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Will adolescents with Neurodevelopmental difficulties differ in mental well-being and mental health problems in relation to Other disabilities?

From the perspective of a Swedish study

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ABSTRACT

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Main title: Will Adolescents with NDD differ in relation to other disabilities? Results of well-being and mental health problems from a Swedish study

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Purpose: Neurodevelopmental difficulties are correlated with lower mental well-being and more mental health problems. Issues in social relations such as bullying are a prominent risk factor in a social setting of high school, has also been associated with the status of disability. This thesis investigated the relation between mental health problems, mental well-being, and bullying in adolescents with self-reported neurodevelopmental difficulties and compared these with adolescents with Other disabilities.
Materials and methods: Data from a Swedish longitudinal survey study (LoRDIA) was used. Mental health problems were measured through emotional and conduct problems scales of SDQ, mental well-being was measured with MHC-SF, and a bullying questionnaire was used.
Results: Adolescents with NDD experience more bullying victimization and perpetration than adolescents with Other disabilities such as physical disability and autoimmune diseases. Significant association to bullying perpetration was found in NDD adolescents. Adolescents with Other disabilities indicated high mental well-being compared to NDD. While gender predicts high mental well-being, disability and emotional problems have a negative relation with it.
Conclusion: Adolescents with NDD report more bullying victimization and perpetration experiences in comparison to adolescents with Other disabilities. Emotional problems have an inverse relation for predicting high mental well-being for adolescents with NDD and Other disabilities.

Keywords: Neurodevelopmental difficulties, Other disabilities, physical and autoimmune diseases, bullying, victimization, perpetration, mental health problems, emotional problems, mental well-being, Bioecological model, Process-person-context-time PPCT, neurodiversity

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1 Introduction

Having a disability has, in previous research, been related to lower mental well-being and more mental health problems. Issues in social relations such as bullying, have also been associated with the status of disability. On one hand bullying has been considered a risk factor for adolescents with disabilities independent of the type of their disability. While on the other, adolescents with neurodevelopmental difficulties are said to differ arguably from other type of chronic conditions such as physical disabilities and autoimmune disabilities (Maiano et al., 2016; Rose et al., 2016; Rose & Gage, 2016).

A relatively high prevalence of mental health problems in adolescents with neurodevelopmental difficulties (NDD) is considered a risk factor for these individuals (Augustine et al., 2021). In adolescents with Other disabilities mainly physical and autoimmune diseases, prevalence of mental health problems has been discussed as a risk factor which affects psychosocial well-being resulting in poorer psychosocial functioning and mental health functioning (King et al., 2013; Tough et al., 2017). This group will be classified as *Other disabilities* in this study.

Central to the prevalence of mental health problems, other crucial contextual aspects of their lives such as school and peers must be taken into consideration. A prominent risk factor of bullying prevails in a social setting of high school (Runions et al., 2020). Higher prevalence of both bullying victimization and perpetration in NDD adolescents has been reported by two recent systematic reviews (Hellström, 2019; Maiano et al., 2016). It is also suggested that adolescents with NDD face accentuated bullying victimization due to deficits in cognitive, adaptive, and social skills which result in mental health problems and thus affect their mental well-being (American Psychological Association [APA], 2013; Maiano et al., 2016; WHO, 2018). However, not only those with NDD, individuals with Other disabilities are reported having high levels of victimization which relates to higher levels of mental health problems (Rose et al., 2015).

In both cases, individual characteristics associated to NDD and Other disabilities place these adolescents at an escalated risk within the bullying dynamic (Rose & Gage, 2016). However, the crucial need to study if both bullying victimization and perpetration persist at a higher rate in adolescents with NDD than in adolescents with Other disabilities, is central to this study. This argument reflects the understanding that *being different increases the risk for victimization for adolescents with NDD. This difference is primarily in individual characteristics and specific behaviour that may put these individuals especially at risk* (Forrest et al., 2020).

2 Background

The Concept of Disability

Traditionally, disability was viewed as an attribute of a person considered to be deviated from normal, summing up to the medical model of disability which mainly focused on cure and rehabilitation (Lygnegård, 2018). As described by Altman (2001), disability is dependent on the context in which it is viewed. The biopsychosocial model of disability introduced during the 1970s was the first model which offered a shift from this individual perspective to the broader societal level where disability was sketched as a social phenomenon in addition to the earlier medical approach (Engel, 1977). According to World Health Organization [WHO] (2001), *disability* is '*the outcome or result of a complex relationship between an individual's health condition, personal factors, and external factors which represent the circumstances in which the individual lives'*. This multidimensional integrative approach is an extension to the biological aspects, incorporates the psychological and social influences of impairment and disability (WHO, 2007).

Haller et al., (2014) argue that individuals who experience psychopathological symptoms which are relatively mild, atypical, and/or brief but recurrent in nature may not reach the attention of the diagnostic systems such as World Health Organizations' International Classification of Diseases (ICD) and the Diagnostic and Statistical Manual of Mental Disorders (DSM). This is due to their criteria for the number and/or duration of standardized diagnostic thresholds. The lack of standardized definition of these states leads to marginalization despite their significant suffering and impairment (Barlow & Campbell, 2000, as cited in Haller et al., 2014). . Individuals suffering from substantial functional impairment who do not meet the diagnostic criteria are classified under 'subthreshold disorders' (Balázs et al., 2013). Not merely just *artefacts from potentially outdated definitions*, these psychopathological symptoms demand recognition (Helmchen & Linden, 2000, as cited in Balázs et al., 2013). Subsequently, the present thesis has utilized data from all adolescent responders who self-reported their disabilities as neurodevelopmental difficulties (NDD) and Other disabilities. Self-reports may therefore help to investigate and understand the adolescents' psychopathological symptoms and social life situation based on their self-reported experiences and disability (Lygnegård et al., 2018).

Neurodevelopmental Difficulties (NDD)

Neurodevelopmental disorders, in this thesis are operationalized as Neurodevelopmental Difficulties (NDD). Adolescent participants self-reported themselves as having neurodevelopmental difficulties which are not diagnosed but 'sub-threshold' difficulties (see *Concept of Disability*). These, however, are substantial functional impairments categorised as neurodevelopmental disorders. Neurodevelopmental disorders as listed in the Diagnostic Statistical Manual of Mental Disorders (DSM-5), is an umbrella term for numerous conditions that have an early onset in the developmental period (American Psychiatric Association [APA], 2013). These disorders have conditions associated primarily to functioning of the neurological system and the brain (Granlund et al., 2021). Some of these conditions are intellectual disability, autism spectrum disorders (ASD), attention-deficit/hyperactivity disorders (ADHD), and specific learning and motor disorders (APA, 2013). Even though the diagnostic criterion of each disorder is unique, an individual with any certain disorder can often have an overlap of disorders and can have more than one neurodevelopmental disorder. For a diagnosis, a pattern of signs and symptoms in an individual are observed which could be associated to the impairment concerning psychological and social functioning as per the criterion described by DSM-5 and International Classification of Disease (ICD-11) (APA, 2013; World Health Organization [WHO], 2017). These diagnostic systems describe neurodevelopmental disorders as *cognitive and behavioral disorders which arise during the developmental period. These developmental deficits involve acquisition and execution of specific intellectual, motor, language, or social functions. The grouping of these disorders is done according to their core feature of being neurodevelopmental'* (WHO, 2017).

Children and adolescents may have problems relevant to the criteria for NDD even without any severe symptoms which may prompt a diagnosis but may fall under sub-threshold disability status based on adolescent self-reports (Lygnegård, 2018). In this thesis, all adolescents who have self-reported themselves as having neurodevelopmental difficulties are classified in the NDD group regardless of a diagnosis, however at least a self-report of moderate disability was required for an individual to qualify to be in the neurodevelopmental difficulties group (Augustine et al., 2021). The idea behind this selection criteria refers to differences in individual brain function and behavioral traits. Unique characteristics may be regarded as normal variation in the general population which are not '*atypical developmental pathways*' (Kapp et al., 2013). This understanding is referred to as '*neurodiversity*', which points to a different way of brain wiring than 'wrongly'. Adolescents with such differences may not only possess impairments in

cognitive processing but also experience limitations in individual capacities. On one hand, this may hinder their meaningful engagement in the wider society. While on the other, when envisioned through the lens of neurodiversity highlights individual talents and abilities which require supportive environment and awareness (Knight, 2018). The prevalence of these conditions subject to definitional differences and are self-reliant as disclosure from the individuals is necessary due to the nature of condition to be specific. This thesis refers to such self-reliant differences and difficulties in neurodiverse conditions which do not qualify for atypical diagnostic criteria, however, recognizes the extent of these challenges. Self-reports of adolescents 'subthreshold' difficulties (Lygnegård, 2018) help to provide opportunities of acceptance and recognition of some impairment difficulties as well as support the neurodiverse culture (Clouder et al., 2020).

Other Disabilities

In this thesis, 'Other disabilities' describe those with physical or autoimmune conditions that do not have NDD. Based on the dataset used for the present thesis, adolescents with self-reported Other disabilities have conditions such as diabetes, visual impairment, motor impairment, and allergies. These reported impairments were free of neurodevelopmental comorbidities. (Lygnegård et al., 2018).

Individuals with physical disability and chronic conditions who have functional limitations or bodily impairments are generally deprived in their opportunities. These restrictions are related to their social life and may also affect their health and well-being (Tough et al., 2017). Adolescents with physical disabilities face increased risk for psychosocial functioning compared to their peers without disabilities. Studies focused on psychosocial well-being address aspects of mental health problems and overall maladjustment of adolescents with physical disabilities (King et al., 2013). Impairments or diseases in adolescence can result in an increased risk of negative life-outcomes and this can affect their mental health and well-being (Statens Folkhälsoinstitut, 2011). These adolescents also face social challenges such as peer discrimination and bullying and are often stigmatized due to their condition (Emerson et al., 2009).

On the contrary, WHO emphasizes that although impairments are '*part of the expression of a health condition*', such an individual may not always be regarded as sick (WHO, 2007). Consequently, according to Dunn et al., (2009) many individuals with physical disability report relatively favourable levels of well-being once they adjust to impairment and attain the ability to cope with their situation. Individuals with autoimmune diseases along with their families

often learn to anticipate and adjust to psychosocial and bodily changes. Nevertheless, impairments and diseases impose restrictions and compromise in mobility and activity which in turn can have psychological consequences such as depressive symptoms and problem behaviors and thus need to be addressed (Dunn et al., 2009). Literature is scarce on how these restrictions of physical disabilities and autoimmune diseases manifest in adolescence with recurrent biological changes compared to adolescents with neurodevelopmental difficulties.

Mental health in Adolescence

WHO defines health as '*A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity*'(WHO, 2014). This definition of health equates to the concept of well-being and provides an impetus to consider many correlating aspects of the individual's mental health which are beyond diagnosis as many problems tend to take place irrespective of a diagnosis (Granlund et al., 2021; Lygnegård et al., 2018). Moreover, through this concept WHO focuses on the understanding of health as more than just the absence of mental health problems (Boson et al., 2016). While in the literature, absence of psychiatric diagnoses and mental health problems have been frequently used to investigate mental health among adolescents (Boson, 2018). Emotional and behavioral problems screenings are often used to examine the individual's status of mental health as poor mental health reduces everyday functioning in terms of life opportunities, social networks, and school achievement (Currie et al., 2009; Gillham et al., 2002). Although medical literature has defined mental health as the absence of mental health problems, researchers like Westerhof and Keyes (2009) suggest that mental health is a positive phenomenon which must be understood beyond a mere absence of mental health problems (Granlund et al., 2021). Therefore, identification of mental well-being may warrant further clarification for the NDD population of this study due to the classification of NDD as a psychiatric diagnosis (see *Neurodevelopmental Difficulties*).

The WHO's definition for mental health may be challenging to be operationalized for adolescents within NDD spectrum and for Other disabilities. This definition demands many abilities to exist in an individual such as '*realizing abilities, cope with stress, work productively, and make a contribution to society'* (Granlund et al., 2021). Further adding to these shortcomings are the social demands which are associated to life roles transition into adulthood relate to the adolescents' mental functions and linked to one's identity as well as body. In adolescence. the experiences of the school context are vital to understand the social forces at play. Literature testifies to an increase in emotional functioning and problematic behavior such as distress and

anger during early and middle adolescence (Lygnegård et al., 2018). Despite these issues, it is crucial to understand how individuals maintain a balance between challenges and resources to bolster well-being (Granlund et al., 2021).

Mental Health Problems

Mental health problems as defined by Granlund et al., (2021) is '*a broad concept covering both less serious mental strain and more severe symptoms, fulfilling criteria for a diagnosable mental illness*' (Bremberg & Dalman, as cited in Granlund et al., 2021, p. 3). Mental health problems as a separate construct however partly overlaps the construct of mental illness. Mental health problems can be seen as mental illnesses based on their severity and intensity. However, the measure of their severity as to what extent these can be considered severe enough is questionable (Granlund et al., 2021). Although the word '*mental illness'* has been used widely in everyday language to describe mental disorders such as NDD with its further classification under mental disorders in ICD-11. It is still crucial to differentiate between mental health problems and NDD and separate these from mental disorders (Granlund et al., 2021).

One reason for the need to differentiate between mental health problems and NDD is that mental health problems often vary over the course of life, while NDD will vary in severity but usually are permanent. Adolescence in contrast, is a period of biological and life role changes and expectations in which a rise in mental health problems is surmisable. This fluctuation in the experiences of mental health problems exist for all individuals and may vary from no problems to severe mental health problems (Granlund et al., 2021). These can have a large effect on an individual's quality of life even more so than the disability itself and also exacerbate long-term health conditions (Naylor, 2013). In this thesis, a narrower definition of mental health problems is used to focus on emotional and conduct problems experienced by adolescents. According to the dataset used for this study, these experiences are based on self-reports of mental health problems of adolescents with NDD and Other disabilities.

A considerable amount of literature on mental well-being evaluating mental health problems indicate an increase in self-reported mental health problems such as anxiety and depression among Swedish adolescents (Heimersson et al., 2013). Mental health problems have also been strongly associated with experiences of bullying particularly stress and depression (Runions et al., 2020). Within the school settings, reports of mental health problems in adolescents have been used as proxies to identify mental health problems as well as to recognize mental health and well-being status (Berntsson et al., 2001).

Bullying

Bullying as defined by Olweus (2013) as '*a form of aggressive behavior towards someone else which is intentional, repetitive, and causes discomfort, harm, or distress'*. This implies a relational *power imbalance*, a victim who can hardly defend him/herself is negatively treated by the bully. This dynamic interaction between at least two persons occurs in multiple settings while for adolescents where it occurs most often is within the school setting (Maiano et al., 2016). Many factors contribute to a heightened risk for bullying harassment and victimization for youth with disabilities. Youth's characteristics may be attributed to the potential heightened risk and negative effects. These characteristics may include: (a) physical appearance (visible traits); (b) restricted social network; (c) lack in social and problem-solving skills; (d) intelligence; (e) academic ability; (f) personality traits; (g) contextual factors e.g., homelife which may lead to (h) risky behaviours; (i) prior neglect; and (j) personal status (Maiano et al., 2016; Rose et al., 2011). Experiences of bullying victimization may pose serious threats to adolescent's mental health such as suicide and suicidal behaviors including overall psychological health. Both short and long-term harmful consequences may occur due to bullying exposure. Research in the field of bullying has grown many folds since the 1990s consequently increasing the number of methods to measure bullying and the experiences of both victims and perpetrators. Self-reports of bullying victimization and perpetration are the most common form of assessment of bullying (Bjereld et al., 2020).

An extensive amount of literature from the past few decades indicates the negative affects of involvement in bullying on the mental health of adolescents (Gini & Pozzoli, 2009; Hawker & Boulton, 2000). Victims of bullying are said to report more emotional problems such as worry, depression, and anxiety compared to perpetrators and individuals who are both victim-perpetrator (Beckman et al., 2012). There is evidence that perpetrators may also actually suffer from multiple mental health problems such as depressive symptoms just as much as victims or even more so (Kaltiala-Heino et al., 2000). Other studies identified the vulnerability to behavioural, developmental, and emotional problems (Van Cleave & Davis, 2006, as cited in Beckman et al., 2016).

3 Theoretical Framework

Mental Well-being

Research on mental well-being has presented two distinct philosophical traditions of hedonic and eudemonic well-being (Witten et al., 2019). Previously Ryan and Deci, (2001) organized the field of well-being where the first tradition refers to happiness and the latter refers to purpose of life and self-realization in terms of the extent to which an individual functions optimally in life areas (Keyes et al., 2002; Ryan & Deci, 2001).

Keyes et al., (2002) combined the two traditions and proposed a multidimensional concept of well-being within positive psychology by further explaining three perspectives. Keyes proposed mental health as three partly overlapping dimensions; emotional well-being, psychological well-being, social well-being (Boson et al., 2016; Keyes, 2005). Emotional is defined as 'perceived satisfaction in life by entailing positive affect'. Psychological well-being is based on six key dimensions of well-being which are self-acceptance, purpose in life, positive relationships, personal growth, autonomy, and environmental mastery (Ryff & Singer, 1996). Lastly, social well-being refers to five dimensions of social acceptance, social contribution, social actualization, social coherence, and social integration (Keyes, 1998). The two-factor modelling of well-being represents hedonic well-being corresponding to emotional (subjective) well-being and psychological and social well-being as the eudemonic tradition of well-being (Granlund et al., 2021).

Partly described as good functioning, the concept of well-being dictates one's command over the balance between the resources and challenges of life. This approach can be applied on adults as well as adolescents, and thus on ones' with NDD and Other disabilities. The two broad perspectives of hedonic and eudemonic well-being concern the positive emotional states of 'happiness or pleasure' (living in pleasant life), and to 'strive to achieve something more' such as personal growth (living a meaningful or goal-directed life). Adolescents with NDD and Other disabilities may be restricted in eudemonic elements due to restrictions in a range of expressions and may require significant support from others. However, they are not excluded from the experience by definition and understanding of the construct of well-being (Granlund et al., 2021). Even though the experiences of difficulties must not be underestimated, a supportive neurodiverse culture recognizes the individual capabilities through inclusion, which may provide meaningful opportunities of experiencing well-being (Clouder et al., 2020).

Ryff & Singer (1996) stated that the presence of distress/mental health problems may influence mental well-being (Ruini et al., 2009). This refers to the two continua model of Keyes (2005; 2007) which mandates the combined diagnosis of mental health and much serious mental health problems known as mental illnesses (see *Mental Health Problems*). This model highlights the importance of focusing on the assessment of mental well-being as vital to the assessment of mental health problems (Lamers et al., 2011).

Using the Bioecological Model

The *Process-Person-Context-Time* (PPCT) model of the Bronfenbrenner's bioecological theory (Bronfenbrenner & Evans, 2000a) describes the life-time changes as an interrelated conceptualization of person, context, and processes, where person and context are included over time.

The central element is the *proximal processes* in the PPCT model where most interactions between the child and the surrounding environment take place for instance, child and child, child and parents, or child and objects. While these proximal processes operate over time, these are considered to derive human development and life functioning. The influence however is dependent on the characteristics of the individual at *person* level, the *context*, both immediate and distant, and the *time* at and in which the proximal processes take place (Bronfenbrenner & Morris, 1998). These processes are vital prerequisites for the optimal development of the child and an adolescent and even so for an individual whose developmental pace is slow due to any limitations. The acknowledgement of the biological and genetic aspects of an individual within PPCT have been presented simultaneously with much more attention towards the social encapsulation of the individual's personal characteristics (Lygnegård, 2018). *Microsystems* which are central to *context* or environment is where the adolescent spends the most time such as at school or within the peer group. This system will be considered as a focus for this study proposal.

The concept of *time* in the PPCT is defined on three levels; micro-time (occurring within an interaction), meso-time (level of consistency within environment and interactions), and macro-time (changes which take place over time). Due to the cross-sectional nature of the current study, micro-time level will be encapsulated to observe bullying in a specific period of time (Bronfenbrenner & Morris, 1998). Although, bullying is also conceptualized at meso-time as a relational issue when relationships between bully, victim, and bully-victim evolve over time and move into more consolidated roles (Craig et al., 2016).

The Process-Person-Context-Time (PPCT) model will further provide a framework for the proposed study to understand the person based biological characteristics of demand (e.g.,

age, gender, disability), resources (e.g., mental, emotional resources), and force (e.g., temperament) characteristics. Tudge et al. (2009) argue that an individual can influence the environment through their characteristics. The evaluation of adolescent bullying involvement through PPCT model has been discussed in previous literature (Smokowski & Evans, 2019; Turner et al., 2013). Through the application of person-level of PPCT, the understanding of adolescents' reports of mental health problems and mental well-being will help in further summarizing the context and time levels' interactions of the bullying dynamic.

4 Rationale

The association of the bullying dynamic with mental health problems has been persistently examined in past literature highlighting that adolescents which are exposed to bullying as either victims or perpetrators, experience mental health problems such as anxiety, depression, self-harm, and suicidal ideation (Klomek et al., 2011; Runions et al., 2020; Tough et al., 2017). Several recent studies have examined the combination of bullying victimization and perpetration in adolescents with disabilities within a disability type or in comparison to adolescents without disabilities (Chou et al., 2018; Gage et al., 2021; Lebrun-Harris et al., 2019).

The likelihood of being more predisposed to mental health problems for adolescents with NDD has been a point of debate and a growing concern (Aldao & Nolen-Hoeksema, 2012; Tajik-Parvinchi et al., 2021). Nevertheless, the presumption that the presence of neurodevelopmental difficulties or other disabilities in adolescents put them on the necessary risk of mental health problems needs to be reconsidered (Granlund et al., 2021). Alongside studies which witness the prevalence of mental health problems in adolescents with NDD and Other disabilities, there is also evidence that adolescents tend to do fair when it comes to their mental health. This points to the adolescent's ability to cope and adjust to the impairment (see *Other disabilities*). As conferred by Augustine et al., (2021, p. 2), '*Mental health problems are a normal part of people's lives, but so is mental health*'. Despite the prejudice of being more prone to mental health problems, this thesis proposes the parallel need to study the mental well-being of individuals with NDD and Other disabilities.

Keyes et al., (2006) proposed well-being as a measure on a low to high well-being scale with a third middle group identified as a moderate group. As NDDs are classified as a mental disorder by International Classification of Diseases (ICD-11) (WHO, 2017), if mental disorders would lead to lower well-being, this study will find lower well-being in adolescents with NDD

than in Other disabilities while controlling for other factors of relevance, such as bullying victimization.

On the other hand, as it is conferred by Granlund et al., (2021), not all mental disorders overlap with mental health problems. Therefore, if the dimensions of well-being can be applied to general population with and without disabilities (Granlund et al., 2021), it is possible to examine well-being of adolescents with NDD in comparison with Other disabilities. Bullying is a repetitive phenomenon (Olweus, 2013) which is not affixed to a particular time-point (Smokowski & Evans, 2019). The study of bullying as a risk factor for mental health problems in the present study may help in identifying the association between bullying, mental health problems, and mental well-being in a cross-sectional manner.

Studies focused on Swedish adolescents indicate high prevalence of well-being, while on the contrary other studies examining mental health problems showed an increase in self-reported mental health problems such as anxiety and depression in Swedish adolescents (Boson et al., 2016). In a study by Health Behavior in School-aged Children (HBSC), the Swedish Public Health Agency indicated an increase in self-reported mental health problems, such as psychosomatic complaints, among middle adolescence 13- and 15-year-old. This increase is about 15 to 31 percent for both boys and girls (higher), which is increased over time in Sweden than similar countries (Folkhälsomyndigheten, 2018). This self-reported increase in mental health problems mainly psychosomatic complaints and through internalizing and externalizing problems scales of Strengths and Difficulties Questionnaire (SDQ) is further witnessed by other studies (Boson et al., 2016; Frisenstam et al., 2017; van Geelen & Hagquist, 2016).

Lastly, the present thesis is inspired by the two-dimensional model of mental health developed as a '*complete state*' model of health (Keyes, 2005, as cited in Boson et al., 2016). Studies including children with NDD support the dual-factor model of mental health (Boström et al., 2016; Franken et al., 2018). The need to investigate the applicability of the two-dimensional model among the adolescent population is warranted for further clarification (Proctor et al., 2009, as cited in, Boson et al., 2016). Adolescents can have mental well-being at the same time as they report mental health problems, it is relevant to separate mental health problems from mental well-being and measure these constructs with separate instruments when relating to the risk factor of bullying. Subsequently, as NDDs are viewed as a mental health problem (World Health Organization, 2017), it is relevant to measure this separate from those with Other disabilities, in order to establish if adolescents with NDD have higher mental health problems and lower mental well-being than adolescents with Other disabilities.

5 Aim

The aim of this thesis is to study the concurrent relation between mental health problems measured as emotional and conduct problems, mental well-being, and bullying in adolescents with self-reported neurodevelopmental difficulties and in adolescents with Other disabilities. The aim of this study will be guided by the following hypotheses:

- Adolescents with self-reported NDD report more bullying (victimization and perpetration) than adolescents with self-reported Other disabilities
- Adolescents with self-reported Other disabilities report higher mental well-being compared to adolescents with self-reported NDD
- Adolescents with either self-reported NDD or self-reported Other disabilities who report high on mental well-being will report low on mental health problems and bullying

6 Method

Study design and setting

Data from the Swedish multidisciplinary research program LoRDIA (Longitudinal Research on Development in Adolescence) which was a prospective longitudinal study from 12/13 to 17 years of age, was used. The overall aim of this program is to study the developmental pathways of youth from childhood to adolescence, focusing primarily on alcohol and drug use and mental health of adolescents in the Swedish population (Lygnegård, 2018). It uses self-reported data to investigate social, behavioral, and psychological developmental trajectories among adolescents (Boson et al., 2016; Kapetanovic & Boson, 2020; Lygnegård et al, 2018). The first wave was collected in 2013 when a total population of 12- and 13-year-old in four Mid Swedish municipalities were contacted. These municipalities are representative of variations in urban and rural density (Lygnegård et al., 2018).

The current study is based on the third wave of data collection i.e., when adolescents are 14/15 years old. The present study has used a cross-sectional design to study a population of interest at a particular time point, associated to specific characteristic, and lastly to test a theoretical perspective. Moreover, the most common advantage of a cross-sectional design is to identify associations and correlates between chosen groups of interest (Kazdin, 2017). In this study, adolescents with self-reported neurodevelopmental difficulties and self-reported Other disabilities are compared.

Participants

Data regarding self-reported disability was gathered when adolescents were 12/13 years old. Adolescents responded to a questionnaire regarding long term conditions, the list consisted of a total of 18 different conditions, they answered whether they had it, and if so, how severe it was. For those having moderate symptoms of any of these were considered having a self-reported disability. Based on the type of conditions, two groups were created one with symptoms related to NDD and Other disabilities. Regarding measures of mental health, well-being and bullying these are taken from wave three and relations are measured concurrently. The NDD group involved disorders such as autism, ADHD, intellectual disability, speech, or language impairment/communication disorder. Other disabilities consisted of self-reports of visual impairment, motor impairment, and allergies (American Psychiatric Association [APA], 2013; Lygnegård et al., 2018). A flowchart of the population frame is shown in *figure 1*.

Figure 1

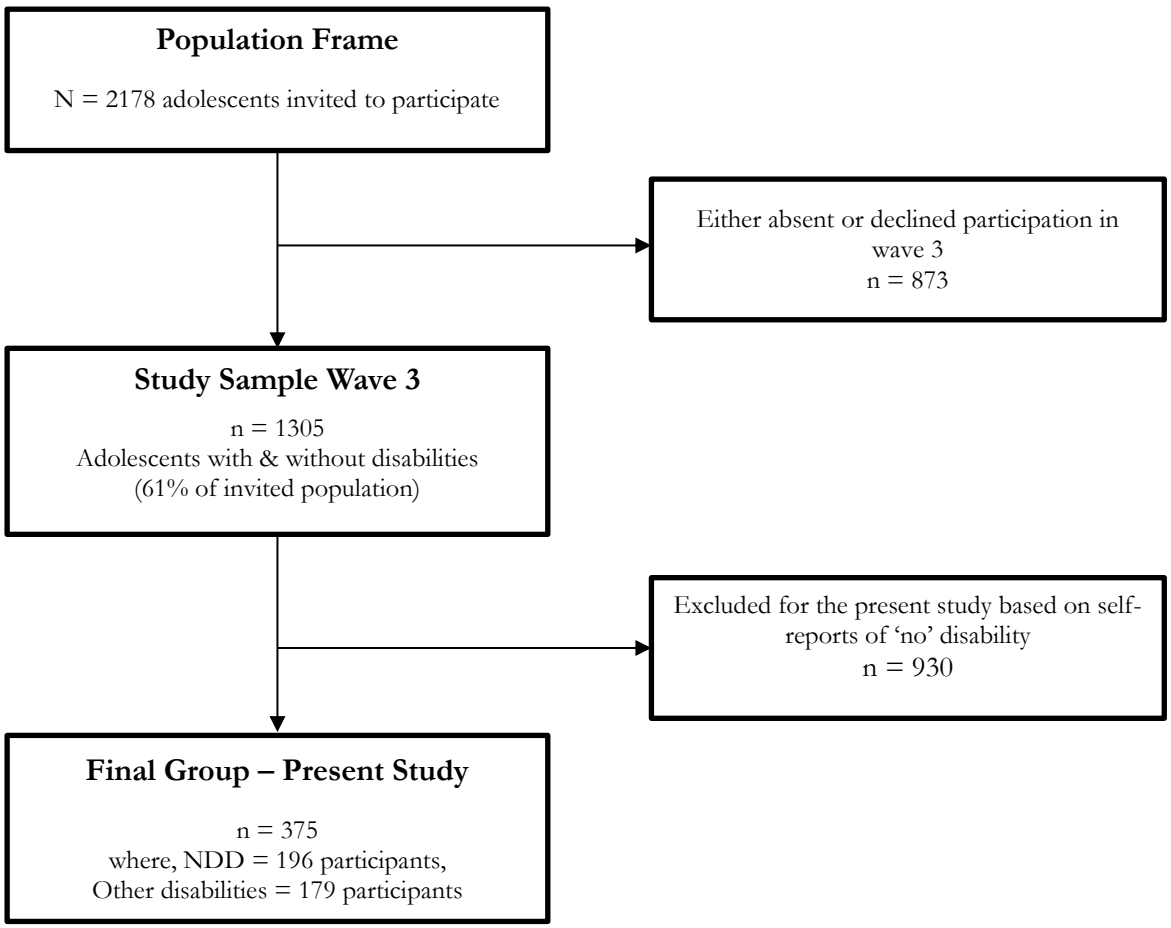

Figure 1: Flowchart of the population frame of current study, adapted as per use (Boson et al., 2016)

While no objective measure was used for individual identification of the socio-economic status (SES) in LoRDIA, about 71.2% participants reported to have similar SES as neighboring families. The study sample is representative in terms of demography (ethnicity and gender) (Boson et al., 2016).

Table 1

Participant characteristics

Characteristics	N (%)
Adolescents with NDD (n = 192)	
Boys	105 (38.2)
Girls	87 (31.6)
Living Status (n = 195)	
With mother and father	137 (49.8)
Shared custody	34 (12.4)
Single parent	22 (8.0)
Foster family	2 (0.7)
Adolescents with Other disabilities (n = 179)	
Boys	70 (30.3)
Girls	109 (47.2)
Living Status (n = 177)	
With mother and father	139 (60.2)
Shared custody	23 (10.0)
Single parent	15 (6.5)

Instruments

This study will focus on scales of perceived mental well-being, mental health problems (specifically emotional and conduct problems), and bullying.

Mental Well-being

Mental well-being of adolescents in LoRDIA is measured through self-reports on purpose and meaning in life and satisfaction in life (Boson et al., 2016). This instrument is based on the Mental Health Continuum Short Form (MHC-SF) which is a derivation of the long form (MHC-LF). Unlike MHC-LF which consists of 40 items, the MHC-SF comprises of 14 items which were chosen as prototypical items suitable to represent the construct definition of well-being. For each facet of well-being; three items measure emotional well-being (happy, interested in life, and satisfied), six items represent each dimension of psychological well-being (Ryff, 1989), and lastly five items which measure the five dimensions of social well-being where each item represent the dimensions of the model of social well-being proposed by Keyes (1998). The

first three items express the signs of *hedonic* well-being, whereby the remaining 11-items signify positive functioning.

The MHC-SF response option measures the frequency of each experienced positive mental health symptom through which a standardized assessment and categorization of levels of positive mental health similar to a major depressive episode can be assessed and diagnosed (see Keyes, 2002; Keyes, 2007). The 14-items of MHC-SF used in wave 3 of LoRDIA for the assessment of mental well-being of adolescents over the past month uses responses where 0 = *never*, 1 = *once or twice*, 2 = *about once a week*, 3 = *2 or 3 times a week*, 4 = *almost every day*, & 5 = *every day*.

The aspects of subjective and psychological well-being are similar to items measuring well-being in the Mental Health Continuum Short Form (MHC-SF) (Boson et al., 2016; Keyes, 2009). Berlin et al., (2012) originally used this measure in a large population study to measure the psychological health of adolescents. Studies by Boson et al., (2016) and Hagbory et al., (2017) based on similar dataset of LoRDIA, used indexes for the measure with a satisfactory alpha value (0.77) to measure mental well-being.

For the purpose of the present study, cut-offs for low and high well-being were created following the normal distribution curve with a ±1 standard deviation (Dawson & Weiss, 2012). Based on continuous scoring, sum 0-70 range as proposed by Keyes (2009), dichotomized cut-offs were created twice for both low and high well-being and were assigned values of 1 and 2 to categorize. First to determine low well-being cut-off, scores below 29 and scores ranging from 29.1 through the highest score of 70 were created. Similarly for high well-being, scores equal to and below 60.99 and scores of 61 through the highest were dichotomized. These cut-offs were created on the total participant sample of wave 3 of LoRDIA.

Mental Health Problems

Swedish version of Strengths and Difficulties questionnaire (SDQ–S) (Goodman & Goodman, 2009) was used in LoRDIA to address mental health problems and will thus be used for the purpose of this study. Swedish version of SDQ was translated by Smedje, Broman, Hetta, and von Knorring (1999) and its psychometric properties are validated by many previous studies (see Boson et al., 2016). Consisting of 25 items, SDQ-S is a self-rating scale which examines emotional and behavioral problems in children and adolescents. SDQ focuses on some positive and some negative psychological attributes. The self-completion by adolescents version is similar to other versions however, according to Goodman et al., (1998) the wording in this version

are slightly different which makes it suitable for young responders aged between 11-16 years old based on their ability to understand and literacy level.

Two scales were used from the SDQ, emotional and conduct problems scales. Emotional problems are measured through; (i) *'Often complains of headaches… (I get a lot of headaches…),* (ii) *Many worries… (I worry a lot),* (iii) *Often unhappy, downhearted… (I am often unhappy…),* (iv) *Nervous or clingy in new situations… (I am nervous in new situations…),* (v) *Many fears, easily scared (I have many fears…).* Conduct problems are measured as (i) *Often has temper tantrums or hot tempers (I get very angry),* (ii) *Generally obedient… (I usually do as I am told),* (iii) *Often fights with other children… (I fight a lot),* (iv) *Often lies or cheats (I am often accused of lying or cheating),* and (v) *Steals from home, school or elsewhere (I take things that are not mine)* (Goodman & Goodman, 2009). Responses were gathered on a 3-point Likert scale with scores of 0=*"not true",* 1=*"somewhat true",* and 2=*"certainly true*", here totals ranged from 0 to 10 for each scale (Kapetanovic & Boson, 2020; Smedje et al., 1999).

For this study, the initial bandings of the original three-band categorisation where responses are grouped as normal, borderline, and abnormal as cut-points for each sub-scale of SDQ such as emotional and conduct problems scales were used (Goodman et al., 2003). However, for the emotional problems scale response score of 0-5 (normal) was recoded as '0' and meant not having any emotional problems and scores of 6-10 (borderline/abnormal combined) as '1' resulting in presence of symptoms of emotional problems in an adolescent. On the other hand, within the conduct problems sub-scale scores of 0-3 (normal) were recoded as '0' and stated no presence of conduct problems and scores of 4-10 (borderline/abnormal combined) were recoded as '1' resulting in presence of conduct problems. Both groups of adolescents with scores indicating presence of symptoms were categorised as 'problematic'.

Bullying Victimization and Perpetration

Experiences of bullying in LoRDIA were investigated via a scale presented in a previous study by Kendrick, Jutengren, and Stattin (2012). This scale was originally developed by Alsaker & Brunner (1999). Consisting of 18 items, this instrument measured both bullying victimization and perpetration. However, for wave 3 of LoRDIA, it consisted of self-reports based on the three questions for each victimization and perpetration scale. The victimization questions were: (i) *Has it (this semester) happened that others have shown that they do not want you to join?* (ii) *Have you been beaten, kicked, or attacked in an ugly way by someone at school or on your way to or from school (this semester)?* (iii) *Have you been mocked in an unpleasant way, or*

has someone said ugly things to you at school or on the way to or from school (this semester)? Consequently, similar three questions were asked from the opposite aspect of a perpetrator like: *have you (this semester) told anyone else that you do not want them to join,* and so on. Originally, the responses for these questions ranged from 1 to 3 (Kendrick et al., 2012). For the current study, these responses were recoded into 0, 1, 2 where, 0=*No, never*, 1=*Yes, sometimes*, and 2=*Yes, often*. For the bullying victimization scale a cut-off of a score of 2 or more (maximum score= 6) was created which represents that the participant either has one of the responses as 'often' and at least two of the responses as 'sometimes' to have a total score of being victimized.

Although victimization has an aspect of repetition, a typical method of creating cut-offs for bullying was adopted as individuals tend to change strategies for bullying. Similarly, the responses for perpetration were also recoded and a cut-off of 1 was set for the responses of perpetration due to the reason that individuals do not want to appear as mean to others and may under-report (Nocentini et al., 2013).

Data Collection & Procedure

The data for LoRDIA consisted of self-reports from adolescent participants. Adolescents provided information through questionnaires which took a completion time of 60-90 minutes including extra time for a break mid-way. Support was provided to the participants at the time of data collection by the members of the research team where needed. Additional adaptations were made in terms of time (30 minutes approx.) which was provided to participants with another spoken language at home and to children with specific disabilities who earned the opportunity to fill the questionnaire at home in the presence of a member of the research team (Boson et al., 2016; Kapetanovic & Boson, 2020; Lygnegård et al., 2018). Passive consent from parents initially and an explicit active consent was required from the participants on the day of data collection. Participants answered structured questionnaires assessing the background of these adolescents as well as their relations with the family and peers, school adjustment, and psychological problems and mental health status. Participation was voluntary in LoRDIA and it was ensured that the collected data would remain confidential (Boson et al., 2016).

Data Analysis

Data for this study was analyzed by using SPSS 27. Frequency distribution of adolescents' reports of mental well-being, mental health problems, and bullying were compared by using descriptive statistics. This was done for both groups.

Chi-Square analysis was conducted for first and second hypotheses due to the dichotomized responses of both independent and dependent variables. The relationship between mental well-being, mental health problems, and bullying were tested using the hierarchical logistic regression analysis considering the dichotomous nature of dependent variable of mental well-being as either high or low (Field, 2013). Independent variables of gender, disability status, emotional problems, conduct problems, bullying victimization, and bullying perpetration were included in different models of regression to evaluate any additional predictive values. Gender of the participants and disability status were used in the first and second model. This was followed by emotional and conduct problems scales of SDQ measure for mental health problems in the third and fourth model. Lastly, bullying victimization and perpetration were added to the fifth and final models of regression.

Outliers were also checked for before linear regression was performed to avoid sensitivity to extreme scores. Given the size of the data, presence of a few outliers is not unusual. However, no extreme values were detected that fell out of the range of possible values. Thus, outliers were not deleted. *Normality* was also examined to check if the data is normally distributed or skewed. Values of skewness and kurtosis fell within the range of -2 and +2 indicating univariate normality and thus were accepted (George & Mallery, 2010; Koh, 2014). To avoid high correlation between independent variables, a test for *multicollinearity* was observed before regression analysis (Daoud, 2017). Evaluation of *homoscedasticity* was ensured so that the variation of the predicted value is constant (Kazdin, 2017).

7 Results

A descriptive overview of adolescents' reports is displayed in *Table 2.*

Table 2

Frequency distribution table of adolescents with self-reported NDD using self-reports of selected variables.

Variable	Adolescents with NDD (N = 196)	Adolescents with Other disabilities (N = 177)
	N%	*N%*
Conduct Problems		
Yes	38 (13.8)	21 (9.1)
No	159 (57.8)	156 (67.5)
Emotional Problems		
Yes	54 (19.6)	46 (19.9)
No	143 (52.0)	131 (56.7)
Bullying Victimization		
Yes	23 (8.4)	18 (7.8)
No	167 (60.7)	160 (69.3)
Bullying Perpetration		
Yes	16 (5.8)	5 (2.2)
No	175 (63.6)	173 (74.9)
Mental Well-being (Low)	38 (13.8)	33 (14.3)
Mental well-being (High)	23 (8.4)	20 (8.7)

Note: Data for missing values is excluded from the table.

The first hypothesis was 'Adolescents with self-reported NDD report higher bullying than adolescents with self-reported Other disabilities. Percentage of bullying victimization as well as perpetration is higher in those with NDD than in those with Other disabilities. This confirms the first hypothesis in terms of reports of bullying.

Concerning mental health problems which are measured through SDQ conduct problems and emotional problems scales, the frequency distribution of self-reported conduct problems reveals a higher percentage of reports by adolescents with NDD. A higher frequency percent of reports of emotional problems are informed by adolescents with Other disabilities. Where as, almost a third of adolescents with NDD and Other disabilities reported having emotional problems compared to not having any. Frequency distribution of reports of mental well-being of adolescents, measured by the MHC-SF 14-items scale, indicated higher percentage of both low and high mental well-being in adolescents with Other disabilities.

Chi-square analysis of association as displayed in *Table 3* reveals significance in bullying perpetration in adolescents with self-reported NDD. However, the effect size for this finding indicates a weak Cramer's V value, .10 (Cohen, 1988). This indicates that having a self-reported NDD seems to associate in having more reports of bullying perpetration by these adolescents. The result from the Chi-square analysis confirms the first hypothesis in terms of perpetration but not significantly for victimization.

Table 3 further responds to the second hypothesis, 'adolescents with self-reported Other disabilities report higher mental well-being compared to adolescents with self-reported NDD', a Chi-square analysis was performed. This hypothesis was confirmed through our findings. *Table 4* indicates higher significance in reports of high mental well-being in adolescents with Other disabilities. The effect size for this finding indicates a weak Cramer's V value, .07. This lower statistical power is due to a smaller group size.

Table 4

Chi-square analysis of the groups and their reports of bullying and high mental well-being.

	n	X^2	*p*
Bullying Victimization			
NDD	23	3.61	.057
Other disabilities	18	.64	.421
Bullying Perpetration			
NDD	16	13.21	<.001*
Other disabilities	5	.51	.471
Mental well-being (high)			
NDD	23	5.35	.021*
Other disabilities	20	6.82	<.001**

*p<.01, **p<.001

The third and final hypothesis, 'adolescents with either self-reported NDD or self-reported Other disabilities who report high on mental well-being will report low on mental health problems and bullying' was analysed using the logistic regression analysis. Variables of status of disability and gender were added in the first and second model as independent variables. This was followed by mental health problems of emotional and conduct problems scales of SDQ and reports of bullying victimization and perpetration in the next four models. In the logistic regression analysis, high mental well-being was used as a dichotomized dependent variable (see *Table 5*).

Table 5

Logistic regression for predicting high mental well-being

High Mental Well-being	*B*	*SE B*	*β*	95% CI
Model 1				
Disability Status	-.404	.118	.668**	.529 - .842
Model 2				
Disability Status	-.408	.118	.665**	.528 - .839
Gender	.524	.155	1.689**	1.247 - 2.287
Model 3				
Disability Status	-.347	.119	.706*	.559 - .893
Gender	.351	.158	1.421	1.042 - 1.937
Emotional Problems	-1.460	.324	.232**	.123 - .439
Model 4				
Disability Status	-.338	.120	.713*	.564 - .902
Gender	.368	.159	1.444*	1.058 - 1.972
Emotional Problems	-1.425	.326	.241**	.127 - .456
Conduct Problems	-.313	.288	.732	.416 - 1.287
Model 5				
Disability Status	-.336	.120	.715*	.565 - .904
Gender	.373	.159	1.453*	1.063 - 1.984
Emotional Problems (Yes)	-1.362	.329	.256**	.134 - .488
Conduct Problems (Yes)	-.267	.291	.766	.433 - 1.354
Bullying Victimization	-.466	.373	.628	.302 - 1.303
Model 6				
Disability Status	-.332	.120	.718*	.567 - .908
Gender	.387	.160	1.473*	1.077 - 2.014
Emotional Problems	-1.360	.329	.257**	.135 - .489
Conduct Problems	-.231	.292	.794	.447 - 1.408
Bullying Victimization	-.377	.381	.686	.325 - 1.447
Bullying Perpetration	-.540	.560	.583	.195 - 1.746

*$p<.05$, **$p<.001$

Note: The dependent variable for all regression models was high mental well-being

Disability status negatively predicts high mental well-being as shown in *Table 5.* The result of the regression analysis reveals significance for this variable. This negative predictive association with high mental well-being indicates that having a status of disability may result in not having higher experiences of mental well-being in these adolescents. Gender was found to be a significant predictor of high mental well-being while emotional problems significantly predicted high mental well-being negatively. The three independent variables of disability status,

gender, and emotional problems show significance throughout the regression models. No other independent variables showed significance when entered to the models of hierarchical regression. The third hypothesis therefore could not be confirmed fully. This may be due to the reason that the testing variables are risk factors while experiences of high mental well-being is a positive phenomenon (Augustine et al., 2021; Keyes, 2005). Based on this concept, another logistic regression analysis was conducted to analyze the predictive relation to low mental well-being using the same independent variables (see *Table 6*).

Table 6

Logistic regression for predicting low mental well-being

Low Mental Well-being	*B*	*SE B*	*β*	95% CI
Model 1				
Disability Status	-.134	.105	.874	.712 - 1.073
Model 2				
Disability Status	-.140	.105	.869	.707 - 1.069
Gender	.452	.166	1.572*	1.134 - 2.178
Model 3				
Disability Status	.011	.113	1.011	.810 - 1.262
Gender	.033	.182	1.034	.724 - 1.477
Emotional Problems	-1.773	.187	.170**	.118 - .245
Model 4				
Disability Status	.056	.115	1.057	.843 - 1.325
Gender	.114	.185	1.121	.780 - 1.611
Emotional Problems	-1.675	.190	.187**	.129 - .272
Conduct Problems	-.865	.231	.421**	.268 - .661
Model 5				
Disability Status	.051	.117	1.053	.837 - 1.324
Gender	.150	.188	1.162	.804 - 1.678
Emotional Problems	-1.526	.195	.218**	.148 - .319
Conduct Problems	-.709	.239	.492*	.308 - .785
Bullying Victimization	-1.104	.248	.331**	.204 - .539
Model 6				
Disability Status	.055	.117	1.056	.839 - 1.329
Gender	.166	.190	1.181	.814 - 1.713
Emotional Problems	-1.522	.195	.218**	.149 - .320
Conduct Problems	-.684	.242	.505*	.314 - .812
Bullying Victimization	-1.062	.257	.346**	.209 - .573
Bullying Perpetration	-.260	.404	.771	.349 - 1.704

*p<.05, **p<.001

Note: The dependent variable for all regression models was low mental well-being

As shown in the second regression analysis, gender has a predictive value however, a significant beta coefficient becomes insignificant when emotional problems is included in the model. Emotional problems is a high negative predictor of low mental well-being similar to the results with high mental well-being. Shown in this analysis, bullying victimization and conduct problems also negatively predict low mental well-being.

8 Discussion of Results

The aim of this study was to investigate the concurrent relation between mental health problems, mental well-being, and bullying in adolescents with NDD and their same aged peers with self-reported Other disabilities. Three hypotheses were proposed, of which two hypotheses were confirmed. One was only confirmed in terms of emotional problems, indicating an inverse predictive relationship. The first comparison between the NDD adolescents and Other disabilities showed increased reports of victimization and perpetration by individuals with NDD. Higher percentage of reports of bullying victimization and perpetration reflects on the previously proposed argument that perhaps the different attributes of NDD adolescents increases their risk for victimization (Forrest et al., 2020).

Despite being a larger participant group compared to Other disabilities, adolescents with NDD have self-reported themselves as having more experiences of being victimized. This finding of bullying victimization is in line with previous research where self-reports were used as a measure of bullying assessment (Maiano et al., 2016; Rose et al., 2011). The analysis of bullying reports also revealed a higher percentage of perpetration in adolescents with NDD compared to Other disabilities. It is, however, important to stress that NDDs are a risk group when it comes to bullying. Reports of higher prevalence of perpetration can be explained by the finding of higher conduct problems in NDD adolescents through further analysis in current study and from past literature (Hellström, 2019; Maiano et al., 2016). This is also supported in a systematic review on this topic where NDD are explained to observe less self-regulations compared to their similar aged peer group thus, appearing as having more conduct problems as well as more exhibition of perpetration (Hellström, 2019).

Both emotional and conduct problems subscales of SDQ as a measure of behavior problems seem to have a crucial relation with the disability status of NDD. Almost a third of adolescents with NDD also reported higher emotional problems than not having any. Emotional problems were also reported in a higher frequency in adolescents with Other disabilities. This finding of higher reports of emotional problems in both disability groups addresses the earlier

debated risk of poorer mental health functioning in these groups which are associated with disability (King et al., 2013; Tough et al., 2017). Findings of self-reports of mental health problems of this thesis confirm with the study by Haller et al., (2014) which also indicated relatively mild and atypical psychopathological symptoms acquired through the sub-scale of SDQ. This imposes that these symptoms may not reach the criteria for attention to diagnosis, however, remain a crucial risk factor in the psychosocial and mental health functioning of adolescents.

When addressing the second hypothesis, the analysis revealed that adolescents with Other disabilities do experience higher well-being compared to adolescents with NDD. This significant finding however had a low effect due to the comparison group also being a disability group and arguably may not score themselves as experiencing high well-being at large. Other disabilities group on the other hand, also rated themselves as frequently experiencing lower well-being. This points to the argument that these individuals may attain the ability to cope and adjust to their impairment and overall maladjustment, resulting in an increase in mental well-being (Dunn et al., 2009). However, factors which are responsible in increasing the mental well-being of adolescents with Other disabilities must be evaluated through further research. An important group for consideration is the NDD adolescent group, which was from hypothesis testing found to score less on high mental well-being. Comparatively higher mental health problems and more reports of both bullying and victimization define the lesser experiences of high mental well-being in the NDD individuals. The association between mental health problems and bullying dynamic was highlighted in other studies (Klomek et al., 2011; Runions et al., 2020). It is important to keep in mind that through the findings of this hypothesis, only a cross-sectional relation between mental well-being, mental health problems, and bullying can be encapsulated, providing a brief and momentary relation.

A predictive relationship between the constructs of mental well-being, mental health problems as emotional and conduct problems, and bullying was addressed in the final hypothesis. Disability and gender showed strong relation with high mental well-being. The predictive model revealed negative relation of disability with high mental well-being. An explanation for this finding may be the reason that adolescents with disability initially reported to may not perceive themselves as having high mental well-being (Canha et al., 2016). Gender in past literature, has found to be a predictor of positive functioning free of experiences of mental health problems and even with exposure to risk factors. For instance, girls express higher functioning and participation despite their reports of mental health problems in adolescence (Augustine et

al., 2021). This was also addressed by a study where high functioning girls expressed mental health problems (Pisula et al., 2017).

Emotional problems also indicated a stronger negative relation with ratings of high mental well-being. Explanation to low correlation between high mental well-being and bullying can be due to the reason that mental well-being is focused on positive functioning while bullying indicates ratings of negative experiences (Shemesh & Heiman, 2021). The strong relations of mental well-being as a *positive aspect* of mental health functioning with mental health problems as a *negative aspect* indicate that these two constructs are conceptually related (Augustine et al., 2021). On further analysis of low mental well-being indicated understanding of the constructs of mental health problems and bullying with mental well-being. Inversely predictive strong relation of emotional problems, conduct problems, and bullying victimization with low mental well-being confirm that having mental health problems and experiences of bullying does not necessarily predict low mental well-being. According to the findings of this study, adolescents do not report themselves as having low mental well-being when experiencing mental health problems and bullying. This points to the tendency of adolescents perceiving themselves as belonging to the larger moderate group of mental well-being following the norm which is neither low nor high (Keyes, 2006).

9 Discussion in Relation to the Bioecological Model

The Bronfenbrenner Bioecological model was developed to guide research based on Process-Person-Context-Time model (PPCT) (Bronfenbrenner & Evans, 2000). Due to the cross-sectional design of this study *microsystem* of adolescents with NDD and Other disabilities will be considered as a focus system. To understand the development of these individuals based on the findings of the study the *proximal processes* where the life functioning takes place is assessed on the *person-process-context* levels.

Within the *person* level, disability and age are two crucial aspects in this study. The understanding that belonging to the age group of adolescence varies greatly to the characteristics of disability. An increase in life role changes are linked to one's identity as well as the bodily appearance (Lygnegård et al., 2018). *Process* is the adolescent interaction among the same aged peer group within the immediate environment of microsystem (Eriksson et al., 2018). In this study, this interaction is primarily the interaction of adolescents with NDD and Other disabilities with other adolescents with and without disabilities.

At *context* level, school represents as central to the social processes. The experiences of bullying within the school context are vital to understand the social functioning of adolescents with NDD and Other disabilities. The involvement of these adolescents within the bullying behavior examines the interrelationship between the adolescents and their surrounding environment. Significant finding of perpetration and victimization in NDD adolescents place them within the complex interrelated system at not only micro-level but spread into various systems (Hong & Espelage, 2012). This is witnessed by the same adolescents reporting higher emotional problems and less reports of mental well-being compared to adolescents with Other disabilities. Experiences from the context level interact vis-à-vis on the person level since adolescence is when youth experience social roles and status pursuits among peer groups (Rose et al., 2011). Studies on bullying victimization and perpetration have shown youth characteristics as risk factors for involvement in the bullying dynamic (Fekkes et al., 2005). On one hand, it can be formulated that disability status puts adolescents at the risk of victimization (Rose et al., 2011). While it is also true that difficulties in interpreting verbal and non-verbal social cues and possessing poor communication skills which are associated to the disability can lead to aggressive behavior through being a perpetrator (Kaukiainen et al., 2002).

School environment plays an important role to understand students' attitudes, peer relationships, and personal characteristics which mainly contribute to bullying behavior. Positive perception of the surrounding environment enhances psychosocial and mental health functioning (Hong & Espelage, 2012). Mental and emotional *resources* which are a part of *person* level were central to this study. Experiences of mental well-being operationalized as mental health provides the opportunity to adolescents to realize the abilities to cope with life stressors and contribute effectively in daily lives (Granlund et al., 2021). More reports of emotional problems and involvement in bullying may appear as a challenge in the lives of these individuals. This, however, does not testify that they are excluded from the experiences of mental well-being. According to the results of the study, disability does not predict low mental well-being despite having negative experiences. Individual may attempt command over the balance between *resources* and challenges (Granlund et al., 2021). This was evident through the findings of the study that reports high mental well-being reflects an inverse relation with mental health problems.

10 Methodological discussion

Despite the cross-sectional design of this study, bullying victimization and perpetration were studied for this population. An aspect of repetition which is associated to bullying victimization and perpetration is present in previous literature. Moreover, it is also stated that individuals involved in the bullying dynamic tend to change strategies for bullying (Nocentini et al., 2013). The data for bullying was skewed which is also witnessed by previous studies and is understandable that not many students are involved in bullying thus resulting in fewer reports (Beckman et al., 2016; Hall & Chapman, 2018). A noticeable aspect is the small number of bullying reports specifically of perpetration thus a less strict criteria for cut-offs were adopted. However, this is typical with respect to previous studies as individuals refrain from appearing as mean to others and prefer to identify as possessing positive personalities. Another important aspect is that within a group individuals tend to take up roles as perpetrators instead of a single person taking a more consistent role of a lead perpetrator (Nocentini et al., 2013).

Although Goodman (2001) has classified the responses of SDQ scales of emotional problems and conduct problems into three categories, only two categories were made for the purpose of this thesis. As the data used in this study is self-reported for adolescents to have mental health problems therefore, lenient dichotomization between either 'not having' or 'having possible' symptoms of mental health problems were adopted. This method helped to avoid predicting the psychopathological diagnosis which SDQ mainly offers in its clinical use. Similar specific cut-off rules were used by Nielsen et al., (2019) for SDQ scoring. This process of dichotomization further helped to avoid smaller grouping as much smaller groups do not contribute to satisfactory statistical power (Kazdin, 2017).

11 Ethical Considerations

There is a vital importance of keeping ethical principles in mind when approaching children for research. Such principles expressed as a set of rights can be receiving consent to participate, anonymity, fair treatment, dignity, and confidentiality (Greene & Hogan, 2005). Researching with children with disabilities may further require the consideration of being reflexive and adaptations must be made according to the participants' needs (Coad et al., 2015; Kumpunen et al., 2012).

In LoRDIA, initial letters were sent out informing about the nature of the study were translated into 32 different languages based on the native languages of participants. The length of the questionnaire was long, and participants were required to stay for longer durations to

respond to all the questions. This aspect may have resulted in hurried responses or skimming of text by participants. Nonetheless, the questionnaire was based on instruments which have been used extensively in relevant research thus provide a good insight into the proposed constructs.

Adolescents were informed in a simplified manner about the study with a voluntary basis of participation, and it was ensured that anonymity and confidentiality was the observed criterion (Kapetanovic & Boson, 2020). For participation, parents were informed that providing no notice will be considered as consenting to the adolescent's participation in the study. Adolescents were asked questions related to disability which requires the study researchers to observe confidentiality at a crucial level. As self-reports for disability status were acquired and diagnoses were not present, following the route of passive consent for participation may be critical. On the other hand, passive consent ensures maximum participation. Despite the fairly ambiguous non-response of an informed passive consent, confirmation to whether parents are actually informed is a 'tricky' matter (Cashmore, 2006, as cited in Powell et al., 2012). Ethical issues in whether the parents received the information, were able to read or understood the presented information, or if adolescents failed to inform any refusal by parents remain a compromise in this method of gaining consent (Powell et al., 2012). The use of this form of consent for LoRDIA allowed the researchers to enable children to reserve the right to participate by choosing for themselves, a method also adopted and witnessed by Carroll-Lind et al., (2006). Nonetheless, passive consent decreases the likelihood of parental issues, abuse or conflict, and over-protection. On the contrary, it allows the adolescents to have a voice (Morris et al., 2012). The United Nations Convention on the Rights of the Child [UNCRC] (1989) emphasizes the importance of capturing the children's voice. Although there is evidence in past literature of limitations in using measures for children's and adolescents' self-reports, yet on the contrary, there exists increased evidence that children can provide accurate reports of their own mental health and experiences related to them if age appropriation factor in the measure is well considered (Deighton et al., 2014).

As discussed before, during all the stages of the process of research, adaptations to language and ease of understanding were implemented to make a fit for all responders. Lastly, the protocol of LoRDIA was approved by the Regional Research Review Board in Gothenburg, Sweden. It was conducted in accordance with the Swedish Research Council's rules and guidelines for research which is in accordance with the Declaration of Helsinki (World Medical Association, 2013).

12 Limitations and Implications

This study utilized self-reported disability of participants indicating that some perceived themselves as qualifying for the status of disability as either NDD or Other disabilities irrespective of a diagnosis. Therefore, the generalization of the findings of this study to adolescents with diagnosed NDD and Other disabilities of physical and autoimmune diseases must be made with caution. NDD adolescents in this study reported having more emotional and conduct problems indicating relevancy to the categorization within the groups. This however helped in participation of adolescents who are not identified as diagnosed yet experience similar difficulties of NDD and Other disabilities. A methodological limitation of this study is the dichotomization of the constructs during analysis. This may have added to the limitations in results interpreted through these responses. Strict cut-offs to identify mental well-being also resulted in both groups high and low not being representative of the participant population.

Lastly, this thesis was a secondary analysis based on LoRDIA. Secondary data may be subject to discrepancies and errors compared to primary data making it less reliable. One aspect of smaller size is more significant here in terms of the participants grouping as these groups were not the intended idea of the primary researchers. However, secondary analysis provides new insights that can be generated using previous analysis which are time-saving and low-cost or free.

13 Future Research

Gender should be an essential part of the analysis when studying mental health problems and mental well-being. Future research on how high and low mental well-being is reflective through gender categorization is needed. The inverse relation of disability with high mental well-being needs more clarification. This study utilized one positive aspect of mental well-being in comparison with two negative aspects of mental health problems and bullying dynamic. Based on the increased findings of emotional problems and bullying victimization and perpetration, more research should be designed to optimize these experiences in adolescents with NDD and Other disabilities. Intervention strategies should be implemented within these groups to help them cope with such crucial encounters. Future research based on examining constructs which support mental well-being will allow more information to design strategies to increase mental well-being. This will put more focus on intervention and rehabilitation. Lastly, focused research into

school environmental factors and its affects on frequency of bullying reports may provide further insight into the adolescents' perception of school context and its relation to mental well-being.

14 Conclusion

Adolescents with NDD report more bullying victimization and perpetration experiences in comparison to adolescents with Other disabilities. Therefore, it can be concluded that NDDs are a risk group in the bullying dynamic. Mental health problems as emotional and conduct problems were more frequent among the NDD adolescents. Despite the increased reports of mental health problems and bullying, when predicting for high mental well-being, emotional problems had an inverse relation to it irrespective of self-reporting NDD or Other disabilities. Youth characteristics and disability status play an important role in determining the *person-process-context* interactions. However, use of mental and emotional resources as experiences of mental well-being balance the influence of immediate characteristics of individual at person level as well as context level. In conclusion, interventions for adolescents with NDD and Other disabilities should be formulated to focus on enhancing their mental health well-being. This may eventually lead to reduced mental health problems in these individuals.

References

Aldao, A., & Nolen-Hoeksema, S. (2012). When are adaptive strategies most predictive of psychopathology? *Journal of Abnormal Psychology*, *121*(1), 276.

Alsaker, F., & Brunner, A. (1999). *"Switzerland" in P.K. Smith, Y. Morita, J. Junger-Tas, D. Olweus, R. Catalano, P. Slee (Eds.), The Nature of School Bullying: A Cross-national Perspective*. London, Routledge.

Altman, B. M. (2001). Disability definitions, models, classification schemes, and applications. In G. L. Albrecht, K. D. Seelman, & M. Bury (Eds.), *Handbook of Disability Studies* (pp. 97–122). Sage Publications.

American Psychiatric Association [APA]. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*.

American Psychological Association [APA]. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*.

Augustine, L., Lygnegård, F., & Granlund, M. (2021). Trajectories of participation, mental health, and mental health problems in adolescents with self-reported neurodevelopmental disorders. *Disability and Rehabilitation*, 1–14.

Balázs, J., Miklósi, M., Keresztény, Á., Hoven, C. W., Carli, V., Wasserman, C., Apter, A., Bobes, J., Brunner, R., Cosman, D., Cotter, P., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., Keeley, H., Marusic, D., Postuvan, V., Resch, F., … Wasserman, D. (2013). Adolescent subthreshold-depression and anxiety: Psychopathology, functional impairment and increased suicide risk. *Journal of Child Psychology and Psychiatry*, *54*(6), 670–677. https://doi.org/10.1111/jcpp.12016

Beckman, L., Hagquist, C., & Hellström, L. (2012). Does the association with psychosomatic health problems differ between cyberbullying and traditional bullying? *Emotional and Behavioural Difficulties*, *17*(3–4), 421–434. https://doi.org/10.1080/13632752.2012.704228

Beckman, L., Janson, S., & von Kobyletzki, L. (2016). Associations between neurodevelopmental disorders and factors related to school, health, and social interaction in schoolchildren: Results from a Swedish population-based survey. *Disability and Health Journal*, *9*(4), 663–672. https://doi.org/10.1016/j.dhjo.2016.05.002

Berlin, M., Modin, B., Gustafsson, P. A., Hjern, A., & Bergström, M. (2012). The impact of school on children's and adolescents' mental health. *Stockholm: The Swedish National Board of Health and Welfare & Center for Health Equity Studies (CHESS)*. https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/artikelkatalog/ovrigt/2012-5-15.pdf

Berntsson, L. T., Köehler, L., & Gustafsson, J.-E. (2001). Psychosomatic complaints in schoolchildren: A Nordic comparison. *Scandinavian Journal of Public Health*, *29*(1), 44–54. https://doi.org/10.1177/14034948010290011001

Bjereld, Y., Augustine, L., & Thornberg, R. (2020). Measuring the prevalence of peer bullying victimization: Review of studies from Sweden during 1993-2017. *Children and Youth Services Review*, *119*(2020), 105528.

Boson, K. (2018). *Psychological perspectives on alcohol use among young adolescents—Doctoral Dissertation*.

Boson, K., Berglund, K., Wennberg, P., & Fahlke, C. (2016a). Well-being, mental health problems, and alcohol experiences among young swedish adolescents: A general population study. *Journal for Person-Oriented Research*, *2*(3), 123–134.

Boson, K., Berglund, K., Wennberg, P., & Fahlke, C. (2016b). Well-being, mental health problems, and alcohol experiences among young swedish adolescents: A general population study. *Journal for Person-Oriented Research*, *2*(3), 123–134.

Boström, P., Johnels, J. Å., Thorson, M., & Broberg, M. (2016). Subjective Mental Health, Peer Relations, Family, and School Environment in Adolescents with Intellectual Developmental Disorder: A First Report of a New Questionnaire Administered on Tablet PCs. *Journal of Mental Health Research in Intellectual Disabilities*, *9*(4), 207–231. https://doi.org/10.1080/19315864.2016.1186254

Bronfenbrenner, U., & Evans, G. W. (2000a). Developmental Science in the 21st Century: Emerging Questions, Theoretical Models, Research Designs and Empirical Findings. *Social Development*, *9*(1), 115–125. https://doi.org/10.1111/1467-9507.00114

Bronfenbrenner, U., & Evans, G. W. (2000b). Developmental Science in the 21st Century: Emerging Questions, Theoretical Models, Research Designs and Empirical Findings. *Social Development*, *9*(1), 115–125. https://doi.org/10.1111/1467-9507.00114

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. *Handbook of Child Psychology*, *1*(5), 993–1028.

Canha, L., Simões, C., Matos, M. G., & Owens, L. (2016). Well-being and health in adolescents with disabilities. *Psicologia: Reflexão e Crítica*, *29*.

Carroll-Lind, J., Chapman, J. W., Gregory, J., & Maxwell, G. (2006). The key to the gatekeepers: Passive consent and other ethical issues surrounding the rights of children to speak on issues that concern them. *Child Abuse & Neglect*, *30*(9), 979–989. https://doi.org/10.1016/j.chiabu.2005.11.013

Cashmore, J. (2006). Ethical issues concerning consent in obtaining children's reports on their experience of violence. *Child Abuse & Neglect*, *30*, 969–977. https://doi.org/10.1016/j.chiabu.2006.05.004

Chou, W.-J., Liu, T.-L., Yang, P., Yen, C.-F., & Hu, H.-F. (2018). Bullying Victimization and Perpetration and Their Correlates in Adolescents Clinically Diagnosed With ADHD. *Journal of Attention Disorders*, *22*(1), 25–34. https://doi.org/10.1177/1087054714558874

Clouder, L., Karakus, M., Cinotti, A., Ferreyra, M. V., Fierros, G. A., & Rojo, P. (2020). Neurodiversity in higher education: A narrative synthesis. *Higher Education*, *80*(4), 757–778. https://doi.org/10.1007/s10734-020-00513-6

Coad, J., Gibson, F., Horstman, M., Milnes, L., Randall, D., & Carter, B. (2015). Be my guest! Challenges and practical solutions of undertaking interviews with children in the home setting. *Journal of Child Health Care*, *19*(4), 432–443. https://doi.org/10.1177/1367493514527653

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences. Hillsdle*.

Craig, W. M., Lambe, L., & Mclver, T. (2016). Health Behaviour in School-aged Children (HBSC) in Canada: Focus on relationships. *Ottawa, Ontario; Public Health Agency of Canada*.

Currie, C., Zanotti, C., Morgan, A., Currie, D., De Looze, M., Roberts, C., Samdal, O., Smith, O. R., & Barnekow, V. (2009). Social determinants of health and well-being among young people. *Health Behaviour in School-Aged Children (HBSC) Study: International Report from The*, *2010*, 271.

Daoud, J. I. (2017). *Multicollinearity and regression analysis*. *949*(1), 012009.

Dawson, N. V., & Weiss, R. (2012). Dichotomizing continuous variables in statistical analysis: A practice to avoid. *Medical Decision Making*, *32*(2), 225–226. https://doi.org/10.1177/0272989X12437605

Deighton, J., Croudace, T., Fonagy, P., Brown, J., Patalay, P., & Wolpert, M. (2014). Measuring mental health and wellbeing outcomes for children and adolescents to inform practice and policy: A review of child self-report measures. *Child and Adolescent Psychiatry and Mental Health*, *8*, 14. https://doi.org/10.1186/1753-2000-8-14

Dunn, D. S., Uswatte, G., & Elliott, T. R. (2009, July 30). *Happiness, Resilience, and Positive Growth Following Physical Disability: Issues for Understanding, Research, and Therapeutic Intervention*. The Oxford Handbook of Positive Psychology. https://doi.org/10.1093/oxfordhb/9780195187243.013.0062

Emerson, E., Honey, A., Madden, R., & Llewellyn, G. (2009). The Well-Being of Australian Adolescents and Young Adults with Self-Reported Long-Term Health Conditions, Impairments or Disabilities: 2001 and 2006. *Australian Journal of Social Issues*, *44*(1), 39-54,3-4.

Engel, G. L. (1977). The Need for a New Medical Model: A Challenge for Biomedicine. *Science*, *196*(4286), 129–136.

Eriksson, M., Ghazinour, M., & Hammarström, A. (2018). Different uses of Bronfenbrenner's ecological theory in public mental health research: What is their value for guiding public mental health policy and practice? *Social Theory & Health*, *16*(4), 414–433. https://doi.org/10.1057/s41285-018-0065-6

Fekkes, M., Pijpers, F. I., & Verloove-Vanhorick, S. P. (2005). Bullying: Who does what, when and where? Involvement of children, teachers and parents in bullying behavior. *Health Education Research*, *20*(1), 81–91.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics: And sex and drugs and rock "n" roll* (4. ed.). Sage.

Folkhälsomyndigheten. (2018). *Child and adolescent health—The Public Health Agency of Sweden*. http://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/living-conditions-and-lifestyle/child-and-adolescent-health/

Forrest, D. L., Kroeger, R. A., & Stroope, S. (2020). Autism Spectrum Disorder Symptoms and Bullying Victimization Among Children with Autism in the United States. *Journal of Autism and Developmental Disorders*, *50*(2), 560–571. https://doi.org/10.1007/s10803-019-04282-9

Franken, K., Lamers, S. M. A., Klooster, P. M. T., Bohlmeijer, E. T., & Westerhof, G. J. (2018). Validation of the Mental Health Continuum-Short Form and the dual continua model of well-being and psychopathology in an adult mental health setting. *Journal of Clinical Psychology*, *74*(12), 2187–2202. https://doi.org/10.1002/jclp.22659

Frisenstam, K. L., Bosch, M. van den, Chen, Y., Friberg, P., & Osika, W. (2017). Self-Reported Psychosomatic Complaints In Swedish Children, Adolescents, and Young Adults Living in Rural and Urban Areas: An Internet-Based Survey. *JMIR Public Health and Surveillance*, *3*(1), e9. https://doi.org/10.2196/publichealth.5902

Gage, N. A., Katsiyannis, A., Rose, C., & Adams, S. E. (2021). Disproportionate Bullying Victimization and Perpetration by Disability Status, Race, and Gender: A National Analysis. *Advances in Neurodevelopmental Disorders*, *5*(3), 256–268. https://doi.org/10.1007/s41252-021-00200-2

George, D., & Mallery, P. (2010). SPSS for Windows step by step. A simple study guide and reference (10. Baskı). *GEN, Boston, MA: Pearson Education, Inc.*

Gillham, J. E., Reivich, K., & Shatté, A. (2002). *Positive youth development, prevention, and positive psychology: Commentary on" Positive youth development in the United States."*.

Gini, G., & Pozzoli, T. (2009). Association Between Bullying and Psychosomatic Problems: A Meta-analysis. *Pediatrics*, *123*(3), 1059–1065.

Goodman, A., & Goodman, R. (2009). Strengths and difficulties questionnaire as a dimensional measure of child mental health. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*(4), 400–403.

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(11), 1337–1345.

Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, *7*(3), 125–130.

Goodman, R., Meltzer, H., & Bailey, V. (2003). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *International Review of Psychiatry*, *15*(1–2), 173–177.

Granlund, M., Imms, C., King, G., Andersson, A. K., Augustine, L., Brooks, R., Danielsson, H., Gothilander, J., Ivarsson, M., & Lundqvist, L.-O. (2021). Definitions and operationalization of mental health problems, wellbeing and participation constructs in children with NDD: distinctions and clarifications. *International Journal of Environmental Research and Public Health*, *18*(4), 1656.

Greene, S., & Hogan, D. (2005). *Researching Children's Experience: Approaches and Methods*. SAGE.

Hagborg, J. M., Tidefors, I., & Fahlke, C. (2017). Gender differences in the association between emotional maltreatment with mental, emotional, and behavioral problems in Swedish adolescents. *Child Abuse & Neglect*, *67*, 249–259. https://doi.org/10.1016/j.chiabu.2017.02.033

Hall, W. J., & Chapman, M. V. (2018). The Role of School Context in Implementing a Statewide Anti-Bullying Policy and Protecting Students. *Educational Policy*, *32*(4), 507–539. https://doi.org/10.1177/0895904816637689

Haller, H., Cramer, H., Lauche, R., Gass, F., & Dobos, G. J. (2014). The prevalence and burden of subthreshold generalized anxiety disorder: A systematic review. *BMC Psychiatry*, *14*(1), 128. https://doi.org/10.1186/1471-244X-14-128

Hawker, D. S. J., & Boulton, M. J. (2000). Twenty Years' Research on Peer Victimization and Psychosocial Maladjustment: A Meta-analytic Review of Cross-sectional Studies. *Journal of Child Psychology and Psychiatry*, *41*(4), 441–455. https://doi.org/10.1111/1469-7610.00629

Heimersson, I., Björkenstam, C., Khan, S., Tallbäck, M., Nordberg, M., Johansson, A.-K., & Kollberg, S. (2013). Folkhälsan i Sverige: Årsrapport 2013. *Stockholm: Statens Folkhälsoinstitut*.

Hellström, L. (2019). A Systematic Review of Polyvictimization among Children with Attention Deficit Hyperactivity or Autism Spectrum Disorder. *Int J Environ Res Public Health*, *16*(13). https://doi.org/10.3390/ijerph16132280

Helmchen, H., & Linden, M. (2000). Subthreshold disorders in psychiatry: Clinical reality, methodological artifact, and the double-threshold problem. *Comprehensive Psychiatry*, *41*(2, Supplement 1), 1–7. https://doi.org/10.1016/S0010-440X(00)80001-2

Hong, J. S., & Espelage, D. L. (2012). A review of research on bullying and peer victimization in school: An ecological system analysis. *Aggression and Violent Behavior*, *17*(4), 311–322. https://doi.org/10.1016/j.avb.2012.03.003

Kaltiala-Heino, R., Rimpelä, M., Rantanen, P., & Rimpelä, A. (2000). Bullying at school—An indicator of adolescents at risk for mental disorders. *Journal of Adolescence*, *23*(6), 661–674.

Kapetanovic, S., & Boson, K. (2020). Discrepancies in parents' and adolescents' reports on parent-adolescent communication and associations to adolescents' psychological health. *Current Psychology*.

Kapp, S. K., Gillespie-Lynch, K., Sherman, L. E., & Hutman, T. (2013). Deficit, difference, or both? Autism and neurodiversity. *Developmental Psychology*, *49*(1), 59–71. https://doi.org/10.1037/a0028353

Kaukiainen, A., Salmivalli, C., Lagerspetz, K., Tamminen, M., Vauras, M., Mäki, H., & Poskiparta, E. (2002). Learning difficulties, social intelligence, and self–concept: Connections to bully–victim problems. *Scandinavian Journal of Psychology*, *43*(3), 269–278.

Kazdin, A. E. (2017). *Research design in clinical psychology, 3rd ed* (5th ed.).

Kendrick, K., Jutengren, G., & Stattin, H. (2012a). The protective role of supportive friends against bullying perpetration and victimization. *Journal of Adolescence*, *35*(4), 1069–1080.

Kendrick, K., Jutengren, G., & Stattin, H. (2012b). The protective role of supportive friends against bullying perpetration and victimization. *Journal of Adolescence*, *35*(4), 1069–1080. https://doi.org/10.1016/j.adolescence.2012.02.014

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 121–140.

Keyes, C. L. M. (2002a). The Mental Health Continuum: From Languishing to Flourishing in Life. *Journal of Health and Social Behavior*, *43*(2), 207–222. JSTOR. https://doi.org/10.2307/3090197

Keyes, C. L. M. (2002b). The Mental Health Continuum: From Languishing to Flourishing in Life. *Journal of Health and Social Behavior*, *43*(2), 207–222. https://doi.org/10.2307/3090197

Keyes, C. L. M. (2005a). The subjective well-being of America's youth: Toward a comprehensive assessment. *Adolescent & Family Health*.

Keyes, C. L. M. (2005b). The subjective well-being of America's youth: Toward a comprehensive assessment. *Adolescent & Family Health*.

Keyes, C. L. M. (2006). Mental Health in Adolescence: Is America's Youth Flourishing? *American Journal of Orthopsychiatry*, *76*(3), 395–402. https://doi.org/10.1037/0002-9432.76.3.395

Keyes, C. L. M. (2007). *Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health - ProQuest*. *62*(2), 95–108.

Keyes, C. L. M. (2007). *Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health - ProQuest*. *62*(2), 95–108.

Keyes, C. L. M. (2009). *Atlanta: Brief description of the mental health continuum short form (MHC-SF)*.

Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, *82*(6), 1007.

King, G., Law, M., Petrenchik, T., & Hurley, P. (2013). Psychosocial Determinants of Out of School Activity Participation for Children with and without Physical Disabilities. *Physical & Occupational Therapy In Pediatrics*, *33*(4), 384–404. https://doi.org/10.3109/01942638.2013.791915

Klomek, A. B., Kleinman, M., Altschuler, E., Marrocco, F., Amakawa, L., & Gould, M. S. (2011). High school bullying as a risk for later depression and suicidality. *Suicide and Life-Threatening Behavior*, *41*(5), 501–516. http://dx.doi.org.proxy.library.ju.se/10.1111/j.1943-278X.2011.00046.x

Knight, C. (2018). What is dyslexia? An exploration of the relationship between teachers' understandings of dyslexia and their training experiences. *Dyslexia*, *24*(3), 207–219. https://doi.org/10.1002/dys.1593

Koh, K. (2014). Univariate Normal Distribution. In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-Being Research* (pp. 6817–6819). Springer Netherlands. https://doi.org/10.1007/978-94-007-0753-5_3109

Kumpunen, S., Shipway, L., Taylor, R. M., Aldiss, S., & Gibson, F. (2012). Practical approaches to seeking assent from children. *Nurse Researcher (through 2013); London*, *19*(2), 23–27.

Lamers, S. M. A., Westerhof, G. J., Bohlmeijer, E. T., Klooster, P. M. ten, & Keyes, C. L. M. (2011). Evaluating the psychometric properties of the mental health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology*, *67*(1), 99–110. https://doi.org/10.1002/jclp.20741

Lebrun-Harris, L. A., Sherman, L. J., Limber, S. P., Miller, B. D., & Edgerton, E. A. (2019). Bullying Victimization and Perpetration among U.S. Children and Adolescents: 2016 National Survey of Children's Health. *Journal of Child and Family Studies*, *28*(9), 2543–2557. https://doi.org/10.1007/s10826-018-1170-9

Lygnegård, F. (2018a). Participation in and outside school: Self-ratings by Swedish adolescents with and without impairments and long-term health conditions. *Doctoral Dissertation, Jönköping University, School of Health and Welfare*.

Lygnegård, F. (2018b). Participation in and outside school: Self-ratings by Swedish adolescents with and without impairments and long-term health conditions. *Doctoral Dissertation, Jönköping University, School of Health and Welfare*.

Lygnegård, F., Augustine, L., Granlund, M., Kåreholt, I., & Huus, K. (2018a). Factors Associated With Participation and Change Over Time in Domestic Life, Peer Relations, and School for Adolescents With and Without Self-Reported Neurodevelopmental Disorders. A Follow-Up Prospective Study. *Front. Educ.*, *3*. https://doi.org/10.3389/feduc.2018.00028

Lygnegård, F., Augustine, L., Granlund, M., Kåreholt, I., & Huus, K. (2018b). Factors Associated With Participation and Change Over Time in Domestic Life, Peer Relations, and School for Adolescents With and Without Self-Reported Neurodevelopmental Disorders. A Follow-Up Prospective Study. *Frontiers in Education*, *3*. https://doi.org/10.3389/feduc.2018.00028

Maiano, C., Aime, A., Salvas, M.-C., Morin, A. J., & Normand, C. L. (2016a). Prevalence and Correlates of Bullying Perpetration and Victimiztion Among School-aged Youth with Intellectual Disabilities: A Systematic Review. *Research in Developmental Disabilities*, *49-50(2016*, 181–195.

Maiano, C., Aime, A., Salvas, M.-C., Morin, A. J., & Normand, C. L. (2016b). Prevalence and Correlates of Bullying Perpetration and Victimiztion Among School-aged Youth with Intellectual Disabilities: A Systematic Review. *Research in Developmental Disabilities*, *49-50(2016*, 181–195.

Morris, A., Hegarty, K., & Humphreys, C. (2012). Ethical and safe: Research with children about domestic violence: *Research Ethics*. https://doi.org/10.1177/1747016112445420

Naylor, C. (2013). The link between long-term conditions and mental health. *Annals of the Rheumatic Diseases*, *71*(June 2013), 28. http://dx.doi.org/10.1136/annrheumdis-2012-eular.1590

Nielsen, L. G., Rimvall, M. K., Clemmensen, L., Munkholm, A., Elberling, H., Olsen, E. M., Rask, C. U., Skovgaard, A. M., & Jeppesen, P. (2019). The predictive validity of the Strengths and Difficulties Questionnaire in preschool age to identify mental disorders in preadolescence. *PLOS ONE*, *14*(6), e0217707. https://doi.org/10.1371/journal.pone.0217707

Nocentini, A., Menesini, E., & Salmivalli, C. (2013). Level and change of bullying behavior during high school: A multilevel growth curve analysis. *Journal of Adolescence*, *36*(3), 495–505. https://doi.org/10.1016/j.adolescence.2013.02.004

Olweus, D. (2013). School bullying: Development and some important challenges. *Annual Review of Clinical Psychology*, *9*, 751–780.

Pisula, E., Pudło, M., Słowińska, M., Kawa, R., Strząska, M., Banasiak, A., & Wolańczyk, T. (2017). Behavioral and emotional problems in high-functioning girls and boys with autism spectrum disorders: Parents' reports and adolescents' self-reports. *Autism*, *21*(6), 738–748. https://doi.org/10.1177/1362361316675119

Powell, M. A., Fitzgerald, R., Taylor, N. J., & Graham, A. (2012). International Literature Review: Ethical issues in undertaking reserach with children and young people (Literature review for the Childwatch International Research Network), Lismore. *Southern Cross University, Centre for Children and Young People/Dunedin: University of Otago, Centre for Research on Children and Families*.

Proctor, C. L., Linley, P. A., & Maltby, J. (2009). Youth life satisfaction: A review of the literature. *Journal of Happiness Studies*, *10*(5), 583–630.

Rose, C. A., & Gage, N. A. (2016). Exploring the Involvement of Bullying Among Students With Disabilities Over Time. *Exceptional Children*, *83*(3), 298–314. https://doi.org/10.1177/0014402916667587

Rose, C. A., Link to external site, this link will open in a new window, & Tynes, B. M. (2015). Longitudinal associations between cybervictimization and mental health among U.S. adolescents. *Journal of Adolescent Health*, *57*(3), 305–312. http://dx.doi.org.proxy.library.ju.se/10.1016/j.jadohealth.2015.05.002

Rose, C. A., Monda-Amaya, L. E., & Espelage, D. L. (2011a). Bullying Perpetration and Victimization in Special Education: A Review of the Literature. *Remedial and Special Education*, *32*(2), 114–130. https://doi.org/10.1177/0741932510361247

Rose, C. A., Monda-Amaya, L. E., & Espelage, D. L. (2011b). Bullying Perpetration and Victimization in Special Education: A Review of the Literature. *Remedial and Special Education*, *32*(2), 114–130. https://doi.org/10.1177/0741932510361247

Rose, C. A., Simpson, C. G., & Preast, J. L. (2016). Exploring Psychosocial Predictors of Bullying Involvement for Students With Disabilities: *Remedial and Special Education*. https://doi.org/10.1177/0741932516629219

Ruini, C., Ottolini, F., Tomba, E., Belaise, C., Albieri, E., Visani, D., Offidani, E., Caffo, E., & Fava, G. A. (2009). School intervention for promoting psychological well-being in adolescence. *Journal of Behavior Therapy and Experimental Psychiatry*, *40*(4), 522–532. https://doi.org/10.1016/j.jbtep.2009.07.002

Runions, K. C., Vithiatharan, R., Hancock, K., Lin, A., Brennan-Jones, C. G., Gray, C., & Payne, D. (2020a). Chronic health conditions, mental health and the school: A narrative review. *Health Education Journal*, *79*(4), 471–483. https://doi.org/10.1177/0017896919890898

Runions, K. C., Vithiatharan, R., Hancock, K., Lin, A., Brennan-Jones, C. G., Gray, C., & Payne, D. (2020b). Chronic health conditions, mental health and the school: A narrative review. *Health Education Journal*, *79*(4), 471–483. https://doi.org/10.1177/0017896919890898

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology; Palo Alto*, *52*, 141–166. http://dx.doi.org.proxy.library.ju.se/10.1146/annurev.psych.52.1.141

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069.

Ryff, C. D., & Singer, B. (1996a). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics*, *65*(1), 14–23.

Ryff, C. D., & Singer, B. (1996b). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics*, *65*(1), 14–23.

Shemesh, D. O., & Heiman, T. (2021). Resilience and self-concept as mediating factors in the relationship between bullying victimization and sense of well-being among adolescents. *International Journal of Adolescence and Youth*, *26*(1), 158–171. https://doi.org/10.1080/02673843.2021.1899946

Smedje, H., Broman, J.-E., Hetta, J., & Von Knorring, A.-L. (1999). Psychometric properties of a Swedish version of the "Strengths and Difficulties Questionnaire." *European Child & Adolescent Psychiatry*, *8*(2), 63–70.

Smokowski, P. R., & Evans, C. B. R. (2019a). Consequences of Bullying in Childhood, Adolescence, and Adulthood: An Ecological Perspective. In P. R. Smokowski & C. B. R. Evans (Eds.), *Bullying and*

Victimization Across the Lifespan: Playground Politics and Power (pp. 59–86). Springer International Publishing. https://doi.org/10.1007/978-3-030-20293-4_3

Smokowski, P. R., & Evans, C. B. R. (2019b). Consequences of Bullying in Childhood, Adolescence, and Adulthood: An Ecological Perspective. In P. R. Smokowski & C. B. R. Evans (Eds.), *Bullying and Victimization Across the Lifespan: Playground Politics and Power* (pp. 59–86). Springer International Publishing. https://doi.org/10.1007/978-3-030-20293-4_3

Statens Folkhälsoinstitut. (2011). *Hälsan hos barn och unga med funktionsnedsättning. Östersund: Statens Folkhälsoinstitut*.

Tajik-Parvinchi, D., Farmus, L., Tablon Modica, P., Cribbie, R. A., & Weiss, J. A. (2021). The role of cognitive control and emotion regulation in predicting mental health problems in children with neurodevelopmental disorders. *Child: Care, Health and Development*, *47*(5), 608–617. https://doi.org/10.1111/cch.12868

Tough, H., Siegrist, J., & Fekete, C. (2017). Social relationships, mental health and wellbeing in physical disability: A systematic review. *BMC Public Health*, *17*(1), 414. https://doi.org/10.1186/s12889-017-4308-6

Tudge, J. R., Mokrova, I., Hatfield, B. E., & Karnik, R. B. (2009). Uses and misuses of Bronfenbrenner's bioecological theory of human development. *Journal of Family Theory & Review*, *1*(4), 198–210.

Turner, M. G., Exum, M. L., Brame, R., & Holt, T. J. (2013). Bullying victimization and adolescent mental health: General and typological effects across sex. *Journal of Criminal Justice*, *41*(1), 53–59. https://doi.org/10.1016/j.jcrimjus.2012.12.005

United Nations. (1989). *Convention on the Rights of the Child [UNCRC]*. United Nations Human Rights Office of the High Commisioner. https://www.ohchr.org/en/professionalinterest/pages/crc.aspx

Van Cleave, J., & Davis, M. M. (2006). Bullying and peer victimization among children with special health care needs. *Pediatrics*, *118*(4), E1212–E1219. https://doi.org/10.1542/peds.2005-3034

van Geelen, S. M., & Hagquist, C. (2016). Are the time trends in adolescent psychosomatic problems related to functional impairment in daily life? A 23-year study among 20,000 15–16year olds in Sweden. *Journal of Psychosomatic Research*, *87*, 50–56. https://doi.org/10.1016/j.jpsychores.2016.06.003

Westerhof, G. J., & Keyes, C. L. M. (2009). Mental Illness and Mental Health: The Two Continua Model Across the Lifespan. *J Adult Dev*, *17*(2), 110–119. https://doi.org/10.1007/s10804-009-9082-y

Witten, H., Link to external site, this link will open in a new window, Savahl, S., & Adams, S. (2019). Adolescent flourishing: A systematic review. *Cogent Psychology; Abingdon*, *6*(1). http://dx.doi.org.proxy.library.ju.se/10.1080/23311908.2019.1640341

World Health Organization. (2001). *International Classification of Functioning, Disability and Health: ICF*.

World Health Organization. (2007). *International Classification of Functioning, Disability and Health: Children & Youth Version ; ICF-CY*. World Health Organization.

World Health Organization. (2014). Mental health: A state of well-being. 2014. *Report of the WHO Department of Mental Health*.

World Health Organization. (2017). *ICD-11*. Neurodevelopmental Disorders. http://id.who.int/icd/entity/1516623224

World Health Organization. (2018). *World Health Organization. Adolescent mental health in the European region*. http://www.euro.who.int/__data/assets/pdf_file/0005/383891/adolescent-mh-fs-eng.pdf

World Medical Association [WMA]. (2013). *Ethical Principles for Medical Research Involving Human Subjects*. https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/