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The subjective well-being of adolescent Canadians with disabilities

Amber Savage • David McConnell • Eric Emerson • Gwynnyth Llewellyn

A Savage (Corresponding Author)

Family and Disability Studies Initiative, Rehabilitation Medicine, University of Alberta

3-66 Corbett Hall, University of Alberta, Edmonton, AB, Canada T6G 2G4 •

amsavage@ualberta.ca

D McConnell

Family and Disability Studies Initiative, Rehabilitation Medicine, University of Alberta,

Edmonton, AB, Canada

E Emerson • G Llewellyn

Centre for Disability Research and Policy, University of Sydney, Sydney, NSW, Australia

Compliance with Ethical Standards

Conflict of Interest

The authors declare that they have no conflict of interest.

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Author Contributions

AS: designed and executed the study, conducted all data analyses, and wrote the paper. DM: collaborated with the design and execution of the study, oversaw the analysis, and contributed to the writing of the paper. EE: collaborated with the design of the study and editing of the final manuscript. GL: collaborated with the design of the study and editing of the final manuscript.

The subjective well-being of adolescent Canadians with disabilities

In line with growing interest in subjective well-being (SWB) as a goal of public policy, a substantial research base examining the correlates, effects and determinants of adolescent SWB is beginning to develop. However, there is a dearth of data on the SWB of adolescents with disabilities. The limited available data suggest that adolescents with disabilities in high-income countries face a heightened risk of poorer SWB relative to peers without disabilities. Few studies have investigated potential causes of disability-based differences in adolescent SWB. This lack of research may be due, in part, to the widely held but now contested assumption that disability is inherently negative and therefore a direct cause of poorer SWB. Utilizing data from the Canadian National Longitudinal Survey of Children and Youth, this study investigated the potential mediating role of adverse life conditions, including socioeconomic disadvantage, impoverished peer relationships, and peer victimisation. Employing structural equation modelling, the study found evidence consistent with a causal chain running from early childhood disability, through adverse life conditions, to poorer adolescent SWB. The findings suggest that poorer SWB in adolescents with disabilities cannot be assumed or attributed to disability in any straightforward way. With equivalent means, including economic and social resources, adolescents with disabilities may enjoy levels of SWB that are not significantly different from their peers without disabilities.

Key Words

Subjective well-being • Adolescence • Life Satisfaction • Disability • Disadvantage

Highlights

- In this population-based study, adolescents with disabilities reported poorer subjective well-being (SWB) than their peers
- Growing up, adolescents with disabilities were more likely to be exposed to adverse life conditions compared with their peers
- The relationship between disability identified in early childhood and adolescent SWB was fully mediated by adverse life conditions
- Findings indicate that poorer SWB in adolescents with disabilities is, at least in part, a result of differential exposure to adverse life conditions

Introduction

Subjective well-being (SWB) is regarded as an important goal of public policy (Helliwell et al., 2019; Stiglitz et al., 2009; United Nations, 2012). Hedonic SWB may be defined as “people’s evaluations of their lives – the degree to which their thoughtful appraisals and affective reactions indicate that their lives are desirable and proceeding well” (Diener et al., 2015, p.234). Research on SWB has expanded in high-income countries, including studies investigating SWB in adolescence. High adolescent SWB has been shown to be associated with a number of positive outcomes including academic success (Bücker et al., 2018; Datu & King, 2018), physical health (Shaffer-Hudkins et al., 2010), and greater ability to cope with adversity (Coyle & Vera, 2013; Jaafar et al., 2014). This literature includes a small but growing number of studies investigating the SWB of adolescents with disabilities. The results of these studies suggest that adolescents with disabilities face a heightened risk of poorer SWB, or more specifically, lower levels of happiness and life satisfaction relative to their peers without disabilities.

Knowledge about the SWB of adolescents with disabilities comes mostly from studies of specific sub-groups. Franke et al., (2019) for example found that adolescents with Autism Spectrum Disorder (n=46) report significantly lower satisfaction with life than ‘typical’ same age peers (n= 67). Similar findings have been presented for adolescents with various conditions and impairments including emotional and behavioral disorders (Sacks & Kern, 2008), learning disabilities (McNamara et al., 2005), mobility impairments (Patrick et al., 2002), and developmental disorders (Coudronnière et al., 2018; Rueda et al., 2014). Researchers have only recently begun to utilise population-based data to investigate the SWB of adolescents with self-reported disabilities. These studies have generated additional evidence that adolescents with

disabilities, on average, experience poorer SWB than their peers without disabilities (Emerson et al., 2008; 2009; 2012; Daley et al., 2018).

Research on the SWB of adolescents with and without disabilities is, however, limited in a number of ways. One important limitation is that few studies have operationally defined hedonic SWB in a way that is congruent with extant theory and research, that is, Diener's (1984) widely cited tripartite conceptualization of life satisfaction [LS], positive affect [PA], and negative affect [NA]. These three core components may be configured in a number of ways (e.g., three distinct phenomena, a hierarchical construct, a causal system, a composite construct), each with different and potentially conflicting implications for the analysis and interpretation of SWB (Busseri & Sadava, 2011). The bulk of evidence to date (E.g. Arthaud-day et al., 2005; Metler & Busseri, 2017; Joshanloo, 2015) including a recent meta-analysis of 40 samples (Busseri, 2018), support the configuration of hedonic SWB as a higher order latent construct encompassing LS, PA, and NA as three distinct components.

Another limitation is that few studies have investigated factors that may contribute to disability-based differences in SWB, or the components thereof. This neglect may be due, at least in part, to what Amundson (2005) terms the 'standard view': the widespread but contestable assumption that disability is 'essentially' negative and therefore a direct cause of poorer SWB. The relationship between disability and SWB may be explained by differential exposure to adverse life conditions. Adolescents with disabilities are disproportionately exposed to life conditions that are associated with poorer SWB among their peers. Research suggests that exposure to socioeconomic disadvantage (Proctor et al., 2009; Orkibi & Dafner, 2016), impoverished peer relationships (Goswami, 2012, Raboteg-Saric & Sakic, 2014), and peer victimisation (Suldo et al., 2015) are associated with poorer SWB among 'typical' adolescents.

In Canada, children and adolescents with disabilities are more likely than their peers without disabilities to live below the low-income cut-off, and are nearly twice as likely to live in households that rely on social assistance as a main source of income (Daley et al., 2018; Khanna et al., 2015; Statistics Canada, 2008). Similarly, in the United States families raising a child with disabilities are significantly more likely to experience housing instability, food insecurity, and restricted access to health care (Parish et al., 2008). Adolescents with disabilities tend to be less positive about their friendships (Coudronnière et al., 2018; Franke et al., 2019; Ecotiere 2015; MacArthur, 2013) and less likely to report having a cohesive network of friends (Gerhardt et al., 2015; Tipton et al., 2013). In addition, students with disabilities face harassment, bullying and peer violence more often than their peers without disabilities (Daley et al., 2018, Humphrey & Hebron, 2015; Jones, 2012; Rose et al., 2015; Sentenac et al., 2013).

Edwards, Patrick and Topolski (2003) investigated composite quality of life (including each of the three components of SWB) among American high school students with (n=220) and without (n= 740) self-reported disabilities, and found that no statistically significance difference existed after controlling for measures of social adversity (e.g., adverse family and peer relationships). Similarly, analyzing nationally representative data at two points in time (2001, n= 3,465; 2006, n= 3,392) Emerson et al., (2009) found that young Australians with self-reported disabilities aged 15-29 years consistently reported poorer life satisfaction, lower social support, and greater financial hardship than young Australians without disabilities. Under conditions of low financial hardship and high social support, these young people with disabilities reported levels of life satisfaction that were not significantly different from their peers without disabilities (Emerson et al., 2009). Utilizing cross-sectional Canadian population-based data Daley and colleagues (2018), found that youth (n=2,193) age 12-17 years with disabilities reported lower

life satisfaction and greater experience of discrimination than same age peers (n=11,997).

However, youth with a strong sense of community belonging reported life satisfaction on par with peers without disabilities regardless of experience of discrimination. Further research, utilising population-based longitudinal data, is now needed to advance understanding of whether and if so *how* adverse life conditions could explain differences in SWB between adolescents with disabilities and their peers without disabilities.

There are a variety of ways in which differential exposure to adverse life conditions may explain the relationship between disability and poorer adolescent SWB. It is possible that the relationship or correlation between disability and adolescent SWB is spurious, with adverse life conditions being a common cause of both disability and low adolescent SWB. Alternatively, there are potentially a number of paths connecting disability, adverse life conditions and SWB. One plausible hypothesis is that life conditions mediate the relationship between disability and SWB. Children and adolescents with disabilities may, for instance, face a heightened risk of exposure to socioeconomic disadvantage due to the out-of-the-ordinary direct and or indirect costs (e.g., reduced parent workforce participation) associated with their upbringing (McConnell et al., 2014). Another plausible hypothesis is that disability (at least partially) mediates the relationship between adverse life conditions and poorer adolescent SWB. Of course these paths are not mutually exclusive: there may be many paths of influence, including non-recursive and/or recursive paths.

The purpose of this study was to investigate the relationship between disability, exposure to adverse childhood life conditions, and adolescent SWB. This investigation was designed to redress the limitations of the existing evidence-base by: (1) comparing the SWB of adolescents with and without disabilities in a population representative sample; (2) employing statistical

techniques that allow for examination of life satisfaction, positive affect, and negative affect as observed indicators of a higher order latent SWB construct; and, (3) investigating whether life conditions in preadolescence and adolescence mediate any observed relationship between disability, identified in early childhood, and adolescent SWB. The primary hypothesis was that the relationship between disability and adolescent SWB is mediated by exposure to adverse life conditions; specifically, impoverished peer relationships and exposure to peer victimisation and socioeconomic disadvantage in preadolescence and adolescence. The nested hypotheses were:

Hypothesis i. There is a negative association between disability identified in early childhood and SWB in adolescence.

Hypothesis ii. Children with disabilities are exposed to greater socioeconomic disadvantage than peers without disabilities from early childhood through to adolescence.

Hypothesis iii. In preadolescence and adolescence, children with disabilities report more impoverished peer relationships and greater exposure to peer victimisation than same age peers.

Method

Participants

The methodology of this study was secondary data analysis of the Canadian National Longitudinal Survey of Children and Youth (NLSCY). Statistics Canada approved access to seven biennial cycles of NLSCY confidential micro data to be analyzed within the local Research Data Centre (RDC). When appropriate weighting procedures are employed, the original longitudinal NLSCY cohort is representative of children living in any Canadian province aged 0-11 years as of December 31, 1994 (Statistics Canada, 2010). While more recently collected data would be ideal, the NLSCY continues to be the only source of longitudinal,

population data available for testing theory pertaining to the subjective well-being of Canadian children and youth, and as such the best source of data for the current study. In line with the vast majority of Canadian population surveys, ‘national representation’ refers to persons residing in the ten Canadian provinces (i.e., 98% of the population) (Statistics Canada, 2010). This sample does not contain nor represent children residing in the territories (the Yukon, Nunavut and the Northwest Territories), on First Nation’s reserves, on military bases, or those living in institutions.

Procedure

Data were collected by Statistics Canada employees through computer-assisted interviewing methods and paper questionnaires. Data were collected at eight biennial time points from 1995 (Cycle 1) to 2009 (Cycle 8). Full details of the sampling procedure and survey design may be found elsewhere (Statistics Canada, 2010). The majority of data collected on children over age 10, and all data collected on those less than 10 years, was collected from the person most knowledgeable (PMK) about the child, typically the child’s mother. Self-report data were collected from children aged 10 and older. For the purposes of this study, a longitudinal sample was drawn capturing three chronological age groups: age 4-5 years [early childhood], age 10-11 years [preadolescence], and age 14-15 years [adolescence]. To maximize sample size, age groups were stacked by selected chronological age ranges. Children aged 4-5 years in Cycle 2 or 3 were merged to create the early childhood group. As these children grew to age 10-11 years they became the middle childhood group (now in Cycle 5 and 6 respectively). These same cases are examined again at age 14-15 years as they reach adolescence (in Cycle 7 and 8 respectively). Cycle 2 was selected as a starting point rather than Cycle 1 given differences in Cycle 1

including restricting cases to two children per household and dropping all National Population Health Survey sourced cases (Statistics Canada, 2010, p.23-24).

Measures

Disability. Children with disabilities were identified in two ways, based on PMK report. First, preschool age children (4-5 years old) were categorized as disabled if the PMK responded yes to the question “*does this child have any long term conditions or health problems [that has lasted or is expected to last 6 months or more] which prevent or limit his/her participation in school, at play, or in any other activity for a child of his/her age*”. Second, children with disabilities were identified using the PMK completed Health Utilities Index (HUI; Horsman et al., 2003). Total HUI scores range from 0.0 to 1.0, with 1.0 representing highest overall function. A total HUI score equal to or less than 0.88 denotes disability, defined as a reduced level of function that cannot be corrected (e.g., with technical aids) and/or prevents activity participation (Feng et al., 2009). Notably, the NLSCY did not ask if the child’s disability was formally diagnosed, and it did not include any comprehensive, formal assessment of child functioning.

Adolescent Subjective well-being. Items were selected from the Cycle 7 and 8 NLSCY youth self-report questionnaire to measure the three components of SWB: life satisfaction, positive affect and negative affect. Life satisfaction [LS] was measured by the item, “in general, I am happy with how things are for me in my life now”, with four response options, ranging from 1 = strongly disagree to 4 = strongly agree. The youth questionnaire does not include a positive and/or negative affect scale. Scales were therefore purpose-created, using items in the youth questionnaire that most closely approximate items in standard in affect scales (e.g., Diener et al., 2010; Laurent et al., 1999; Watson et al., 1988). Items selected to assess positive affect were; “I have a lot to be proud of” [PosA], “a lot of things about me are good” [PosB], and “I enjoy the

things I do” [PosC] with four response options ranging from 1 = false/mostly false/rarely true of me, to 4 = true/very often true of me. Items selected to assess negative affect were; “I am not as happy as other people my age” [NegA], “I am unhappy or sad” [NegB], and “I have trouble enjoying myself” [NegC] with three response options ranging from 1 = never or not true, to 4 = often or very true.

Peer Relationships. Quality of peer relationships items were present in both Cycles 5-6 and 7-8; “I have many friends” [PR A], “others my age want me to be their friend” [PR B], and “most others my age like me” [PR C] rated from 1=false to 5= true.

Peer Victimization. In Cycle 5-6 preadolescents (aged 10-11 years) are asked how often peers say mean things to them [VicA], and how often they are bullied [VicB], from 1 = all of the time to 5 = never (both items were reverse scored prior to analysis). In Cycles 7-8 the now-adolescents are asked about the frequency of intimidation (‘someone [said] something personal about you that made you feel extremely uncomfortable’) [Int.], threats (‘someone threaten[ed] to hurt you but did not actually hurt you’) [Thr.], and physical violence (“someone physically attack[ed] or assault[ed] you”) [Att.] endured over the previous year; 1 = never, 2 = once or twice, 3 = 3 or 4 times, or 4 = 5 times or more.

Socioeconomic Disadvantage. Exposure to socioeconomic disadvantage was inferred by household socioeconomic position, i.e., household income [Inc.], parental educational attainment [Ed.], and parental occupational status [Occ.]. Due to variation across cycles in the scope, structure and availability of items, different methods had to be used in Cycles 2-3, 5-6, and 7-8 to obtain these measures. **Income.** Raw annual household displayed an extremely non-normal distribution owing to outliers with some incomes 30-35 times that of the average Canadian family. Therefore, a winsorized, ordered categorical measure of annual household

income was generated with 22 ascending categories (i.e., 1=< \$9,999; 2= \$10,000- \$19,999; 3= \$20,000- \$29,999; ... 20= \$190,000- \$199,999; 21= \$200,000- \$249,999; 22= \$250,000+).

Education. Disparate categories across cycles were collapsed, creating a uniform 6-point scale: 1= < high school diploma; 2= high school graduate; 3= some post-secondary without graduation; 4= post-secondary diploma or certificate; 5= undergraduate degree; 6= graduate school degree or greater. The highest level of household parental education attained (comparing PMK with spouse where applicable) was used in this study. **Occupation.** The National Occupational Classification (NOC) system is the most widely used occupational classification system in Canada (Government of Canada, 2013). Occupation codes based on parent report occupation in Cycles 5 through 8 were manually converted into NOC codes using a conversion matrix provided by Statistics Canada (Statistics Canada, 2013), then ranked on the 26-point Canadian Occupational Prestige Scale (Goyder & Frank, 2007). Scores were reversed to rank low to high status, and a new lowest category introduced to denote total household unemployment. Next, the ordered categories were reduced to 1-9 (collapsed by 3) to correct a bimodal distribution. Cycles 2-3 utilize the 16-point 'Pineo Scale' rather than a national level coding scheme. While not directly comparable with the NOC Scale, the Pineo scaling technique was used by Statistics Canada to inform public policy recommendations during the mid to late 1990s (Statistics Canada, 1996). Categories were collapsed by 2, and a new lowest category was introduced to denote total household unemployment, thereby creating a consistent 9-point 'highest household parental occupational status scale'.

Data Analyses

The analytic approach was designed to make the most of available data within data release restrictions put in place by Statistics Canada, and availability of software in the Research

Data Centre (RDC). Data screening and cleaning took place within the local RDC. Analyses were conducted using SPSS v.22 and Stata v.12. All relevant files (longitudinal cohort Cycles 2 through 8 plus child self-report Cycles 6 through 8) were examined for completeness. Data were merged to create stacked datasets. A unique, 14-character child identification code as well as child birthdate (date, month and year variables) were matched continuously throughout data preparation to ensure accurate file merging. Cases with total non-response at any age point were removed from the sample. The final longitudinal sample includes all cases for whom PMK and youth report data is available at early childhood, preadolescence, and adolescence (n=3,199). Figure 1 summarizes the formation of the longitudinal sample.

(Insert Figure 1 about here)

Structural equation modeling (SEM) was employed to test the hypothesised relationship between disability identified in early childhood and adolescent SWB, as well as proposed pathways between disability and exposure to adverse life conditions across childhood to SWB in adolescence. Kline (2010) provides an accessible introduction to SEM analysis, including discussion of assumptions underpinning the technique. In short, SEM can be conceptualized as an amalgamation of confirmatory factor analysis (CFA) - the measurement model - and path analysis - the structural model (Iacobucci, 2009; Kline, 2010; Schreiber et al., 2006). A model, or series of models, is specified to reflect hypothesized relationships among constructs based on robust theoretical reasoning. The proposed model is then assessed against existing data to determine how closely the hypothesized relationships mirror observed relationships. A narrow difference between the estimated and actual data suggests good model fit, whereas a large difference suggests the hypothesized model is not consistent with 'real world' relationships (Kline, 2010).

Missing Values. Missing values were found to be low (<5%) for all youth and PMK report variables. Pattern examination suggested that the small proportion of missing data was likely missing at random (MAR). Specifically, dummy variables created to depict ‘missingness’ for each variable (0=observed, 1=missing) did not demonstrate a notable pattern of collinearity. In such circumstances single imputation maximum likelihood estimation can be employed to generate relatively unbiased estimates (Allison, 2003; Enders, 2001; Shin et al., 2009). The IBM SPSS Missing Values Module v. 20 expectation maximization algorithm was employed to impute all partially missing data.

Weighting. To accommodate the NLSCY’s complex multi-staged, stratified, non-random survey design, account for unequal probabilities of selection and attrition as much as possible, and to ensure comparability between the NLSCY and Canadian population estimates, a decision was made to utilize normalized survey weights in the final stage of all analyses (Alderman et al., 2001; Lumley, 2004, Statistics Canada, 2010).

Model Estimation. Maximum Likelihood (ML), the default estimation method in Stata, assumes full joint normality of all observed variables (Schermelleh-Engel et al., 2003; StataCorp, 2013). While the data demonstrated univariate normality, Mardia’s test of multivariate normality demonstrated both non-normal skewness and kurtosis across each set of variables (Mardia, 1970; StataCorp, 2015). Satorra–Bentler adjustments may be paired with ML estimation to produce robust, corrected estimates including fit statistics, standard errors, p-values and confidence intervals (Acock, 2013; Curran et al., 1996; Schermelleh-Engel et al., 2003; StataCorp, 2015). However, Satorra–Bentler adjustments cannot be applied with normalized sample weights. Quasimaximum likelihood (QML) uses ML estimation to fit model parameters but relaxes normality assumptions by adjusting standard errors (StataCorp, 2015). This method allows data

to be weighted thereby correcting as much as possible for the NLSCY's complex survey design, attrition, and unequal probabilities of selection. However, modification indices and most fit statistics cannot be generated when survey weights are applied. Taking into account that no available estimation techniques allow for both the production and interpretation of relatively unbiased and accurate estimates, a combination of methods was selected. Hypothesized measurement and structural models were first explored using unweighted, raw data as input employing Maximum Likelihood with Satorra–Bentler corrected estimates. Estimates provided were then used to appropriately adjust parameter specification and interpret model fit. If the measurement model appeared sound, and the structural model fit the data well, the model was examined again using normalized survey weights with quasi-maximum likelihood (QML or vce, robust) estimation.

Goodness-of-fit indices. The commonly reported χ^2 statistic assesses model misspecification and therefore should be non-significant. However, it is likely to be significant regardless of model fit if the sample is large (Iacobucci, 2010; Schermelleh-Engel et al., 2003). Given the large sample utilized in the current study, four alternative fit-indices are reported. The CFI (> .95 indicates good model fit); the TLI (> .95 indicates good model fit); the RMSEA (< .05 indicates good model fit, values between .05 and .08 suggest acceptable model fit); and the SRMR (< .05 indicates good model fit) (Hu & Bentler, 1999; Iacobucci, 2010; Schermelleh-Engel et al., 2003).

Results

A weighted zero-order correlation matrix was generated (See Table 1), as well as descriptive child and family characteristics (See Table 2). Based on PMK report, there were 307 (9.6%) children with disabilities in the sample. This estimate falls between published Canadian

prevalence estimates ranging from 4.6% (Statistics Canada, 2008) to 11.0% (Ontario Ministry of Education, 2009).

(Insert Tables 1 and 2 about here)

Hypothesis I

There is a negative association between disability identified in early childhood and adolescent SWB.

(Insert Figure 2 about here)

Measurement and structural models designed to approximate the hypothesized structure of SWB were examined using maximum likelihood (ML) estimation with Satorra–Bentler (SB) adjustments using un-weighted raw data. The structural model demonstrated sound model fit as evidenced by supplementary fit indices (χ^2 [SB]= 113.54(df 28) $p<.001$, RMSEA[SB]= .031, CFI[SB]=.988, TLI[SB]=.982, SRMR=.017). The model, depicted in Figure 3, also describes weighted data well (SRMR=.021).

(Insert Table 3 about here)

The effects decomposition listed in Table 3 shows significant associations between child disability and individual components of adolescent SWB as well as the overarching latent construct. The total effect of early childhood disability on adolescent SWB may be described as ‘small’ (standardized path coefficient = -.095, $p<.05$). However, the observed effect of early childhood disability was similar in magnitude to the observed effect of aboriginal status (standardized path coefficient = -.050, $p<.05$) and female gender (standardized path coefficient = -.154, $p<.05$), which have both previously been linked to poorer adolescent SWB in Canada (Burton et al., 2015; Michalos & Orlando, 2006; Trull, 2003).

Hypothesis II

Children with disabilities are exposed to greater socioeconomic disadvantage than peers without disabilities from early childhood into adolescence.

In the current study, exposure to socioeconomic disadvantage was inferred by household socioeconomic position, i.e., household income, parental educational attainment, and parental occupational status. Multiple regression results displayed in Table 4 show that disability identified at age 4-5 years significantly predicts socioeconomic disadvantage at three points across childhood, with the effects of child gender and aboriginal status held constant. The effect size was calculated with statistical Cohen's *d* wherein values of $< .20$ indicates a small size, values of $.20 - .50$ indicates a medium size, and $> .50$ indicates a large size (Cohen, 1988). Although the observed effect sizes are arguably small, statistically significant differences between children with disabilities and their peers without disabilities were found across all indicators over the 10 year period. Moreover, the confidence intervals show that larger effect sizes are also consistent with the data.

(Insert Table 4 about here)

Hypothesis III

In preadolescence and adolescence, children with disabilities report more impoverished peer relationships and greater exposure to peer victimisation than same age peers.

Preadolescents 10-11 years of age with disabilities were significantly more likely than same age peers to report "other young people say mean things to me at school" all or most of the time (18.2% v. 9.8%; Adjusted OR= 2.01, 95%CI= 1.46, 2.76; $p < .001$), and "I am bullied in school" all or most of the time (8.4% v. 4.5%; Adjusted OR= 1.87, 95%CI= 1.20, 2.92; $p = .006$). Four years later, this same group of young people with disabilities reported significantly more

frequent verbal abuse and threats of physical violence relative to their peers without disabilities (see Table 5).

(Insert Table 5 about here)

Results suggest that youth with disabilities may have increasingly impoverished friendships following the transition from preadolescent to adolescent. Children with disabilities at age 10-11 years report that ‘others my age want me to be their friend’ and that they ‘have many friends’ at par with other preteens. Four years later this group reports significantly less agreement with the same statements relative to same age peers. In addition, adolescents with disabilities were less likely than peers without disabilities to agree with the statement ‘most others my age like me’.

Primary Hypothesis

The relationship between disability (identified in early childhood) and adolescent SWB is mediated by exposure to adverse life conditions; specifically, impoverished peer relationships and exposure to peer victimisation and socioeconomic disadvantage in preadolescence and adolescence.

To investigate the direct and indirect effects of disability, peer relationships, and exposure to peer victimisation and socioeconomic disadvantage on adolescent SWB the model displayed in Figure 3 was examined. In the interest of parsimony, socioeconomic disadvantage (SED) at early childhood was excluded from the final model. Initial assessments found that household SED was extremely consistent across the 10 year period (Standardized Coef. > .90). Additionally, indicators of peer relationships and victimisation are only available at preadolescence and adolescence meaning that exclusion of early childhood SED enforced model symmetry. The model provided a reasonable description of both the unweighted data ($\chi^2[SB]=$

806.18(df 271) $p < .001$, RMSEA[SB]= .025, CFI[SB]=.984, TLI[SB]=.979, SRMR=.026) and weighted data (SRMR=.029).

(Insert Figure 3 about here)

Direct, indirect and total effects are presented in Table 6. The model accounted for a sizable proportion of the variance in SWB ($R^2 = .376$). The small but statistically significant effect of disability in early childhood, on SWB in adolescence, is fully mediated by exposure to adverse life conditions. Of potential mediation pathways running from early childhood disabilities to SWB in adolescence, only two were found to account for a significant proportion of the standardized indirect effect. The first path may be termed the ‘peer relationship and victimisation pathway’: $\text{Disabilities}_{\text{E}} \rightarrow \text{Victimisation}_{\text{P}} \rightarrow \text{Peer Relationships}_{\text{P}} \rightarrow \text{Peer Relationships}_{\text{A}} \rightarrow \text{SWB}_{\text{A}}$ (Coef.= -.005, SE= .002[-.010, -.001], $p=.029$). The second path may be termed the ‘socioeconomic pathway’ running: $\text{Disabilities}_{\text{E}} \rightarrow \text{SED}_{\text{P}} \rightarrow \text{SED}_{\text{A}} \rightarrow \text{Peer Relationships}_{\text{A}} \rightarrow \text{SWB}_{\text{A}}$ (Coef.= -.005, SE= .002[-.008, -.001], $p=.023$). These results should be interpreted with caution; indirect path coefficients are quite small as would be expected given the small standardized total effect (Coef.= -.094, $p=.013$). Overall, the findings are consistent with the primary hypothesis; that is, that the relationship between disability identified in early childhood and SWB in adolescence is fully mediated by impoverished peer relationships and exposure to peer victimisation and socioeconomic disadvantage in preadolescence and adolescence.

(Insert Table 6 about here)

Discussion

This study adds to the limited body of literature investigating disability-based inequalities in the well-being of youth. In investigating a nationally representative sample of Canadian

children spanning a decade, this study found small but statistically significant effects of child disability, identified at age 4-5 years, on the overarching construct and individual components of SWB in adolescence. This finding is in line with previous studies demonstrating a negative relationship between disability and components of SWB among youth (Edwards et al., 2003; Emerson et al., 2012; Franke et al., 2019; McNamara et al., 2005).

Accumulating research across high-income countries suggests that families raising a child with disabilities are more likely to be exposed to socioeconomic disadvantage (Khanna et al., 2015; Parish et al., 2008; Statistics Canada, 2008). Results from the current investigation are consistent with this body of evidence finding that children with disabilities identified at age 4-5 years were exposed to greater socioeconomic disadvantage than comparison peers across childhood from preschool age to adolescence. In preadolescence and adolescence, children with disabilities reported more impoverished peer relationships and greater exposure to peer victimisation than same age peers. These results are congruent with previous studies suggesting that adolescents with disabilities report greater difficulty building and maintaining close bonds with peers, and are more likely to be exposed to harassment, bullying and violence when compared with their counterparts without disabilities (Daley et al., 2018; Humphrey & Hebron, 2015; Jones, 2012; MacArthur, 2013; Rose et al., 2015; Sentenac et al., 2013; Tipton et al., 2013).

Finally, this study found evidence consistent with a causal chain running from early childhood disability, through adverse life conditions, to poorer adolescent SWB. The study could not however rule out the possibility that adverse life conditions were the common cause of both disability (as measured in this study) and poorer SWB. Moreover, other variables, such as parenting practices, which may help to clarifying the relationship between disability and SWB,

were not included in the SEM analysis. Notwithstanding, the findings challenge the standard view, or assumption, that poorer SWB is inherent to disability (Amundson, 2005): The results suggest that adolescents with disabilities who are not exposed to peer victimisation, who have the friendship and acceptance of peers, and who live in families that are not subject to relative socioeconomic disadvantage, report levels of SWB that are not significantly different from their peers. The implication is that poorer SWB in adolescents with disabilities is, at least to some extent, contingent on exclusionary social responses to health conditions or impairment, rather than a direct effect of health conditions or impairment *per se*.

Strengths and Limitations

The primary strength of this investigation was the utilization of population-based, longitudinal data on Canadian children and adolescents, permitting robust testing of the study hypotheses. Longitudinal data permitted the investigation of whether the observed disparity in adolescent SWB could plausibly be attributed to differential exposure to adverse life conditions across childhood. An additional strength of this investigation was the examination of life satisfaction, positive affect, and negative affect as manifest indicators of higher-order latent SWB. A growing body of evidence supports the conceptualization of SWB as a higher-order latent factor (Arthaud-day et al., 2005; Busseri, 2018; Joshanloo, 2015). While several studies have demonstrated a link between disabilities and components of SWB among adolescents and young adults (e.g., Edwards et al., 2003; Emerson et al., 2012; McNamara et al., 2005) none of the previous work in this area attempts to empirically test SWB as a higher-order latent construct.

Despite the rich data available for analysis, this study has a number of limitations. One limitation relates to the period of data collection. The NLSCY remains the most recent,

population-based, longitudinal data available on Canadian children, but the final wave of data was completed in 2009. This limits the generalisability of the data, although recent research suggests that Canadian children with disabilities and their families continue to face a heightened risk of adverse life conditions (McConnell et al., 2014). Another limitation, associated with secondary data analysis, is lack of control over what constructs were measured or how they are measured in the NLSCY. In some instances, inconsistency in questioning and dropped items posed a challenge for analyses, i.e., some questions were asked in some cycles but not in others, item wording was not always consistent across cycles, and response categories for several items changed across cycles. These limitations were overcome, for the most part, with careful, theory-informed item selection and variable recoding. Further limitations specific to use of NLSCY data include the inability to corroborate PMK reported child disability with any other source, and probable exclusion of youth with severe to profound intellectual or physical impairment. Children who were unable to complete a pencil and paper questionnaire, or alternatively, respond to questions verbally with a researcher over the phone, are not represented. There is some research suggesting that the SWB of youth with disabilities is significantly impacted by the degree or severity of impairment – directly or indirectly (Choi, 2015; Nadeau et al., 2015). Given that children and adolescents with more severe or profound disabilities are unlikely to be represented in the NLSCY cohort, the disability-based disparity in SWB found in this study may be underestimated.

Implications and Future Directions

The results of this study should not be taken to mean that health conditions or impairments have no direct effect on children and youth; such conditions may directly affect children in ways not measured in this study. What this study does highlight the continuity and

potential impact of peer exclusion and victimisation as children transition into adolescence. Adolescents with disabilities identified in early childhood reported weaker peer relationships than same age peers throughout preadolescence and adolescence. These results indicate that social and educational policies may be needed to enhance the opportunities for children and adolescents with disabilities to form supportive peer networks. However, young people with disabilities will continue to be at a disadvantage unless the stigma and negative social reactions of peers are also addressed. Adolescents with disabilities reported a greater incidence of intimidation, bullying and exclusion. Longitudinal modelling additionally demonstrated that bullying is negatively linked to current and future peer relationships as well as adolescent SWB. Research suggests that experience of peer exclusion and victimisation can have dramatic effects on the lives of youth with disabilities from poorer academic performance (Brooks, 2011; O'Brennan et al., 2015), to poorer mental health (Berg et al., 2015; Weiss et al., 2015), lower subjective health (Sentenac et al., 2013) and, as evidenced by the current study, poorer SWB. Further, marginalization and victimisation at school compromise the right of youth with disabilities to feel safe and to fully participate in their community (MacArthur, 2013). Targeted school-based interventions including anti-stigma programs, social skills training, guided peer interaction, and providing specialized training for teachers and support staff, have demonstrated promise in the short term (e.g., Beaumont & Sofronoff, 2008; Brock et al., 2016; Humphrey & Hebron, 2015; Mikton et al., 2014; Raghavendra et al., 2013; Raskauskas & Modell, 2011; Rose et al., 2015). Further research in this area is needed to find the most efficient and long-lasting means of countering the roots of exclusion and victimisation of children and adolescents with disabilities.

Finally, there is a need to address gaps in existing research into the SWB of diverse populations of adolescents with disabilities. While understanding the causes of the poorer SWB of adolescents with disabilities broadly is a valuable addition to current knowledge, disability-based differences in the SWB of subgroups of adolescents potentially facing additional stigmatization due to, for example, sexual orientation or ethnicity, remain poorly understood. Research disaggregated by factors including but not limited to type of impairment or chronic condition, sexual orientation, ethnicity, or immigrant status may be helpful in understanding the most effective means of redressing disparate SWB among different populations of children and adolescents with disabilities. In addition, virtually everything we know about the SWB of adolescents with disabilities comes from studies of young people in high-income countries. Research is needed to investigate how adolescents with disabilities are faring in low- and middle-income countries with respect to their happiness and satisfaction with life.

In conclusion, this study provides evidence that parity of well-being has not yet been achieved for Canadian adolescents with disabilities. Further, findings from analysis of a decade of data may offer some insight into how to redress disability-based disparities in adolescent SWB. This investigation is, to our knowledge, the first to find evidence consistent with a causal chain running from early childhood disability, through adverse life conditions, to poorer adolescent SWB. Facilitating strong peer networks for children and adolescents with disabilities, and developing ways to challenge stigma and deter victimisation, appear to be practical courses of action that could make a positive difference in the lives of adolescents with disabilities.

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Table 1. Weighted zero-order correlation matrix of manifest indicators

	Child Dis (1)	Aboriginal (2)	Female (3)	E Occ. (4)	E Ed. (5)	E Income. (6)	P Occ. (7)	P Ed. (8)	P Income. (9)	P PR A (10)	P PR B (11)	P PR C (12)	P Vic A (13)	P Vic B (14)	A Occ. (15)	A Ed. (16)	A Income. (17)	A Int. (18)	A Thr. (19)	A Att. (20)	A PR. A (21)	A PR. B (22)	A PR. C (23)	A Life Sat. (24)	A Pos A (25)	A Pos B (26)	A Pos C (27)	A Neg A (28)	A Neg B (29)	A Neg C (30)	
1	1																														
2	.02	1																													
3	-.03	-.01	1																												
4	-.09*	-.07*	.01	1																											
5	-.07*	-.09*	-.03	.54*	1																										
6	-.07*	-.09*	-.02	.51*	.48*	1																									
7	-.07*	-.09*	-.02	.52*	.43*	.39*	1																								
8	-.06*	-.09*	-.04*	.48*	.73*	.43*	.46*	1																							
9	-.07*	-.10*	-.05*	.45*	.48*	.69*	.42*	.50*	1																						
10	-.04*	-.03	.06*	.02	-.03	.03	-.01	-.04*	.06*	1																					
11	-.01	-.01	.10*	.01	-.07*	-.01	-.01	-.04*	.02	.40*	1																				
12	-.05*	-.02	.14*	-.01	-.02	.04*	-.02	-.01	.05*	.47*	.57*	1																			
13	.07*	.04*	-.08*	-.06*	-.08*	-.09*	-.05*	-.06*	-.04*	-.24*	-.24*	-.36*	1																		
14	.07*	.05*	-.13*	-.05*	-.05*	-.08*	-.04*	-.04*	-.05*	-.23*	-.21*	-.27*	.54*	1																	
15	-.07*	-.09*	.01	.45*	.40*	.33*	.70*	.42*	.34*	-.01	-.01	-.02	-.09*	-.05*	1																
16	-.05*	-.11*	-.04*	.46*	.68*	.38*	.44*	.84*	.44*	-.04*	-.04*	-.02	-.05*	-.01	.47*	1															
17	-.04*	-.10*	-.03	.43*	.39*	.53*	.41*	.43*	.67*	.04*	-.01	.03	-.08*	-.01	.42*	.45*	1														
18	.08*	.04*	.17*	-.01	.04*	.02	-.01	.04*	.04*	-.02	-.03	.02	.08*	.04*	-.04*	.01	.01	1													
19	.08*	.06*	-.04*	-.04*	-.03	-.03	-.06*	-.04*	-.02	-.08*	-.08*	-.04*	.11*	.11*	-.07*	-.05*	-.04*	.43*	1												
20	.03	.04*	-.04*	-.04*	-.04*	-.07*	-.02	-.03	-.03	-.06*	-.07*	-.07*	.14*	.16*	-.03	-.04*	-.04*	.26*	.49*	1											
21	-.05*	-.07*	.03	.07*	.04*	.10*	.10*	.06*	.08*	.23*	.25*	.25*	-.20*	-.15*	.11*	.08*	.12*	-.15*	-.15*	-.11*	1										
22	-.06*	-.06*	.04*	.07*	.05*	.09*	.09*	.06*	.07*	.23*	.26*	.26*	-.20*	-.15*	.09*	.07*	.11*	-.13*	-.13*	-.10*	.96*	1									
23	-.11*	-.07*	.07*	.07*	.03	.09*	.09*	.05*	.08*	.19*	.23*	.23*	-.20*	-.15*	.09*	.05*	.09*	-.14*	-.11*	-.12*	.68*	.68*	1								
24	-.06*	-.04*	-.07*	.12*	.08*	.09*	.11*	.08*	.08*	.07*	.05*	.03	-.10*	-.08*	.12*	.09*	.12*	-.21*	-.17*	-.18*	.22*	.21*	.23*	1							
25	-.05*	-.04*	-.16*	.11*	.08*	.13*	.08*	.10*	.12*	.15*	.13*	.13*	-.10*	-.05*	.09*	.10*	.12*	-.24*	-.15*	-.14*	.30*	.28*	.28*	.49*	1						
26	-.06*	-.06*	-.12*	.06*	.06*	.09*	.10*	.10*	.10*	.10*	.12*	.11*	-.12*	-.11*	.10*	.09*	.08*	-.19*	-.13*	-.13*	.31*	.30*	.34*	.44*	.71*	1					
27	-.10*	-.03	-.06*	.10*	.09*	.11*	.12*	.10*	.12*	.07*	.05*	.06*	-.11*	-.03	.11*	.11*	.12*	-.13*	-.07*	-.10*	.22*	.21*	.23*	.45*	.50*	.48*	1				
28	.04*	.01	.07*	-.04*	-.03	-.07*	-.06*	-.06*	-.03	-.07*	-.08*	-.08*	.10*	.07*	-.03	-.05*	-.03	.30*	.21*	.19*	-.26*	-.24*	-.24*	-.45*	-.39*	-.38*	-.33*	1			
29	.04*	.03	.18*	-.06*	-.06*	-.10*	-.06*	-.05*	-.07*	-.07*	-.05*	-.03	.07*	.07*	-.02	-.06*	-.08*	.31*	.20*	.21*	-.20*	-.18*	-.19*	-.44*	-.36*	-.35*	-.27*	.54*	1		
30	.05*	.01	.05*	-.04*	-.03	-.04*	-.03	-.04*	-.01	-.03	-.05*	-.04*	.07*	.07*	-.01	-.04*	-.01	.21*	.15*	.17*	-.22*	-.20*	-.20*	-.35*	-.29*	-.31*	-.27*	.50*	.40*	1	
M	0.09	0.04	0.51	5.68	3.76	6.29	4.94	3.73	8.02	4.61	3.78	4.06	2.14	1.50	5.13	3.95	9.76	1.78	1.48	1.18	4.00	4.05	4.29	3.23	3.16	3.22	3.37	1.42	1.53	1.30	
SD	0.29	0.19	0.50	2.45	1.27	3.59	2.58	1.42	4.28	0.74	1.06	1.03	1.02	0.90	2.56	1.34	5.01	0.87	0.77	0.53	0.82	0.85	0.79	0.68	0.85	0.79	0.71	0.61	0.61	0.51	

E= Early Childhood, P= Preadolescence, A= Adolescence

Table 2. Child and family characteristics of the longitudinal sample at early childhood (Cycle 2-

3)

	Total Sample n=3199		Peers n=2891		Child with Disabilities n= 307	
	n (Mean)	% [SD]	n (Mean)	% [SD]	n (Mean)	% [SD]
PMK is Mother (bio, adopt or step)	2932	91.7	2643	91.4	289	94.0
PMK Age	(34.15)	[5.29]	(34.29)	[5.26]	(32.84)	[5.43]
PMK Martial Status						
PMK - Married	2388	74.6	2200	76.1	188	61.1
PMK - Common Law	346	10.8	295	10.2	52	16.8
PMK - Separated/Divorced/Widowed	243	7.6	216	7.5	27	8.9
PMK - Single, Never Married	222	6.9	181	6.3	41	13.2
Location of residence						
Rural	397	12.5	356	12.4	41	13.5
Urban <30,000	427	13.5	395	13.8	32	10.4
Urban 30,000 - 99,999	256	8.1	217	7.6	39	12.7
Urban 100,000 - 499,999	601	19.0	540	18.9	60	19.7
Dense urban (500,000+)	1487	46.9	1352	47.3	134	43.7
Highest Household Education						
< High school	196	6.1	162	5.6	35	11.3
High school Grad	268	8.4	229	7.9	38	12.4
Some post-secondary	714	22.3	637	22.0	76	24.8
Diploma or Certificate	1012	31.6	925	32.0	87	28.3
Bachelor's degree	738	23.1	686	23.7	52	16.9
Graduate level degree	271	8.5	252	8.7	19	6.3
Rounded Household Income (\$)	(59,500)	[44,600]	(60,300)	[45,200]	(51,600)	[45,100]
Household is below LICO	606	19.4	536	19.0	70	23.3
Single Parent Household	466	14.6	403	13.9	63	20.5
PMK Employed	2136	67.5	1,929	67.5	207	67.4
Number of children in household = 1	601	18.8	534	18.5	67	21.8
Number of children in household = 2	1487	46.5	1,340	46.3	146	47.6
Number of children in household = 3+	1112	34.7	1018	35.2	94	30.5
Child Characteristics						
Female	1614	50.5	1469	50.8	145	47.3
Aboriginal Status	108	3.4	94	3.2		below release guidelines

Note: Normalized longitudinal weight at Cycle 2/3; LICO=Low Income Cut-Off; SD= Standard Deviation

Table 3. Hypothesis 1. Weighted direct, indirect and total effects with robust standard errors

Measures		Effects decomposition					
Predictor →	Criterion	Direct		Indirect		Total	
		Coef.(SE)	Std. Coef.	Coef.(SE)	Std. Coef.	Coef.(SE)	Std. Coef.
Disabilities (E)	SWB (A)	-0.167(.07)	-.095*			-0.167(.07)	-.095*
	Life Sat. (A)			-0.167(.07)	-.072*	-0.167(.07)	-.072*
	Pos. Affect (A)			-0.180(.07)	-.081*	-0.180(.07)	-.081*
	Neg. Affect (A)			.119(.05)	.075*	.119(.05)	.075*
Gender (Female)	SWB (A)	-0.158(.03)	-.154**			-0.158(.03)	-.154**
Aboriginal Status	SWB (A)	-0.167(.07)	-.050*			-0.167(.07)	-.050*

Note. E=Early childhood, A=Adolescence, *p < .05, **p < .01

Table 4. Exposure to socioeconomic disadvantage across childhood

		Youth with disabilities	Comparison Families	Adjusted for child gender and aboriginal status		
	Scale	Mean(SD)	Mean(SD)	B[SE] Cohens <i>d</i> ^a	[95%CI] [95%CI]	St. B
Early Childhood						
Household Income	1-22	5.59(3.58)	6.49(3.62)	-0.878[.216] -.25	[-1.302, -.454] [-.37, -.13]	-.071**
Highest Household Education	1-6	3.46(1.38)	3.86(1.27)	-.400[.076] -.31	[-.550, -.250] [-.43, -.19]	-.092**
Highest Household Occupation	1-9	5.07(2.46)	5.88(2.44)	-.796[.146] -.33	[-1.083, -.508] [-.45, -.21]	-.095**
Preadolescence						
Household Income	1-22	7.03(4.10)	8.06(4.27)	-1.009[.256] -.24	[-1.510, -.508] [-.36, -.12]	-.069**
Highest Household Education	1-6	3.39(1.42)	3.76(1.43)	-.363[.086] -.26	[-.531, -.195] [-.38, -.14]	-.074**
Highest Household Occupation	1-9	4.42(2.57)	5.00(2.59)	-.569[.156] -.22	[-.874, -.264] [-.34, -.12]	-.064**
Adolescence						
Household Income	1-22	9.10(4.66)	9.83(5.05)	-.714[.303] -.15	[-1.308, -.121] [-.26, -.03]	-.042*
Highest Household Education	1-6	3.75(1.33)	3.97(1.34)	-.220[.081] -.16	[-.378, -.062] [-.28, -.05]	-.048**
Highest Household Occupation	1-9	4.54(2.51)	5.19(2.56)	-.631[.155] -.25	[-.934, -.328] [-.37, -.14]	-.072**

Note. Weighting appropriately calibrated for each time period; * $p < .05$, ** $p < .01$; ^aEffect size corresponds to unadjusted between group difference. SD= Standard Deviation; SE= Standard Error; CI= Confidence Interval

Table 5. Preadolescent and adolescent indicators of peer relationships and victimization

		Youth with disabilities	Comparison Peers	Adjusted for child gender and aboriginal status		
	Scale	Mean(SD)	Mean(SD)	B[SE] Cohens <i>d</i> ^a	[95%CI] [95%CI]	St. B
Preadolescence						
Peers say mean things	1-5	2.37(1.19)	2.12(1.02)	.237[.062] .24	[.115, .360] [.12, .36]	.067**
Bullied at school	1-5	1.70(1.06)	1.49(0.87)	.199[.053] .24	[.095, .303] [.12, .36]	.065**
Liked by peers	1-5	3.90(1.22)	4.07(1.01)	-.151[.061] -.17	[-.271, -.031] [-.28, -.05]	-.043*
Desired friend	1-5	3.80(1.09)	3.78(1.06)	.033[.064] .02	[-.092, .158] [-.10, .14]	.009
Many friends	1-5	4.53(0.85)	4.61(0.74)	-.073[.045] -.11	[-.161, .015] [-.22, .01]	-.029
Adolescence						
Teased in past year	1-5	1.99(1.01)	1.76(0.85)	.238[.052] .27	[.137, .339] [.15, .38]	.080**
Threatened in past year	1-5	1.67(0.90)	1.46(0.76)	.207[.047] .27	[.115, .299] [.15, .39]	.078**
Attacked in past year	1-5	1.24(0.59)	1.18(0.52)	.059[.032] .11	[-.004, .122] [-.00, .23]	.032
Feels like an outsider	1-5	3.85(0.94)	3.95(0.83)	-.106[.051] -.12	[-.205, -.006] [-.24, -.01]	-.037*
Liked by peers	1-5	4.03(1.00)	4.31(0.76)	-.278[.047] -.36	[-.371, -.185] [-.47, -.24]	-.103**
Desired friend	1-5	3.90(0.94)	4.07(0.84)	-.161[.051] -.20	[-.261, -.060] [-.32, -.08]	-.055**
Many friends	1-5	3.86(0.92)	4.01(0.81)	-.146[.050] -.18	[-.243, -.048] [-.30, -.06]	-.052**

Note. Weighting appropriately calibrated for each time period; * $p < .05$, ** $p < .01$; ^aEffect size corresponds to unadjusted between group difference.

Table 6. Weighted direct, indirect and total effects with robust standard errors

Measures		Effects decomposition					
Predictor →	Criterion	Direct		Indirect		Total	
		Coef.(SE)	Std. Coef.	Coef.(SE)	Std. Coef.	Coef.(SE)	Std. Coef.
Disabilities	Peer Rel. (P)	-.009(.10)	-.003	-.118(.06)	-.040*	-.126(.10)	-.043
	Peer Rel. (A)	-.096(.07)	-.043	-.110(.03)	-.050**	-.206(.07)	-.093**
	Victimisation (P)	.023(.10)	.082*	.024(.01)	.008	.255(.09)	.090**
	Victimisation (A)	.189(.09)	.077*	.035(.02)	.014	.224(.09)	.092*
	SEP (P)	-.893(.30)	-.092**			-.893(.30)	-.092**
	SEP (A)	.055(.16)	.005	-.929(.31)	-.083**	-.874(.33)	-.078**
	SWB (A)	-.025(.06)	-.015	-.131(.04)	-.079**	-.156(.06)	-.094*
Peer Rel. (P)	Peer Rel. (A)	.266(.04)	.349**			.266(.04)	.349**
	SWB (A)	-.003(.03)	-.005	.074(.01)	.129**	.071(.03)	.124**
Peer Rel. (A)	SWB (A)	.276(.03)	.370**			.276(.03)	.370**
Victimisation (P)	Peer Rel. (P)	-.513(.06)	-.498**			-.513(.06)	-.498**
	Peer Rel. (A)	-.041(.04)	-.052	-.164(.02)	-.208**	-.205(.04)	-.260**
	Victimisation (A)	.150(.04)	.173**			.150(.04)	.173**
Victimisation (A)	SWB (A)	-.014(.02)	-.024	-.090(.02)	-.153**	-.104(.02)	-.177**
	Peer Rel. (A)	-.181(.04)	-.199**			-.181(.04)	-.199**
	SWB (A)	-.231(.05)	-.339**	-.050(.01)	-.074**	-.281(.05)	-.413**
SEP (P)	Peer Rel. (P)	-.014(.01)	-.048	.014(.01)	.046*	-.001(.01)	-.002
	Peer Rel. (A)			.031(.01)	.137**	.031(.01)	.137**
	Victimisation (P)	-.027(.01)	-.092*			-.027(.01)	-.092*
	Victimisation (A)			-.001(.00)	-.002	-.000(.01)	-.002
SEP (A)	SEP (A)	1.04(.05)	.909**			1.04(.05)	.909**
	SWB (A)	.022(.02)	.126	.010(.01)	.056**	.031(.02)	.181
	Peer Rel. (A)	.029(.01)	.145**	-.001(.00)	-.003	.028(.01)	.142**
	Victimisation (A)	.003(.01)	.015			.003(.01)	.015
Gender (Female)	SWB (A)	.001(.02)	.002	.007(.01)	.048*	.007(.02)	.050
	Peer Rel. (P)	.157(.05)	.093**	.108(.03)	.064**	.266(.06)	.156**
	Peer Rel. (A)	.043(.04)	.033	.035(.02)	.027	.078(.04)	.060*
	Victimisation (P)	-.210(.06)	-.129**	.008(.01)	.005	-.203(.06)	-.123**
	Victimisation (A)	.240(.07)	.166**	-.031(.01)	-.022**	.205(.07)	.144**
	SEP (P)	-.315(.20)	-.056			-.315(.20)	-.056
	SEP (A)	.080(.14)	.012	-.328(.21)	-.050	-.247(.23)	-.038
	SWB (A)	-.126(.03)	-.130**	-.030(.02)	-.031	-.157(.03)	-.162**

Aboriginal Status	Peer Rel. (P)	-.031(.10)	-.007	-.091(.07)	-.020	-.122(.11)	-.027
	Peer Rel. (A)	-.117(.08)	-.033	-.154(.04)	-.044**	-.271(.08)	-.078**
	Victimisation (P)	.180(.12)	.041	.053(.03)	.012*	.233(.12)	.053
	Victimisation (A)	.171(.10)	.045	.026(.03)	.007	.197(.09)	.051*
	SEP (P)	-1.98(.30)	-.130**			-1.98(.30)	-.130**
	SEP (A)	-.574(.29)	-.034*	-2.07(.32)	-.118**	-2.64(.37)	-.151**
	SWB (A)	.039(.05)	.015	-.167(.04)	-.064**	-.128(.06)	-.049*

Note. E=Early childhood, P=Preadolescence, A=Adolescence, * $p < .05$, ** $p < .01$

Figure 1. Formation of the longitudinal sample

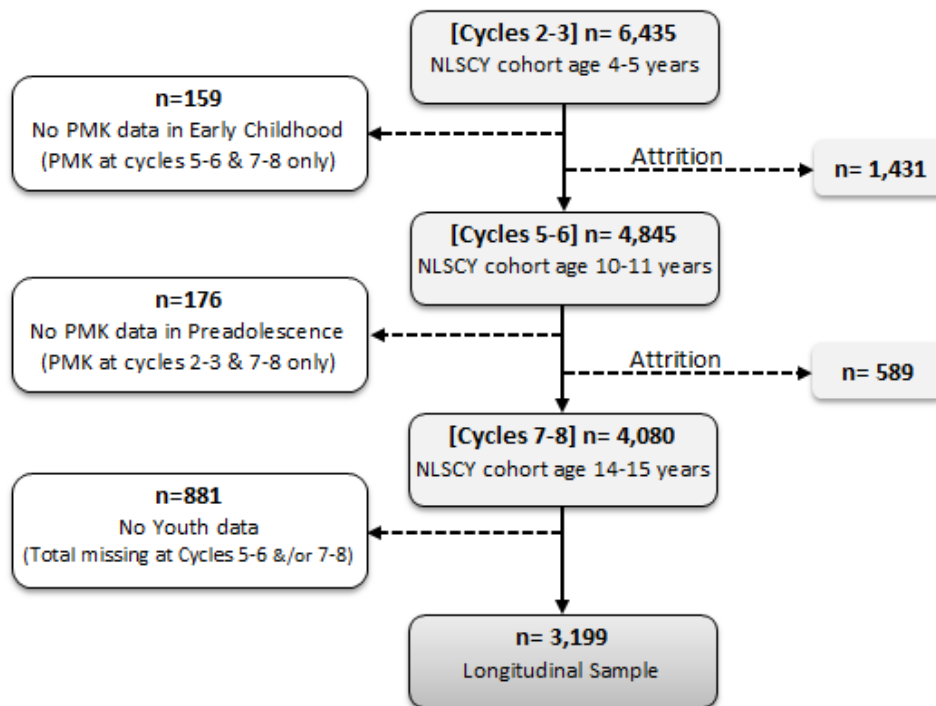
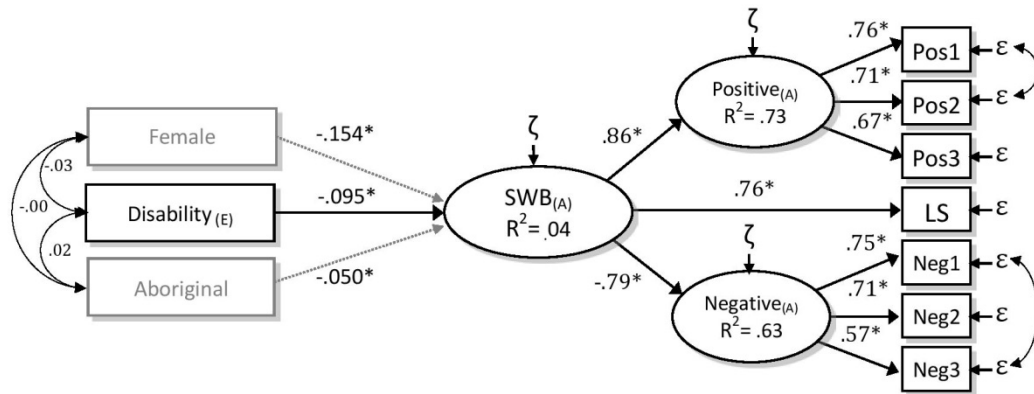
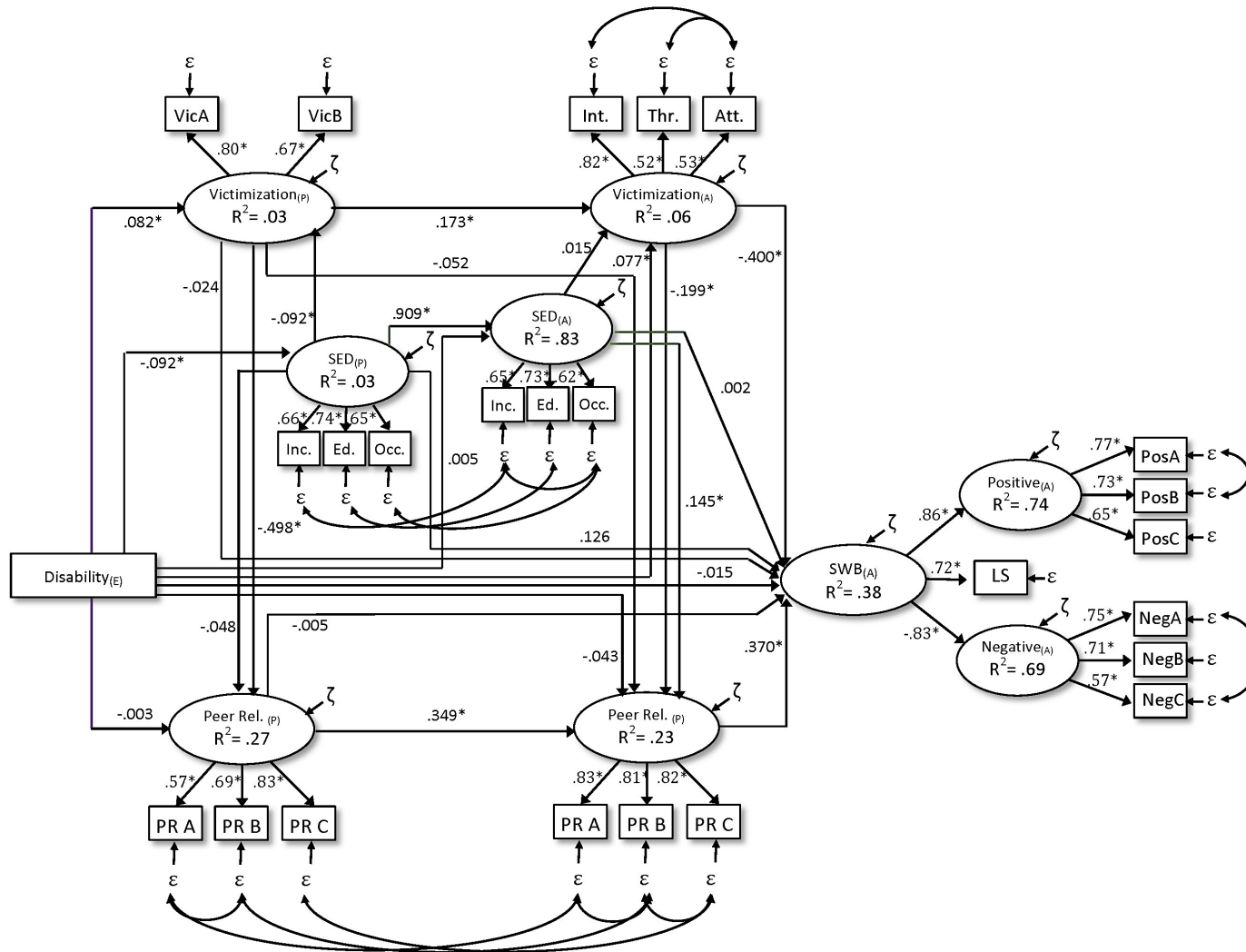


Figure 2. SEM analysis: Disabilities and adolescent SWB



* $p < .05$

Figure 3. SEM analysis: Disabilities, peer relationships, SED and adolescent SWB



Note: Aboriginal status and gender omitted from figure to increase readability; * $p < .05$

