses toward others who are distressed. It was also suggested that empathy is an innate response which drives a person to react positively to another person. The present study took into consideration empathy score, as is described in the methodology, to explore any potential relationship between participants' innate ability in terms of empathy, and their social responses which may or may not under the influence an ASD diagnosis disclosure.

Neurodiversity

From the past century, medical and educational professionals gained understanding of ASD. The diagnosis of ASD has evolved from a mental illness to a recognized developmental disability. With the increased knowledge of ASD, the educational system in North America may be placing more emphasis on how persons diagnosed with ASD might better be understood as having differences rather than disabilities. This new perspective is understood as a “social approach to disability [which] views autism as a naturally occurring human variation representing difference, not necessarily a deficit” (Tomlinson & Newman, 2017).

Bolton and Ault (2018) also demonstrated their recognition of neurodiversity in their study. Instead of labeling persons negatively and emphasizing their disability, a diagnosis may facilitate people to discern and accept their difference. In the present study, the author hoped to connect the history and development of ASD, which tended to exclude and isolate people with ASD, to the emerging view of neurodiversity. This connection may support the rationale of the present study which suggested an increased knowledge, in terms of disclosure of ASD diagnosis, may promote a more inclusive environment for people with ASD. With increased exposure to people with ASD in typical classrooms, peers gain knowledge about people with ASD. Disclosure of an ASD diagnosis may encourage understanding towards people with ASD and foster acceptance of diversities. This study filled in some gaps of Bolton and Ault’s study. The current exploratory study looked at children’s responses based on disclosure of an ASD diagnosis and considered the effects of the gender, age and empathy score of the participants. As this is an innovative idea, the author acknowledged that there are still many gaps that will need to be filled in the future.

Summary of the Chapter

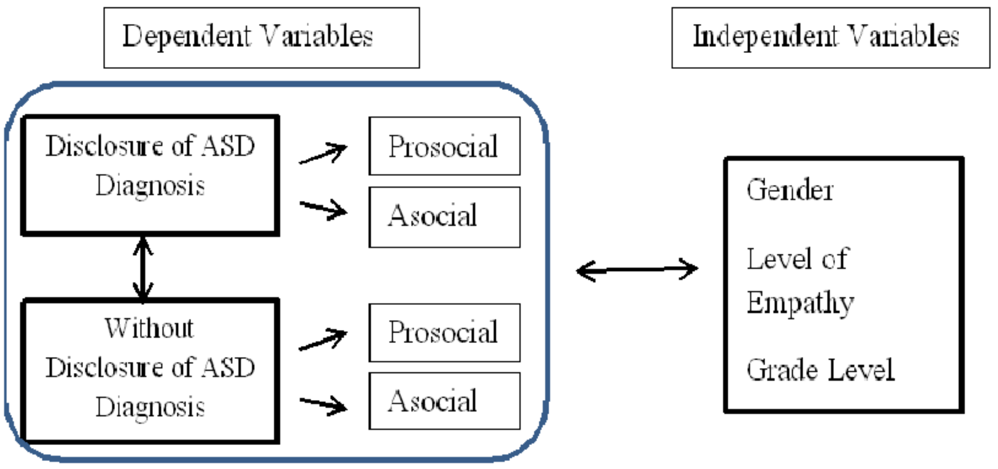
A review of the literature related to the research question was described in this chapter. This chapter discussed some of the background information of ASD and related topics. The information about ASD was presented to help the reader to understand the nature of ASD, and thus, understand the concerns of the research question. In addition, the issue of social acceptance is addressed in this chapter. As discussed above, people with ASD are characterized by limitations in social and communication skills that may lead to poor social responses from others. This study was designed to investigate whether disclosure of ASD diagnoses may promote prosocial response towards people with ASD. The design of the research and the results of this study will be discussed in the next chapters.

Chapter 3: Research Design

This study was an exploratory correlational study, which explored the relationship between disclosure of an ASD diagnosis on social responses of peers. Social responses were measured in peers’ prosocial and asocial responses with the aid of a questionnaire. As shown in Figure 1, the dependent variables in this study were the two versions of questionnaires, which included disclosure of an ASD diagnosis or excluded disclosure of an ASD diagnosis. The independent variables in this study were gender, grade level and empathy. This study was designed to find out to what extent, disclosure of an ASD diagnosis contributed to participants’ prosocial and asocial responses. Furthermore, this study investigated whether the independent variables created significant effects toward the result.

Figure 1

Dependent and Independent Variables



Participants

This study was approved by the Human Research Ethic Board of Trinity Western University prior to the initial contact with potential participants. Initial attempts were made to recruit a minimum of 100 participants from various organizations, such as schools, tutorial centres and art centres, to conduct a robust analysis. However, for reasons noted in the previous literature review, among the eighteen proposed organizations, initially only four organizations agreed to participate. At the end, there was only one organization that agreed to participate in this study. Since the three of the organizations had withdrawn from the study after agreeing to participate, there was a smaller than anticipated subject pool. With the agreement of the Thesis Supervisory Committee, this study proceeded with the sole data source.

Participating subjects were recruited from a tutorial centre in a suburban area in the Lower Mainland of British Columbia. Participants were recruited by the staff from the centre. Ultimately, this study involved forty-three students of a single tutorial centre. As shown in Table 1, there were 22 (51%) male participants and 21 (49%) female participants. Participants included Grade 3 students (N=9, 21%), Grade 4 students (N=11, 26%), Grade 5 students (N=7, 16%), Grade 6 students (N=10, 23%) and Grade 7 students (N=6, 14.0%). Due to the small sample size, other external factors, such as cultural background and familiarity with ASD, were not able to be included in this study.

Table 1

Demographics of Participants

Grade Level	Male	Female	Total
Grade 3	4	5	9(21%)
Grade 4	4	7	11(26%)
Grade 5	6	1	7(16%)
Grade 6	6	4	10(23%)
Grade 7	2	4	6(14%)
Total	22(51%)	21(49%)	43

Materials

Due to the limited resource in this area of study, the author was not able to obtain a research-based assessment tool that was able to fulfill the needs of this study. Instead, a 2-version questionnaire was designed by the author to investigate the level of proximity that the participants are willing to engage with people who showed autistic-like behaviour. The two versions included one with and one without an ASD diagnosis disclosure. The questionnaires depicted a peer who showed autistic-like behaviours and differed only in the disclosure versus non-disclosure of a diagnosis of ASD. To assist participant who may not know the word “autism”, a brief explanation of the condition was included in the version with an ASD diagnosis disclosure. Both versions of the questionnaires contained eight identical statements. The statements examined participants’ positive and negative responses toward the described peer who demonstrated autistic traits. Participants were asked to rate on a 5-point Likert scale to indicate how likely they would respond to the behaviour described in each statement. For example, “I will play with Y during recess”. In the questionnaires, “Not like at all” was coded as “1”, “Not likely” was coded as “2”, “Maybe” was coded as “3”, “Likely” was coded as “4” and “Very likely” was coded as “5”. There was no information regarding age and gender of the described person in the illustration to avoid any bias that knowledge might cause. Although effort was made to include different aspects of prosocial and asocial responses and careful consideration was made to enrich to measurement of social response in this study, this self- made questionnaire may need further research to support its generalizability. A copy of the questionnaires is included in Appendix A.

The Empathy Questionnaire for Children and Adolescents (Overgaauw et al., 2017) was used to measure participants' empathy scores. This questionnaire consisted of eighteen questions. Participants were asked to rate their responses toward described behaviors on a 3-point scale in which “Not true” was coded as “0”, “Sometimes true” was coded as “1” and “Often true” was coded as “2”. A sampling of the questions is reproduced in Appendix B.

Research Procedures

After attempting to recruit a larger population, as described in a previous chapter, the researcher obtained a sample of convenience from a single educational facility. Before collecting data, the researcher visited the organization and explained the procedure of the data collection process to the centre director. Questionnaires and parental consent forms were provided to the centre. Copies of the forms are included in Appendix C.

The director of the centre and tutors invited their students to participate in this study. After confirming consent by the parents of the participating students, participants were randomly given one of the two versions of the questionnaires from their tutors. They were asked to complete the two-page questionnaires on site. In both versions, the participants were asked to read an illustration of a scenario in which the participants were asked to work on an assignment with a classmate who was behaving oddly. In one of the versions, an autism diagnosis was disclosed and a brief explanation of Autism was provided ("... has Autism. People who have Autism have trouble understanding what other's think and feel."). One half of the participants were randomly assigned to this group. The other version just solely provided the illustration of the scenario. The participants were asked to respond on a scale of one to five to statements designed to indicate how likely they were to respond negatively or positively to the potential peer described in the questionnaire. The questions aimed to gain understanding on how participants would respond to the described classmate, either positively, that is prosocially or negatively, that is asocially. The questionnaires were purposefully designed for children. Therefore, the wording used in the questionnaires was simple and professional terms, such as "Autism Spectrum Disorders (ASD)", were avoided.

In addition, after they had completed the first page of these questionnaires, all participants were asked to fill in an Empathy questionnaire (EmQue-CA) (Overgaauw et al., 2017). The EmQue-CA is designed to obtain a measure of participants' empathy. All questionnaires were completed with the aid of staff from the tutorial centre. Participants were allowed to ask the accompanying staff to read the questionnaires to them if needed.

After completion, the questionnaires were gathered by the director of the tutorial centre and passed on to the researcher.

Data Analysis

All analyses of the scores were conducted with SPSS Statistics v.25. Independent samples t-tests were used to explore the differences in scores for social responses between the two groups of participants. The differences of social responses were measured by the number of asocial and prosocial responses that were rated by the participants. Two independent sample t-test were used to compare the number of asocial responses and prosocial responses between the two groups of participants in order to investigate how disclosure of an ASD diagnosis may contribute to these differences. In addition, correlation analyses were conducted to study the relationships among gender, grade level, empathy score and social responses. This analysis studied the interactions among these variables and aimed to examine if gender, grade level and empathy score may create an impact on participants' social responses. Results of these analyses are shown and discussed in the next chapter.

Chapter 4: Results

Association Between Disclosure of ASD Diagnosis and Social Response

Analyses of the scores were conducted to explore the between group effect of an ASD diagnosis disclosure and the relationships between the effect of disclosure of an ASD diagnosis and the three external factors (Grade level, gender and empathy score). Participants' prosocial and asocial responses were measured to analyze the effect of disclosure of an ASD diagnosis.

Independent samples t-tests were performed to investigate whether the between group difference was significant. As shown in Table 2, differences in prosocial response were observed between the group which received a disclosure to an ASD diagnosis (*M* =4.09, *SD*= .71, *n*=21) and the group which did not receive the diagnosis (*M* =3.85, *SD*= .75, *n*=22). Between group differences were observed, however, the differences were not statistically significant, *t* (41) = -1.08, *p*=.29. There was no statistically significant between groups difference observed in participants' prosocial response.

As shown in Table 3, the mean score of asocial response of the group which received disclosure of an ASD diagnosis is 2.03 (*SD*= .96, *n*=21) and the group which did not receive disclosure of an ASD diagnosis is 2.29 (*SD*= .81, *n*=22), *t* (41) =.96, *p*=.34. Similar to the result of participants' prosocial response, there was an observed difference in participants' asocial response. However, the differences were not statistically significant at a probability level that might commonly be accepted in social sciences such as $p < .05$. The analyses suggested that participants' responses in this study did not support the hypothesis at a statistically significant level. This will be discussed in the subsequent chapter.

Table 2

Prosocial Response

Independent Sample T-test

	MD	T	df	Sig.(2-tailed)
Equal variances assumed	-.240	-1.077	41.000	.288
Equal variances not assumed	-.240	-1.078	40.998	.287

Table 3

Asocial Response

Independent Sample T-test

	MD	T	df	Sig.(2-tailed)
Equal variances assumed	.260	.967	41.000	.339
Equal variances not assumed	.260	.964	39.344	.341

Associations Among External Factors and Social Response

Correlation analyses were conducted to study the associations among gender, grade level, empathy score and social response. As shown in Table 4, a negative relationship was observed between prosocial response (*M*=3.96, *SD*= .73) and asocial response (*M*=2.16, *SD*=. 89) regardless of the disclosure of an ASD diagnosis, *r*= -.60, *p*=0.01, *n*=43. In the group that did not receive disclosure of a diagnosis, participants who showed more prosocial behaviours and rated less asocial behaviours, *r* =-.55, *p*=.01, *n*=22. The negative correlation was more significant in the group that was exposed to the diagnosis, *r*= -.63, *p*=0.01, *n*=21. These results are interpreted in the subsequent discussion.

Furthermore, participants who showed higher empathy scores ($M = 1.43$, $SD = .34$) demonstrated more prosocial responses ($M=3.96$, $SD=.73$) in both groups, $r=.36$, $p=0.05$, $n=43$. Participants who showed higher empathy scores rated less asocial response, $r=-43$, $p=0.01$, $n=43$. Therefore, significant correlations among empathy scores, prosocial and asocial responses were observed in this study regardless of the disclosure of the diagnosis. It was important to note that the group to which a diagnosis was not disclosed demonstrated a less significant effect between empathy scores and asocial responses (r=-.39, $p=0.01$, $n=22$). On the other hand, the group which received a diagnosis disclosure displayed a strong negative effect between empathy scores and asocial responses, $r=-.56$, $p=0.01$, $n=21$. A similar pattern was observed between empathy scores and prosocial responses. The group which received a diagnosis disclosure showed a stronger correlation (r=. 41, $p=0.01$, $n= 21$) between empathy scores and prosocial responses than the group that was not disclosed to a diagnosis, r=. 36, p=0.01, n=22. The analysis supported that participants' empathy score was a critical indicator of participant's social responses in the present observation. No association was found among grade level and prosocial and asocial responses in this study. Since grade level is an indicator of age, and hence cognitive and social development, this result is further explored in the discussion.

Table 4

Correlations Among Variables

Variable	1	2	3	4	5
1.Prosocial Response	-	-.596**	.217	.163	.355*
2. Asocial Response	-.596**	-	-.324*	-.076	-.434**
3. Gender	.217	-.324*	-	-.054	-.101
4.Grade Level	.163	-.076	-.054	-	.217
5.Empathy	.355*	-.434**	-.101	.217	-

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

To conclude, the results suggested that the participants showed observed differences in their social responses depending on the diagnosis disclosure. However, the differences were not statistically significant; possible reasons will be discussed in the subsequent chapter. In addition, the result presented a positive correlation between empathy scores and prosocial response. A negative correlation was observed between asocial response and prosocial response. The result suggested a possibility of beneficial outcomes of a diagnosis disclosure. Also, consistent with past studies, this study showed a positive correlation between one's empathy score and prosocial responses. The next chapter will provide a more comprehensive analysis of the results.

Chapter 5: Discussion and Conclusion

Research Findings

The primary goal of this study was to investigate if a disclosure of ASD diagnosis promotes peer’s positive social responses. Findings by Bolton and Ault (2018) supported the positive correlation between a disclosure of autism diagnosis and positive social responses in adults and college students. In preparation for the study reported here, limited scholarly resources were found that support the findings of Bolton and Ault (2018). However, based on the results of this study, knowledge of an ASD diagnosis seemed to encourage positive responses toward people who demonstrated ASD traits. This study in part was intended to explore if results consistent with those of Bolton and Ault (2018) would be found but in a younger population in order to further support the possibility of a positive effect of an ASD diagnosis disclosure. In this study, social responses were measured by participants’ cognitive prosocial and asocial responses in terms of their self-rated social responses in given scenario with the aid of questionnaires.

The result of this study showed that participants who were disclosed to an ASD diagnosis achieved higher scores on items on a questionnaire designed to measure prosocial responses and lower asocial response scores compared to participants for whom the ASD diagnosis was not divulged. The analysis of the data indicated that there was not a statistically significant between-group difference. The observed difference, however, may suggest a trend of positive effect of ASD diagnosis disclosure. This result would appear be supportive to the findings of Bolton and Ault (2018) which suggested that disclosure of an autism diagnosis promotes positive social responses. Bolton and Ault

(2018) focused on the effect on adult participants. The results of this study indicated that similar finding may be observed in primary and middle school-aged children.

A negative relationship was found between participants' prosocial and asocial responses regardless of the disclosure of an ASD diagnosis. It was worthwhile to note that participants who received a disclosure of ASD diagnosis demonstrated a more significant negative relationship between prosocial and asocial responses. This observation suggested that to some extent, a disclosure of ASD diagnoses may have an effect on increasing prosocial and decreasing asocial responses. The current result showed similar findings as Gillespie-Lynch et al. (2015), which agreed that increased knowledge of ASD may encourage positive responses and reduce stigma, and hence diminish negative responses. It is important to emphasize that knowledge of a diagnosis and knowledge concerning the nature of the diagnosed condition are related but not the same. This study measured only the effect of assigning a label to help explain observed behaviour. Consistent with past results of Decety and colleagues (2016), significant effect of empathy on one's social responses was observed in this study. It was found that participants' empathy level was positively correlated to their prosocial responses and negatively correlated to their asocial responses.

Also, it is also essential to note that due to the difficulty in recruiting more participants. This study had to include participants from 5 grade levels in order obtain enough participants to carry on with this study. However, careful considerations on participants' characteristics, such as literacy skill, were made prior to the decision on the grade level criteria of this study.

To conclude, observed findings of this study showed similar pattern as Bolton and Ault's (2018) study, which suggested that a disclosure of ASD diagnosis may foster positive social responses toward individuals with ASD. The findings reported here also supported the positive relationship between increased knowledge of ASD, indicated here in terms of providing a label to explain the described behaviour. This potential increase in understanding possible reasons for those behaviours resulted in promoting positive social responses. Furthermore, the result indicated the importance of participants' level of empathy on participants' social responses. Although a lot of meaningful findings were drawn from this study, there were a few limitations of this study which will be discussed below.

Limitation of the Study

Although correlations and differences were found between the participants based on disclosure or non-disclosure of an ASD diagnosis, there were limitations that must be noted. The generalizability of the results of this study are limited by the small sample size. A more thorough investigation and analysis was planned prior to the recruiting process. However, after a comprehensive search of participants, there was only one organization was willing to take part in this study. This in itself may be useful information in that it may be indicative of the stigma discussed earlier. Besides hindering generalizability, the small sample size limited the intensity of analysis. Initially, the author proposed to recruit at least 100 participants from various organizations in order to conduct a detailed regression analysis. However, due to the limited number of participants, an extensive regression analysis was not feasible, therefore, less complicated analyses were undertaken. Besides, due to the small sample size, it was not feasible to include more external variables such as additional demographic information to enrich the analysis of this study. Future research, with a larger sample, may yield additional important insights and relationships between variables.

Furthermore, in this study, the term "ASD" was used to describe people who demonstrated autistic features. The terms "ASD" and "Autism" were often used interchangeably in scholarly articles. In Bolton and Ault's (2018) study, the term "Autism" was used throughout the study when they were describing people who demonstrated autistic features. However, the possible effects between the implied meaning of the label of "ASD' versus the label "Autism" is unknown. As "ASD" was a relatively new term to describe people who fulfilled the diagnosis criteria in DSM-5, people may not be aware "ASD" is a new term that is used to describe people with "autism". The confusion or misconception of the terms may have implications for the results of the study. Due to the consideration of young participants in this study, they may never have heard the term of ASD or Autism Spectrum Disorder. Therefore, the term "Autism", instead of "ASD", was used in the questionnaires. The possibility that the two terms may elicit different outcomes was not investigated in this study, but any confusion would have been consistent across the two groups.

In addition, as mentioned in the previous chapter, the author was not able to access an accredited or standardized research instrument to measure positive and negative responses to a person with atypical behaviours. As a matter of convenience, a self- made research instrument was used. Since both groups of participants used versions of the same questionnaire, the result of this study was still promising in revealing between group differences. Suggestions to improve the current constraints in future studies were discussed in next section.

Implication for Future Research

This exploratory study provided meaningful insight to enrich the knowledge of the effect of ASD diagnoses disclosure. Although the result did not suggest a statistically significant between-group difference, the observed difference may indicate a positive trend of interaction between ASD diagnosis disclosure and peer's social response. Future research may be done to understand the effect of an ASD diagnosis disclosure holistically. First of all, it would be valuable to replicate this study in a larger sample size and conduct a more robust analysis. A regression analysis might be a more ideal tool to understand how each external factor contributes to the effect of an ASD diagnosis disclosure. The present study was greatly bounded by its small sample size and it was not capable to generate reliable statistics for analysis.

In addition, it will be worthwhile to explore the effect of an ASD diagnosis disclosure in teenagers. This study decided to focus on elementary school-aged children as Bolton and Ault (2018) studied the effect of ASD diagnosis disclosure in adult. It will be worthy to investigate if the effect would be generalized across age groups. Furthermore, little effect was observed between genders in this study. However, as people with ASD are predominantly male, it might be constructive to find out if gender differences influence ASD diagnosis disclosure in a larger sample.

Conclusion

Although the present study was bounded by its small sample size, this study found observed differences in participants’ social responses with the influence of ASD diagnosis disclosure. This result of the study may suggest a likelihood that a disclosure of ASD diagnosis may encourage positive social responses. However, a more meticulous analysis is needed in the future to develop a more generalizable result. This study also suggested that one’s positive and negative social responses were strongly correlated to one’s empathy score. It is hoped that the present findings may contribute to future studies in this area. The fact that it was difficult to obtain a larger sample size may, in itself, speak to the sensitivity surrounding the issue of labeling.

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APPENDIX A

QUESTIONNAIRES

Questionnaire-Version A

Grade 3 / 4/ 5/ 6/ 7 (Circle one)

Boy/ Girl (Circle one)

Imagine you are working on an assignment with a classmate. The classmate's name is Y. Y is sitting next to you. Suddenly, Y stands up and flaps hands. You asked Y, "What's wrong?" Y does not answer you and look away.

You are going to answer the following questions, pick the number that shows how likely you will do what the sentence describes. (Circle one number for each sentence)

	Very Likely	Likely	Maybe	Not likely	Not likely at all
1) I will play with Y during recess	5	4	3	2	1
2) I will ask for a change of partner	5	4	3	2	1
3)I will be upset by Y	5	4	3	2	1
4)I will work nicely with Y	5	4	3	2	1
5)I will be friend with Y	5	4	3	2	1
6)I will help Y when Y needs help	5	4	3	2	1
7)I will ask Y if Y is okay	5	4	3	2	1
8)I will move myself away from Y	5	4	3	2	1

Questionnaire-Version B

Grade 3 / 4/ 5/ 6/ 7 (Circle one)

Boy/ Girl (Circle one)

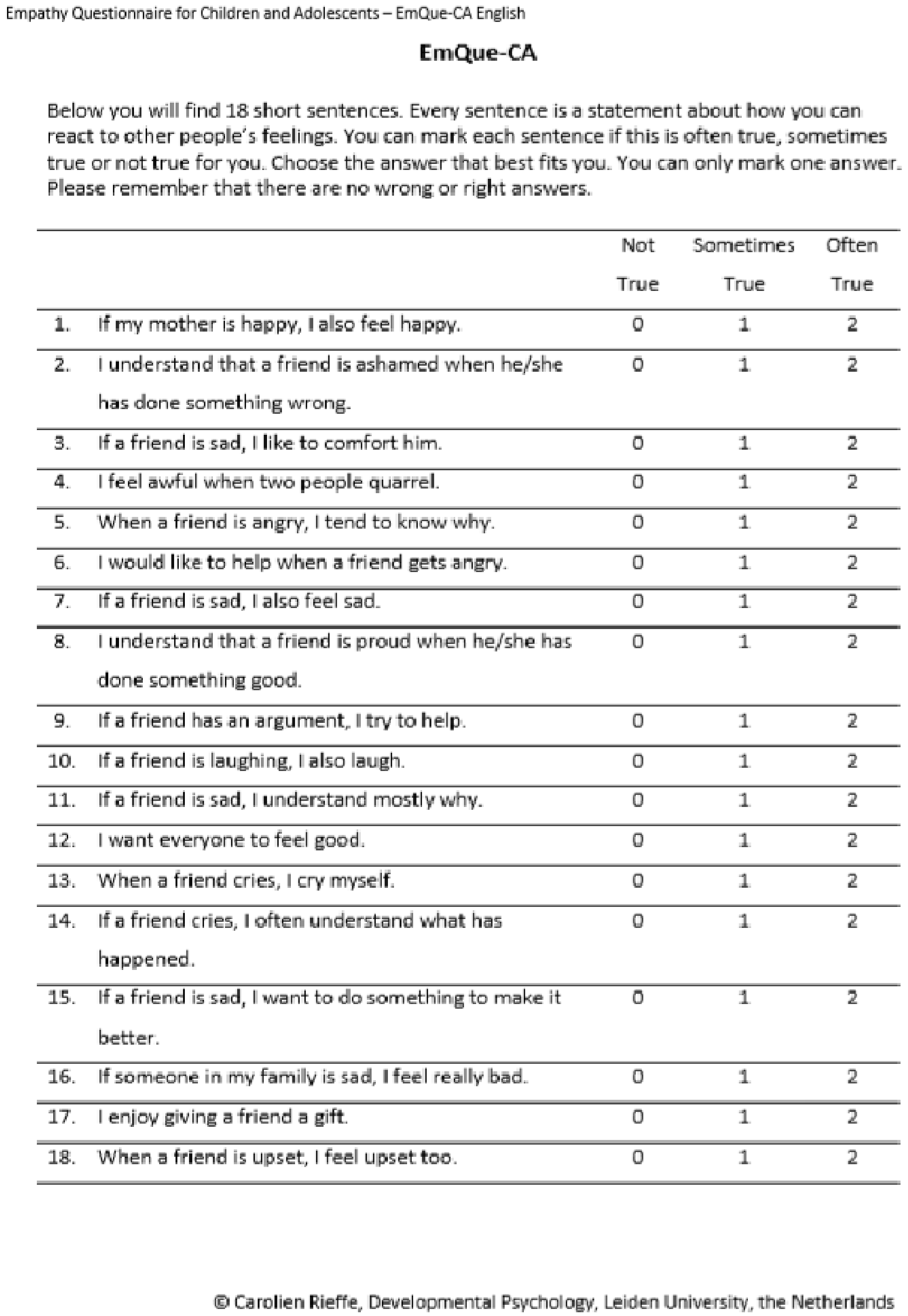
Imagine you are working on an assignment with a classmate. The classmate's name is Y. Y has Autism. People who have Autism have trouble understanding what other's think and feel. They might not able to tell you how they feel and think too. Y is sitting next to you. Suddenly, Y stands up and flaps hands. You asked Y, "What's wrong?" Y does not answer you and looked away.

You are going to answer the following questions, pick the number that matches what you will do,

	Very Likely	Likely	Maybe	Not likely	Not likely at all
1) I will play with Y during recess	5	4	3	2	1
2) I will ask for a change of partner	5	4	3	2	1
3)I will be upset by Y	5	4	3	2	1
4)I will work nicely with Y	5	4	3	2	1
5)I will be friend with Y	5	4	3	2	1
6)I will help Y when Y needs help	5	4	3	2	1
7)I will ask Y if Y is okay	5	4	3	2	1
8)I will move myself away from Y	5	4	3	2	1

APPENDIX B

EMPATHY QUESTIONNAIRE



Empathy Questionnaire for Children and Adolescents – EmQue-CA English

EmQue-CA

Below you will find 18 short sentences. Every sentence is a statement about how you can react to other people's feelings. You can mark each sentence if this is often true, sometimes true or not true for you. Choose the answer that best fits you. You can only mark one answer. Please remember that there are no wrong or right answers.

		Not True	Sometimes True	Often True
1.	If my mother is happy, I also feel happy.	0	1	2
2.	I understand that a friend is ashamed when he/she has done something wrong.	0	1	2
3.	If a friend is sad, I like to comfort him.	0	1	2
4.	I feel awful when two people quarrel.	0	1	2
5.	When a friend is angry, I tend to know why.	0	1	2
6.	I would like to help when a friend gets angry.	0	1	2
7.	If a friend is sad, I also feel sad.	0	1	2
8.	I understand that a friend is proud when he/she has done something good.	0	1	2
9.	If a friend has an argument, I try to help.	0	1	2
10.	If a friend is laughing, I also laugh.	0	1	2
11.	If a friend is sad, I understand mostly why.	0	1	2
12.	I want everyone to feel good.	0	1	2
13.	When a friend cries, I cry myself.	0	1	2
14.	If a friend cries, I often understand what has happened.	0	1	2
15.	If a friend is sad, I want to do something to make it better.	0	1	2
16.	If someone in my family is sad, I feel really bad.	0	1	2
17.	I enjoy giving a friend a gift.	0	1	2
18.	When a friend is upset, I feel upset too.	0	1	2

APPENDIX C

PARENTAL CONSENT FORM

Disclosure of Autism Diagnosis and Peer's Social Response

Dear Parent or Guardian:

This letter is a invitation for students of ___________________________________ assistance with a project I am conducting as part of my Master's degree(Master of Arts-Special Education) in the School of Education at Trinity Western University.

Principal Investigator: Jasmine Lee

Email address:

Phone number:

Supervisor:

Email address:

Phone number:

Purpose: People with Autism are characterized by their social challenges. Previous research suggested student with Autism experience less positive social interaction than their typically developed peers. This study aims to explore the effect of disclosure of Autism diagnosis on peer's social response. Research in similar area found that there is an increase in positive social response when the diagnosis is disclosed to the peers. This mentioned research was focused on adult participants. This research will examine if the same result will be found in a different age group. This study will investigate the relationship between disclosure of Autism diagnosis and peer's social response in Grade 3 to Grade 7 students. The purpose of this research is to gain a pioneer idea if disclosure of Autism to peers can be a feasible way to increase peers' positive social response towards students with Autism.

Procedures: The participating students will be asked to fill in a questionnaire. He/She will be asked to read the questions on the questionnaire and rate their answer on a 5-point scale. Student will be given 15 minutes to complete the questionnaire. Staff will collect the completed questionnaires and return them to the principal investigator.

Compensation: Participants of this study will enter a draw for a $30 gift card from Chapters. Participants who withdraw from the study will be excluded from the draw. Winner of the draw will be contacted through email when the study is completed.

Potential Risks and Discomforts: Participants will experience minimal risk in this study. Participants should experience no pain or physical danger and no emotional arousal or psychological stress beyond expected level in daily life.

Potential Benefits to Participants and/or to Society: As there are increasing number of students with Autism are included in the classroom, research on practical inclusion is beneficial to both neurodiverse and typically developed students. Positive social response is essential to quality social development. The result of this research will provide an exploratory understanding about the effect of disclosure of Autism diagnosis. I hope this research will be beneficial to each of the participants, schools and the society.

Confidentiality*:* *Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. All data record on a computer hard disk will be secured by a password and the name of the files will be coded. Research participants will not be identified by name in any reports of the completed study. The data of this research will be stored anonymously for future use.*

Contact for information about the study: If you have any questions or desire further information with respect to this study, you may contact Jasmine Lee at (author's email).

Contact for concerns about the rights of research participants: If you have any concerns about your treatment or rights as a research participant, you may contact Elizabeth Kreiter in the Office of Research, Trinity Western University at 604-513-2167 or researchethicsboard@twu.ca.

Consent: Your participation in this study is entirely voluntary. You may refuse to participate or withdraw from the study within two weeks from the date that the participant filled in the questionnaires. When the data is collected and entered into data analysis, there would be no way for the researcher to determine which score is provided by the participant.

For withdrawal from the study, please email the principal investigator, Jasmine Lee at (author's email) with the participant's name and grade level within two weeks from the questionnaire is filled in. Data gathered from the participants who withdraw will be destroyed permanently.

Signatures

Your signature below indicates that you have had your questions about the study answered to your satisfaction and have received a copy of this consent form for your own records.

Your signature indicates that you consent to participate in this study and that your responses may be put in anonymous form and kept for further use after the completion of this study.

***I consent/ I do not consent* (circle one) to my child's participation in this study.**

Parent or Guardian Signature Date

Printed Name of the Parent or Guardian signing above

Parent or Guardian's email

I want to receive the debriefing letter in electronic(email) / paper form. **(Circle one)**

I want to receive the result of this study. (Through email) Yes/ No **(Circle one)**