

THE ROLE OF THRIVING IN WELL-BEING AMONG YOUTH AND ADULTS WITH
INTELLECTUAL AND DEVELOPMENTAL DISABILITIES DURING THE COVID-19
PANDEMIC

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Abstract

People with intellectual and developmental disabilities (IDD) have been found to be at a greater risk of experiencing mental health problems, especially during the COVID-19 pandemic. Aspects of thriving have been suggested to buffer against negative outcomes among youth and young adults without IDD. Ecological resources have been linked to thriving and the experience of fewer mental health problems. The current study examined how thriving may mediate the association between ecological resources in the community and mental health problems among youth and adults with IDD, and if it acts as a protective factor in the face of COVID-19 stressors. The sample consisted of caregivers of 171 youth and adults with IDD ages 12 to 35. A mediation analysis revealed that community resources were negatively associated with mental health problems and thriving partially mediated this association. The moderation analysis revealed that although thriving did not moderate the positive association between COVID-19 stressors and mental health problems, thriving was negatively associated with mental health problems. Our findings suggest that community resources and thriving may be important targets for mental health supports for people with IDD.

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The Role of Thriving in Well-Being Among Youth and Adults With Intellectual and Developmental Disabilities During the COVID-19 Pandemic

Individuals with intellectual and developmental disabilities (IDD; e.g., intellectual disability, autism) often struggle with mental health problems (e.g., internalizing and externalizing problems; Mannion et al., 2014; Witwer & Lecavalier, 2008) and experience significant and pervasive support needs (Thompson et al., 2009) across various life domains, including health, education, and community involvement (Shogren et al., 2017). Further, people with IDD have experienced considerable marginalization from the mental health sector (Whittle et al., 2018) and from society more broadly (Emerson, 2007; World Health Organization, 2011) prior to the pandemic. Adults with IDD have been disproportionately affected by the COVID-19 pandemic in Canada, with higher rates of COVID-19 positivity, mortality, and morbidity compared to the general population (Lunsky et al., 2021). COVID-19-related stressors for individuals with disabilities, including those with IDD, include job loss, living in congregate settings, financial issues, social isolation, and disruptions to daily care (Abilities Centre & The Canadian Disability Participation Project, 2020; Embregts et al., 2020; Lund et al., 2020). These stressors may place individuals with IDD under additional stress and at a greater risk for poor mental health outcomes. It is no wonder that there is evidence for increased mental health problems among individuals with IDD during this time (Amor et al., 2021; Drum et al., 2020; Rosencrans et al., 2021).

The Centres for Disease Control and Prevention (CDC; 2021) suggests that the contributors to positive youth development (PYD) are important factors for coping with COVID-19-related stressors. PYD can be operationalized by the “Six Cs”: *Competence* (i.e., a sense of positive self-worth and self-efficacy), *Caring* (i.e., a sense of sympathy or empathy), *Confidence*

(i.e., a positive view of one's actions), *Connection* (i.e., positive bonds with people and institutions that are bidirectional), *Character* (i.e., respect for societal and cultural rules), and *Contribution* (i.e., helping oneself, family, community, and society), which together represent *thriving* (Lerner et al., 2005). PYD has emerged as a positively oriented framework through which to study thriving among youth (Lerner et al., 2005), and can be a useful framework with which to examine positive outcomes in youth and adults with IDD (Weiss & Burnham Riosa, 2015), given that thriving is developmental in nature and important across the lifespan. Benson and Scales (2009) define thriving as:

An individual's pursuing a life path on which individual or functionally-valued behaviors grow (e.g., character, confidence, caring) and move the person toward attainment of an 'idealized personhood' characterized by socially or structurally-valued behaviors such as contribution to self, family, community, and civil society (Lerner et al., 2006). (p. 90)

Studies have demonstrated that for at-risk youth and adults, characteristics related to thriving can buffer against negative outcomes and promote resilience (Forrest-Bank et al., 2015; Keyes et al., 2010; Travers et al., 2019). The cultivation of the Six Cs may therefore act as a protective factor for people with IDD during this time. However, research on thriving for youth with IDD is in its infancy, with the majority of research in the area of well-being for this population focusing solely on remediating deficits rather than also understanding the factors that promote positive outcomes and thriving (Albaum et al., 2021; Dykens, 2006).

Among youth and adults without IDD, thriving has been linked to the experience of fewer mental health problems. For instance, aspects of thriving have been inversely related to risk/problem behaviours (e.g., substance use) during childhood and adolescence (Arbeit et al., 2014; Geldhof et al., 2014; Jeličić et al., 2007; Lerner et al., 2005a) and with fewer internalizing

or externalizing problems (Geldhof et al., 2014; Holsen et al., 2017; Theokas & Lerner, 2006). Among adults without IDD, higher levels of constructs related to the Six Cs (e.g., self-acceptance, environmental mastery, positive relations with others) decrease the odds of mental health problems (Keyes et al., 2010). However, the link between positive development, thriving, and negative outcomes may be more complex. Phelps and colleagues (2007) found that positive development and maladaptive behaviours can follow different trajectories over time, with some youth who demonstrated maladaptive behaviours earlier in life showing increases in the Six Cs of PYD three years later. This suggests that there may be strengths and the potential for positive change even among those who show trajectories of maladaptive behaviours, which may be particularly meaningful for youth and adults with IDD who often experience these challenges.

Characteristics of thriving related to the Six Cs have also been linked to a lower degree of mental health problems in people with IDD. Previous research has suggested a negative association between competence, in terms of social and adaptive skills, and mental health problems for youth and adults with IDD (Hassiotis & Turk, 2012; Matson et al., 2006; Ratcliffe et al., 2015). Other studies have demonstrated that one's self-esteem and self-concept (Benson & Ivins, 1992; McGillivray & McCabe, 2007), as well as the presence of positive relationships are associated with lower levels of mental health problems in this population (Lunsky & Benson, 2001; McGillivray & McCabe, 2007; Reiss & Benson, 1985; Scott & Haverkamp, 2014). Researchers also suggest that when people with IDD contribute to themselves (e.g., being physically active; Borland et al., 2021; Carmeli et al., 2009) and their community (e.g., work or volunteerism; Lysaght et al., 2009), this can improve their mental health. Finally, there is emerging evidence that positive character strengths, such as empathy, justice, and honesty, are linked to greater psychological well-being and quality of life for people with IDD (Biggs &

Carter, 2016; Niemiec et al., 2017). No one, however, has considered how these characteristics, combined to reflect the broader experience of thriving, may be associated to fewer negative outcomes, especially within the context of such stressors like the pandemic.

The PYD framework posits that when there is an alignment between one's *individual strengths* (e.g., adaptive behaviours) and *ecological resources* (e.g., environmental supports), people are more likely to experience positive outcomes, such as thriving, and resilience to the stressors that lead to mental health problems (Lerner et al., 2005; Travers et al., 2019). For example, in youth without IDD, a person's individual strength of self-determination (ability to identify goals, recruit resources to attain a goal, and modify behaviours to achieve a goal) has been related to indicators of thriving and fewer maladaptive behaviours (Gestsdóttir & Lerner, 2007; Zimmerman et al., 2008). Among youth and young adults with IDD, adaptive behaviours, such as social and communication skills, have been related to thriving (Weiss & Burnham Riosa, 2015).

These individual strengths do not occur in isolation to contribute to thriving though, as ecological resources are also integral to thriving and the experience of fewer mental health problems. Theokas and Lerner (2006) proposed that there are four dimensions into which ecological resources can be categorized that are applicable to all settings: *Human Resources* (i.e., strengths, talents, and abilities of people in one's environment), *Physical and Institutional Resources* (i.e., opportunities for learning, recreation, and engagement with others and the environment), *Collective Activity* (i.e., mutual engagement between community members, parents, youth, school personnel, and institutions), and *Accessibility* (i.e., ability of people to have access to human resources and resource opportunities). These four categories were created to represent broad areas of potential connectivity between people and resources for positive

development in their environment across multiple settings including their family/home, school, and community. Among youth without IDD, Theokas and Lerner further found that accessibility in school, school physical resources (e.g., gym, tutors, extended day programs), family physical resources (e.g., household income), and community human resources (e.g., positive caring adults), are positively related to indicators of thriving. Moreover, greater family and school physical resources were associated with lower levels of depression. Outside of the school context, research on youth without IDD has also linked level of involvement in extra-curricular activities to their positive development and thriving (Agans et al., 2014; Zarrett & Lerner, 2008), as well as better mental health (Oberle et al., 2019). Similarly, activity participation in the community has been associated with positive outcomes in adulthood (Darcy & Dowse, 2013; Denault & Poulin, 2017). In one study linking thriving to ecological resources in youth and young adults with IDD, Weiss and Burnham Riosa (2015) found that involvement in home, school, and community domains predicted thriving, and that these external factors partially explained why those with intellectual disabilities and autism were reported to thrive less than those with only intellectual disabilities.

Community involvement has been associated with enhancing the quality of life of youth and adults with IDD (Schalock et al., 2005). One aspect of community involvement consists of physical inclusion, which refers to a person's access to opportunities and resources to participate in community activities (Abbott & McConkey, 2006). The other aspect of community involvement is social inclusion, which refers to relationships and belonging so that individuals with IDD can experience meaningful involvement in their community (Bogenschutz et al., 2015). Researchers have found that these types of community involvement can reduce mental

health problems and promote positive outcomes, such as increases in self-worth and social competence, in people with IDD (Darcy & Dowse, 2013; Merrells et al., 2018; Tint et al., 2017).

Unfortunately, people with IDD are less involved in their communities compared to those without IDD and other groups of people with disabilities (Verdonschot et al., 2009). They are also more likely to experience social isolation and loneliness (Fulford & Cobingo, 2018; Petrina et al., 2014; Petrina et al., 2017). Youth and adults with IDD often require access to environmental supports and resources to enable meaningful involvement and inclusion in activities (Darcy & Dowse, 2013; Lim et al., 2016). However, people with IDD experience negative attitudes of others towards them and a lack of access to community resources, such as accessible and affordable transportation, insufficient availability of appropriate activities, and a lack of advocacy in their community to support their needs (Abbott & McConkey, 2006; Ainsworth & Baker, 2004; Keogh et al., 2004). Focusing on the community context is an important step to gathering a better understanding of what ecological resources can help to reduce mental health problems and improve well-being among people with IDD. To date, no study has used a PYD approach to examine how resources and supports in the community may be related to thriving and mental health among people with IDD, and none have considered thriving as a resilience factor in the face of COVID-19 stressors.

Current Study

People with IDD have been largely left out of the conversation on PYD in general. It is critical for policy and decision makers, who need to have this understanding if they are to enact changes and bolster ecological resources to create a community that is more inclusive and truly positive for all. Guided by a PYD framework, the current study aims to understand the roles that thriving might play for youth and young adults with IDD. More specifically, this thesis explores

the links between COVID-19 stressors, community resources, thriving, and mental health problems. Because no IDD-specific framework of thriving exists, we chose the PYD model because of its developmentally appropriate nature. We focused on youth and adults between 12 and 35 years of age, as thriving is developmental in nature and important across the lifespan. As shown in Figure A1, I hypothesize that greater access to resources and supports in the community will be associated with lower levels of mental health problems, and that this will be mediated by thriving. I also test the hypothesis that COVID-19 stressors will be positively associated to mental health problems, but that this association will be moderated by the degree of thriving (Figure A2).

In order to examine the mediating and moderating effects of thriving on the mental health of youth and adults with IDD, it is important that people with IDD in the sample reflect a range of possible thriving experiences (from low to high levels). Given that participation in the community and extra-curricular activities have been related to thriving in the general population (e.g., Zarrett & Lerner, 2008), people with IDD were recruited for the current study through Special Olympics Canada (SOC), the largest community sport organization for people with IDD, with a mission to promote well-being and community involvement through sport, which notes approximately 50,000 participants across Canada (Special Olympics, n.d.). Past work examining thriving among youth and young adults with IDD who were involved in Special Olympics demonstrated that there is variability in thriving in this population, with mean thriving scores ranging from 1.20 to 5 out of a possible range of 1 to 5 ($M = 3.70$, Median = 3.80, $SD = .80$; Weiss & Burnham Riosa, 2015). Further, the vast majority of participants are involved only in local community levels of sport, not elite levels, reflecting standard recreational activities that are found across the country.

Method

Participants

The current study employed an online caregiver report survey of youth and adults with IDD. Participants included 171 caregivers of people with IDD who were between 12 and 35 years of age ($M = 24.35$ years, Median = 24.00, $SD = 5.41$) across Canada. The majority of caregivers who responded to the survey were mothers (83%) and identified as White (87%). All youth and adults had a clinical diagnosis of intellectual disability or a diagnosis associated with intellectual disability (e.g., Down syndrome) by a registered health professional, verified through caregiver-report. This approach to verifying IDD has been used by other studies (e.g., Weiss & Burnham Riosa, 2015). Caregivers also reported whether the person with IDD had additional clinical diagnoses (see Table 1 for details). Additional demographic information is outlined in Table 1.

Table 1

Participant Demographics (N = 171)

	<i>M(SD) or n(%)</i>	Range
Age	24.35(5.41)	12 - 35
Gender		
Male	108(63)	-
Female	61(36)	-
Non-Binary/Third Gender	2(1)	-
Highest Level of Competition^a		
Local	40(26)	-
Regional	32(21)	-
Provincial	47(30)	-
National	27(17)	-
Worlds/International	9(6)	-
Current Living Situation		
Parent(s)	143(84)	-
Grandparents or Siblings Without Parents	2(1)	-
Roommates or Partner/Spouse	2(1)	-
Alone	8(5)	-
Residential Care	8(5)	-
Other (e.g., foster home)	8(5)	-

	<i>M(SD) or n(%)</i>	Range
Additional Clinical Diagnoses		
Autism	64(39)	-
Down Syndrome	46(28)	-
Prader-Willi Syndrome	3(2)	-
Fragile X Syndrome	3(2)	-
Cerebral Palsy	8(5)	-
Fetal Alcohol Syndrome/Fetal Alcohol Spectrum Disorder	12(7)	-
Williams Syndrome	2(1)	-
Tourette Syndrome	2(1)	-
Noonan Syndrome	3(2)	-
Attention Deficit Hyperactivity Disorder	11(7)	-
Anxiety Disorder	8(5)	-
Epilepsy or Other Seizure Disorders	7(4)	-
Other (e.g., Rett Syndrome, Acquired Brain Injury, Depression)	26(16)	-
Geographic Location^b		
Alberta	15(9)	-
British Columbia	11(6)	-
Manitoba	3(2)	-
Newfoundland and Labrador	11(6)	-
Northwest Territories	3(2)	-
Nova Scotia	11(6)	-
Ontario	101(59)	-
Quebec	1(1)	-
Saskatchewan	10(6)	-
Yukon	4(2)	-
Caregiver's Highest Level of Education^c		
No certificate, diploma or degree	3(2)	-
High school certificate	28(17)	-
Apprenticeship, trades, or college diploma	60(35)	-
Bachelor or Associate's degree	58(34)	-
Master's degree or higher	21(12)	-
Family Income^d		
< \$49,999	26(16)	-
\$50,000 to \$99,999	52(32)	-
\$100,000 to \$199,999	53(33)	-
> \$200,000	11(7)	-
Prefer not to disclose	20(12)	-
Financial Management		
We are in deep financial trouble	3(2)	-
We have some financial difficulties	13(8)	-
We don't manage very well	4(2)	-
We get by alright	58(34)	-
We manage quite alright	52(30)	-
We manage very well	41(24)	-

^a16 cases missing; ^b1 case missing; ^c1 case missing; ^d9 cases missing

Measures

Community Resources

Access to resources and supports in the community was guided by Theokas' and Lerner's (2006) categories of community assets: (a) human resources (operationalized as the presence of positive caring people in the community), (b) presence of physical and institutional resources in the community, (c) collective activity (operationalized as positive communities), and (d) accessibility (operationalized as the accessibility of community activities).

- a) The **presence of positive caring people** in the community was assessed by having caregivers rate their level of agreement with four items ("In [Person's names]'s neighbourhood there are lots of people who care about them", "Adults in [Person's name]'s town or city make them feel important", "Adults in [Person's name]'s town or city listen to what they have to say", "[Person's name] has an adult (not including parents or teachers) in their life that they can look up to"; Institute for Applied Research in Youth Development, 2011) on a 5-point Likert scale from 0 ('Strongly Disagree') to 4 ('Strongly Agree'), as used by James and colleagues (2015). Mean scores ranged from 0 to 4 ($M = 2.64$, Median = 2.75, $SD = .83$), with higher scores reflecting a greater presence of positive caring people in the community. The scale demonstrated good internal consistency with the current sample (Cronbach's $\alpha = .83$).
- b) To assess the **presence of physical or institutional resources** in the community, caregivers indicated whether or not (0 = 'No', 1 = 'Yes') their neighbourhood/community had a local library, facilities (local youth centre, Boys & Girls Club/YMCA, community centre), recreation opportunities (city/town parks; Theokas & Lerner, 2006), and at least one organization focused on the healthy development and needs of people with IDD. Responses

across the five items were summed and ranged from 0 to 5 ($M = 3.98$, Median = 4.00, $SD = 1.17$).

- c) **Positive communities** represents the extent to which members of the community collectively agree to care for the well-being of people in the community, which is similar to the youth monitoring measure used to assess community collective activity in past studies of PYD (James et al., 2015). We adapted this measure to include five items regarding supporting people in the community (“People around here are willing to help neighbours”, “This is a close-knit neighbourhood”, “People in this neighbourhood can be trusted”, “People in this neighbourhood generally know each other”; Institute for Applied Research in Youth Development, 2011). To take into account the unique experiences of people with IDD, we added the following question: *Your neighbourhood/community does things as a community to support the needs and inclusion of people with intellectual disability*. Caregivers responded using a 5-point Likert scale from 0 (‘Strongly Disagree’) to 4 (‘Strongly Agree’). Mean positive communities scores were calculated and ranged from 0 to 4 ($M = 2.45$, Median = 2.60, $SD = .84$), with higher scores reflecting greater community positivity. The scale demonstrated high internal consistency with the current sample (Cronbach’s $\alpha = .89$).
- d) The My Family’s Accessibility and Community Engagement (MyFACE; Bourke-Taylor et al., 2021) tool was used to assess the **accessibility of activities** to people in the community. The MyFACE is an 9-item measure where caregivers rate their family’s level of inclusion and involvement in activities in the community (e.g. using local parks, beaches, or other open spaces, being invited to and attending other people’s homes) by selecting the appropriate face along with a 5-point Likert scale (0 = ‘not interested/not applicable to us’, 1 = ‘excluded, maximal changes and/or support required’, 2 = ‘somewhat included and involved, many

changes and/or support required', 3 = 'moderately included and involved, minor changes and/or support required', 4 = 'included and involved, no changes and/or support required'). A mean score was calculated across the nine items, with higher scores indicating caregivers' perceptions that the community is increasingly accessible and that their family is increasingly involved. Mean scores for the current sample ranged from 0 to 4 ($M = 2.90$, Median = 3.00, $SD = .72$). This measure has demonstrated good internal consistency with a sample of caregivers of youth with a disability (Cronbach's $\alpha = .80$; Bourke-Taylor et al., 2021). Similarly, this scale demonstrated good internal consistency with the current sample (Cronbach's $\alpha = .77$).

Scores from all four categories were standardized and a mean z-score was calculated to create a community resource composite score. Pearson correlations revealed that the overall community resource score was strongly correlated with positive caring people ($r(170) = .80, p < .001$), physical and institutional resources ($r(171) = .65, p < .001$), positive communities ($r(171) = .79, p < .001$), and community accessibility ($r(169) = .68, p < .001$). The internal consistency for the overall community resource score was acceptable (Cronbach's $\alpha = .71$).

COVID-19 Stressors

The impact of the COVID-19 pandemic on the youth or adult with IDD was assessed using a lab developed intellectual disability version of the Epidemic – Pandemic Impact Inventory Adolescent Adaptation (EPII-A; Morris et al., 2020). The EPII-A is a 114-item measure used to assess the impact of the COVID-19 pandemic across domains relevant for adolescents and young adults, using self-report. We adapted the EPII-A to create a brief version, similar to the EPII-Brief Form (which is a 32-item adult self-report measure; Grasso et al., 2020), by combining and removing items and adding in items from the EPII-Brief Form so that the

measure included domains relevant for youth and adults with IDD. We also changed the scale on the EPII-A from a yes/no format to the 5-point Likert scale used in the EPII-Brief Form. The original instructions were adapted slightly to allow for caregiver report: “Since the COVID-19 pandemic began, what has changed for [Person’s name]?”. The final 24-item tool spans nine domains of COVID-19 stressors: (1) work and employment (e.g., Negative work changes [e.g., laid off, lost hours]), (2) education and training (e.g., Unable to go to school or day program), (3) home life (e.g., More conflict with family members), (4) social activities (e.g., Did not talk to or see family or friends while separated), (5) economic (e.g., Had trouble getting places due to less access to public transportation or concerns about safety), (6) emotional health and well-being (e.g., Problems with access or getting mental health treatment or therapy), (7) physical health problems (e.g., Increased health problems not related to COVID-19), (8) physical distancing and quarantine (e.g., Isolated or quarantined due to possible exposure to COVID-19, symptoms, or increased risk), and (9) infection history (e.g., Tested positive for COVID-19 and had severe symptoms). For each item, caregivers reported whether the pandemic had impacted the person with IDD in the way described by choosing: 0 = ‘Not Applicable/Did not happen’, 1 = ‘Happened but no impact on [Person’s name]’, 2 = ‘Some impact on [Person’s name]’, 3 = ‘A lot of impact on [Person’s name]’, 4 = ‘Extreme impact on [Person’s name]’. To obtain an overall COVID-19 impact score, a mean score was calculated across the 24 items, with higher scores indicating a greater impact of COVID-19 stressors on the youth or adult with IDD. The measure demonstrated good internal consistency with the present sample (Cronbach’s $\alpha = .86$), with scores ranging from .13 to 3.13 ($M = 1.10$, Median = 1.04, $SD = .61$). The current sample experienced the most impact in the domains of social activities ($M = 1.60$, Median = 1.33, $SD = .91$), physical distancing and quarantine ($M = 1.53$, Median = 1.50, $SD = 1.21$), physical health

problems ($M = 1.51$, Median = 1.33, $SD = .96$), and education and training ($M = 1.35$, Median = 1.25, $SD = 1.17$), less impact in the domains of emotional health and well-being ($M = 1.14$, Median = 1.00, $SD = 1.01$) and work and employment ($M = .98$, Median = 1.00, $SD = .98$), and far less impact in the domains of home life ($M = .64$, Median = 0.00, $SD = .83$), economic ($M = .56$, Median = 0.00, $SD = .87$), and infection history ($M = .27$, Median = 0.00, $SD = .61$).

Thriving

Thriving was measured using the Six Cs of PYD derived from Lerner and colleagues (2005). Caregivers reported their level of agreement with the six global statements (Table 2) about the youth's or adult's competence, confidence, character, connection, caring, and contribution using a 5-point scale from 1 ('Strongly Disagree') to 5 ('Strongly Agree'). A mean score for thriving was calculated, with higher scores representing higher levels of the Cs and thus, higher levels of thriving. These items have been used to assess thriving in youth and young adults with IDD and has demonstrated good internal consistency (Cronbach's $\alpha = .85$; Weiss & Burnham Riosa, 2015). This measure also exhibited good internal consistency in the present study (Cronbach's $\alpha = .87$), and scores ranged from 1.5 to 5 ($M = 3.95$, Median = 4.00, $SD = .73$).

Table 2

Item Descriptions for Each Component of Thriving (Six Cs), Mean, and Percent Agreement

Six Cs	Items	<i>M</i> (Percent Agreement)
Competence	[Person's name] has the skills to succeed in school, in social situations with friends and adults, in play, and at home. [Person's name] knows how to behave and does what is needed to do well.	3.64(64%)
Confidence	[Person's name] believes that they can succeed and do what is needed to do well in the family, in school, in social situations with friends and adults, in play and in other areas that are important to them (for example, sports, music, religious activities).	3.79(72%)

Six Cs	Items	<i>M</i> (Percent Agreement)
Connection	[Person's name] has positive relationships with their parents, siblings, and other family members, and with friends, teachers, coaches, or mentors.	4.34(89%)
Character	[Person's name] knows what is "right and wrong" and "does the right thing". [Person's name] is open to others' perspectives and believes in social justice for all. [Person's name] is honest.	3.89(71%)
Caring	[Person's name] cares about other people. They are concerned about whether others have what they need (shows sympathy) and shows a sense of compassion (empathy). [Person's name] is both sympathetic and empathetic to others.	4.18(85%)
Contribution	[Person's name] tries to do things to help the family, to help neighbours, and to help the community. [Person's name] tries to also help themselves by staying healthy (eating right, exercising, getting enough sleep).	3.85(72%)

Mental Health Problems

Since the current sample consists of youth and adults, the youth and adult versions of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) were used to measure severity of mental health problems. The SDQ is a 25-item scale divided into five subscales each with five items. For the purposes of this study, only three of the subscales were used: Hyperactivity (e.g., Constantly fidgeting or squirming), Emotional Symptoms (e.g., Many worries, often seems worried), and Conduct Problems (e.g., Often lies or cheats), to focus more specifically on mental health symptoms and removing the Peer Problems and Prosocial Behaviour subscales. The only difference in the youth and adult versions of the SDQ are some slight variations in the wording used within items (e.g., "Restless, overactive, cannot stay still for long" vs. "Restless, overactive, finds it hard to sit down for long", respectively). Caregivers rated how true each statement is for the youth or adult on a 3-point scale from 0 ('Not True') to 2 ('Certainly True'). In both versions, all items are summed to get a total score, with higher scores reflecting greater severity of mental health problems. Total scores on the youth and adult version of the SDQ were combined to

create one mental health problems variable, with scores ranging from 0 to 29 ($M = 9.90$, Median = 9.00, $SD = 5.56$). This measure has also been used with caregivers of autistic youth and adults and has demonstrated good internal consistency with a mean Cronbach alpha of .76 (Findon et al., 2016). The internal consistencies for both versions of the SDQ with the current sample were good (Youth SDQ Cronbach's $\alpha = .86$; Adult SDQ Cronbach's $\alpha = .83$).

Individual Strengths

Adaptive Behaviour. Adaptive behaviour was measured using The Waisman Activities of Daily Living Scale (W-ADL; Maenner et al., 2013), which was developed and validated for use with caregivers of youth and adults with IDD. The W-ADL is a 17-item scale that is used to measure an individual's independence in doing a variety of activities, such as doing household tasks, grooming, and drinking from a cup. Caregivers rated the youth's or adult's ability on a 3-point Likert scale (0 = 'Does not do that at all', 1 = 'Does with help', 2 = 'Independent or does on own'). Total scores were calculated across the 17 items and ranged from 0 to 34 ($M = 23.22$, Median = 24.00, $SD = 6.21$), with higher scores indicating greater adaptive behaviour. This scale has demonstrated excellent internal consistency with IDD samples in the past (Cronbach's $\alpha = .91$; Weiss & Burnham Riosa, 2015). Similarly, the internal consistency of this measure was high in the present study (Cronbach's $\alpha = .90$).

Communicative Ability. Communicative ability was measured using a 3-item scale where caregivers reported on how well the person with IDD is able to understand spoken language or alternative communication, use spoken language or alternative communication, and carry on a conversation (based on a one-item scale by Mazurek et al., 2012; Sterzing et al., 2012). Caregivers indicated their responses on a 4-point Likert scale (0 = 'Cannot do this at all', 1 = 'Has a lot of trouble', 2 = 'Has little trouble', 3 = 'Has no trouble'). This scale has been used

with caregivers of individuals with IDD and demonstrates good internal consistency (Cronbach's $\alpha = .83$; Weiss & Burnham Riosa, 2015). This scale also demonstrated good internal consistency with the current sample (Cronbach's $\alpha = .86$), and mean scores ranged from .33 to 3 ($M = 2.38$, Median = 2.67, $SD = .69$).

Financial Resources

Financial resources were measured using one item where caregivers indicated how their family is managing financially these days by choosing one of six phrases (1= 'We are in deep financial trouble', 2 = 'We have some financial difficulties', 3 = 'We don't manage very well', 4 = 'We get by alright', 5 = 'We manage quite alright', 6 = 'We manage very well'; National Centre for Social Research, 2003). Responses ranged from 1 to 6 ($M = 4.56$, Median = 5.00, $SD = 1.20$; see Table 1 for the distribution).

Control Variables

Of the demographic variables, the age and gender (female vs. male; Table 1) of the person with IDD were considered as potential covariates. Age and gender were reported by caregivers in a general demographic questionnaire. Additionally, financial resources were considered as a potential covariate to control for physical resources within the home environment (Theokas & Lerner, 2006). The individual strengths (i.e., adaptive behaviour and communicative ability) of the person with IDD were also considered as potential covariates, given the reported associations in PYD literature between thriving and individual strengths among youth (Lerner et al., 2005).

Procedure

Data collection occurred from October 2021 to March 2022 as part of a larger study about the experience of SOC athletes during the COVID-19 pandemic. Caregivers of athletes

between 12 and 35 years of age were included in the current study's sample. Approximately half of the caregivers ($n = 88$) were recruited through SOC email lists and social media advertisements. The rest of the sample ($n = 83$) consisted of caregivers of athletes with IDD who had participated in past research conducted by Dr. Weiss who had consented to being contacted for future studies. All caregivers were invited to complete a survey on Qualtrics via a secure link and informed consent was obtained from all participants. Caregivers completed demographic questionnaires about themselves and the person with IDD, the impact of the COVID-19 pandemic for the person with IDD, as well as measures regarding the person with IDD's individual strengths, access to resources, mental health problems, and aspects of thriving. The online survey took caregivers approximately 30 minutes to complete. Caregivers who were recruited from participating in past research received a \$15 Amazon e-gift certificate for participating in the current study. The caregivers who were newly recruited for the current study had the option to enter a raffle to have a chance at winning one of ten \$50 Amazon e-gift certificates. All questionnaires, with the exception of the COVID-19 stressor questionnaire and some of the community resource measures, have been used successfully with this population (Findon et al., 2016; Maenner et al., 2013; Weiss & Burnham Riosa, 2015) and suit the age range of the current sample. Participants' names were removed from any data collected and a study identification number was assigned to any measures they completed. Ethical approval for this study was obtained from York University prior to data collection.

Data Analysis

Statistical analyses were performed using IBM SPSS Version 28. Prior to evaluating the hypotheses, the distribution of scores and internal consistency of continuous measures were assessed. Statistical assumptions of normality, linearity, and homoscedasticity were inspected,

and no major violations were noted. Each variable was also inspected for outliers, resulting in one data point being removed.

Pearson correlations were run between age, gender (point biserial, female vs. male), financial resources, individual strengths (i.e., adaptive behaviour and communicative ability), the overall community resource score, each domain of community resources (i.e., positive caring people, physical and institutional resources, positive communities, and community accessibility), COVID-19 stressors, thriving, and mental health problems. There was no evidence of collinearity when examining standard regression collinearity (variance inflation factor estimates) and multicollinearity diagnostics (Condition Index/Variance Portions). The PROCESS macro (Hayes, 2012) was used to test the first hypothesis that thriving would mediate the association between one's access to resources and supports in their community and their mental health problems, while controlling for age, financial resources, and individual strengths. In this analysis, PROCESS Model 4 was used. Bootstrapping was used to obtain a confidence interval for the indirect effect. If the lower and upper limit of the confidence interval did not contain zero, the mediation was considered significant (Preacher & Hayes, 2008). The PROCESS macro (Hayes, 2012) was also used to explore the second hypothesis that thriving moderates the association between COVID-19 stressors and mental health problems, while controlling for age, financial resources, and individual strengths. In this analysis, PROCESS Model 1 was used. An alpha of .05 was used for all analyses and 95% confidence intervals were used for the regression analyses. Gender was not entered as a control variable in these analyses because it was not correlated with any of the predictor variables or the dependent variable (see Table 3).

Results

Pearson Correlations

Pearson correlations between the overall community resource score, each domain of community resources, and thriving were first examined. As shown in Table 3, thriving was significantly correlated with overall community resources. When examining each domain of community resources, thriving was significantly associated with positive caring people and positive communities. The association between thriving and community accessibility was approaching significance ($p = .055$), however, thriving was not significantly associated with the physical and institutional resource domain.

Pearson correlations between the potential covariates (i.e., age, gender, financial resources, adaptive behaviour, and communicative ability), predictor variables (i.e., overall community resources, COVID-19 stressors, and thriving), and the dependent variable (i.e., mental health problems) were then examined (Table 3). Mental health problems were significantly associated with age, adaptive behaviour, financial resources, thriving, COVID-19 stressors, and overall community resources. Gender and communicative ability were not significantly related to mental health problems.

Some of the predictor variables and covariates were significantly related to each other as well (Table 3). Thriving was significantly associated with age, adaptive behaviour, communicative ability, and COVID-19 stressors, with correlations ranging from small to moderate in size. Adaptive behaviour was moderately associated with communicative ability and weakly associated with COVID-19 stressors. Age was moderately correlated with adaptive behaviour and COVID-19 stressors and weakly correlated with communicative ability. There was a small correlation between communicative ability and overall community resources. Additionally, financial resources were weakly correlated with COVID-19 stressors. Gender was not significantly correlated with any of the variables.

Table 3

Correlations Among Covariates, Community Resource Domains, Predictor Variables, and the Dependent Variable

	Covariates			Community Resource Domains					Predictor Variables			Dependent Variable
	2 (n = 169)	3 (n = 167)	4 (n = 171)	5 (n = 171)	6 (n = 170)	7 (n = 171)	8 (n = 171)	9 (n = 169)	10 (n = 171)	11 (n = 171)	12 (n = 169)	13 (n = 171)
1. Age	-.13	.37***	.22**	.08	.09	-.003	.02	-.05	.02	-.40***	.20**	-.18*
2. Gender ^a	-	-.01	.009	-.05	-.02	-.03	.002	.009	-.01	-.03	-.02	.001
3. Adaptive Behaviour	-	-	.45***	.08	.15	-.002	.12	.04	.10	-.18*	.44***	-.18*
4. Communicative Ability	-	-	-	.05	.25***	.01	.10	.16*	.18*	-.05	.47***	-.07
5. Financial Resources	-	-	-	-	-.05	.23**	.02	.13	.11	-.24**	.03	-.20**
6. Positive Caring People	-	-	-	-	-	.26**	.73***	.32***	.80***	-.12	.47***	-.35***
7. Physical and Institutional Resources	-	-	-	-	-	-	.28***	.38***	.65***	-.06	.05	-.16*
8. Positive Communities	-	-	-	-	-	-	-	.30***	.79***	-.08	.34***	-.26**
9. Community Accessibility	-	-	-	-	-	-	-	-	.68***	.04	.15	-.10
10. Overall Community Resources	-	-	-	-	-	-	-	-	-	-.08	.35***	-.30***
11. COVID-19 Stressors	-	-	-	-	-	-	-	-	-	-	-.22**	.48***
12. Thriving	-	-	-	-	-	-	-	-	-	-	-	-.48***
13. Mental Health Problems	-	-	-	-	-	-	-	-	-	-	-	-

^a Point biserial correlations, Female = 1 and Male = 2

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

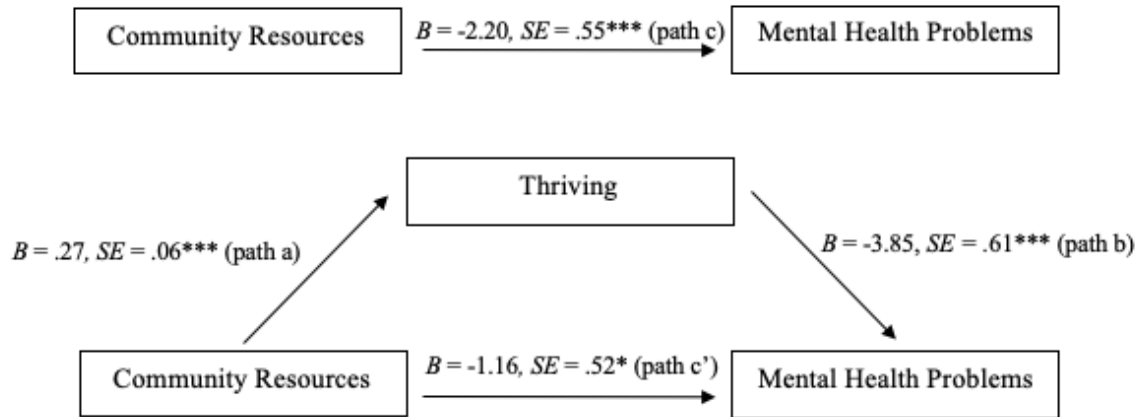
Mediation Analysis

To explore hypothesis 1, a mediation analysis (Hayes Process model 4) was conducted to determine whether thriving mediates the association between overall community resources and mental health problems while controlling for age, financial resources, and individual strengths (i.e., adaptive behaviour and communicative ability).

The overall model of community resources, control variables, and thriving (potential mediator) accounted for 33% of the variance in mental health problems $F(6,160) = 13.17, p < .001$. As seen in Figure 1, prior to entering thriving, the total direct effect (path c) of community resources on mental health problems was significant, $t = -3.98, p < .001$, $CI = -3.29$ to -1.11 . Community resources were also related to thriving (path a), $t = 4.19, p < .001$, $CI = .14$ to $.40$, and thriving emerged as a significant predictor of mental health problems (path b), $t = -6.32, p < .001$, $CI = -5.06$ to -2.65 . The indirect effect of thriving in the association between community resources and mental health problems was significant (*indirect effect* = -1.04 , $SE = .31$, $CI = -1.70$ to $-.49$), such that having access to more community resources was related to higher levels of thriving (path a), which in turn was related to lower levels of mental health problems (path b). The direct relation between community resources and mental health problems remained significant (path c'), $t = -2.23, p < .05$, $CI = -2.19$ to $-.13$, suggesting that thriving partially mediated this association.

Figure 1

Thriving as a Mediator of Community Resources and Mental Health Problems (n = 167)



* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Moderation Analysis

To explore hypothesis 2, a moderation analysis (Hayes Process model 1) was conducted to determine if thriving moderates the association between COVID-19 stressors and mental health problems in this sample, while controlling for age, financial resources, and individual strengths (i.e., adaptive behaviour and communicative ability).

The overall model of COVID-19 stressors, control variables, and thriving (potential moderator) accounted for 41% of the variance in mental health problems $F(7,159) = 15.81, p < .001$. As seen in Table 4 and as noted in the above mediation model, thriving was a significant predictor of mental health problems, $t = -6.68, p < .001$, $CI = -4.81$ to -2.62 , indicating that for every one-point increase in thriving there was a corresponding 3.71-fold decrease in mental health problems. COVID-19 stressors were also a significant predictor of mental health problems, $t = 4.72, p < .001$, $CI = 1.86$ to 4.55 , with every one-point increase in COVID-19 stressors corresponding with a 3.21-fold increase in mental health problems. However, the

interaction term for COVID-19 stressors and thriving was not significant, indicating that there was no moderation effect.

Table 4

Thriving as a Moderator of COVID-19 Stressors and Mental Health Problems (n = 167)

Variable	<i>B</i>	<i>SE</i>	<i>p</i>	95% Confidence Interval
Constant	7.68	2.46	.002	[2.83, 12.53]
COVID-19 Stressors	3.21	.68	<.001	[1.86, 4.55]
Thriving	-3.71	.56	<.001	[-4.81, -2.62]
COVID-19 Stressors x Thriving	-.81	.71	.26	[-2.22, .60]
Age	.04	.07	.60	[-.11, .18]
Adaptive Behaviour	.01	.07	.94	[-.13, .14]
Communicative Ability	1.42	.59	.02	[.25, 2.58]
Financial Resources	-.53	.29	.07	[-1.10, .04]

Discussion

To our knowledge, the current study is the first to examine how thriving for youth and young adults with IDD may mediate an association between high community resources and low levels of mental health problems, or whether it can act as a protective factor for mental health problems in the face of COVID-19 stressors. Among youth and adults with IDD, thriving was a significant predictor of mental health problems and a partial mediator in the association between community resources and mental health problems, supporting our first hypothesis. Though cross-sectional, it is possible that the more youth and adults with IDD are exposed to resources and support in their community, the more likely they are to thrive, which may in turn lower their risk of mental health problems. This is consistent with other researchers who found that greater access to community resources and involvement were associated with greater levels of

characteristics of thriving (Agans et al., 2014; Theokas & Lerner, 2006; Zarrett & Lerner, 2008), and that aspects of thriving were associated with lower levels of mental health problems and risk/problem behaviours among youth and adults without IDD (Geldhof et al., 2014; Holsen et al., 2017; Jeličić et al., 2007; Keyes et al., 2010; Theokas & Lerner, 2006). Our findings also suggest that community resources are not only indirectly linked to mental health problems through thriving, but also have a direct link. This finding is similar to studies that have demonstrated that when those in the general population have access to community resources, such as positive people (e.g., adult mentors) and positive communities (e.g., community members collectively looking out for youth), they experience fewer mental health problems (e.g., anxiety and depression; DeWit et al., 2016; DuBois & Silverthorn, 2005; Hurd & Zimmerman, 2010) and engage in fewer risky behaviours (e.g., substance use; Boyd-Ball et al., 2014; Hurd & Zimmerman, 2010).

It is interesting to explore the specific components of community resources that can be linked with thriving. In this sample, positive caring people and positive communities were correlated with thriving. This is in part consistent with previous research that has demonstrated that similar ecological assets, including adult mentors (DuBois & Silverthorn, 2005; Grossman & Rhodes, 2002; Zimmerman et al., 2002) and community connection (Theokas et al., 2005), were associated with thriving among youth without IDD. Similarly, for youth and adults with IDD, connections with positive people have been associated with positive outcomes, including a greater sense of belonging, and improvements in confidence and independence (Ames et al., 2016; Fisher et al., 2020; Hochman et al., 2015; Holt et al., 2017). Our findings also demonstrated that the correlation between community accessibility and thriving was approaching significance, highlighting the importance of investing in policies and programs that focus on

making community activities more accessible for youth and adults with IDD so that they can have a greater opportunity to benefit and experience positive outcomes from their involvement in these activities (Darcy & Dowse, 2013; Schalock et al., 2005; Weiss & Burnham Riosa, 2015; Zarrett & Lerner, 2008). Although community physical and institutional resources have been conceptualized as a way to create experiences that foster and support positive development (Leventhal & Brooks-Gunn, 2000), in the current study we found that physical and institutional resources were not associated with thriving, which was also consistent with Theokas and Lerner (2006). In the current sample there was limited variability in the presence of physical and institutional resources – most caregivers indicated that most of the resources listed were present – thus, there may be a more meaningful way of assessing this construct. For instance, rather than examining the presence or absence of these resources, it may be more meaningful for future studies to operationalize physical and institutional resources in terms of how engaged people with IDD are with these resources (Theokas & Lerner, 2006).

Although the current study did not focus on individual characteristics, the individual characteristics that were considered as potential covariates yielded interesting findings. The individual strengths of adaptive behaviour and communicative ability were moderately correlated with thriving. This is consistent with previous research investigating thriving among youth and young adults with IDD, demonstrating that aspects of adaptive behaviour, such as social and communicative ability, were associated with thriving (Weiss & Burhman Riosa, 2015). These results also lend support to the PYD framework (Lerner et al., 2005), which suggests that both individual strengths and ecological resources are important for positive development, and ultimately, thriving. In line with the PYD perspective, it is possible that bolstering the individual strengths (e.g., adaptive behaviour, communicative ability) of people with IDD and aligning

them with their ecological assets (e.g., community resources), may boost thriving outcomes. In the present study, the age of the person with IDD was weakly correlated with thriving, which was expected given that thriving is a developmental process in which the Six Cs of PYD are developed over time (Lerner et al., 2005).

Thriving as a Protective Factor in the Face of COVID-19 Stressors

Thriving did not moderate the association between COVID-19 stressors and mental health problems. This was surprising based on information put out by the CDC (2021) on how to cope with COVID-19 stressors, as well as other research suggesting that aspects of thriving can act as a protective factor to foster resilience for at-risk youth and adults without IDD (Forrest-Bank et al., 2015; Keyes et al., 2010; Travers et al., 2019). However, as expected based on the literature, COVID-19 stressors (Amor et al., 2021; Drum et al., 2020; Rosencrans et al., 2021) and thriving (Geldhof et al., 2014; Holsen et al., 2017; Keyes et al., 2010) uniquely predicted mental health problems. Our findings suggest that independent of one's level of thriving, a greater impact of COVID-19 stressors was associated with a greater degree of mental health problems. Some of the stressors reported by caregivers for the person with IDD included negative work changes, being unable to attend school or day programs, decreased access to respite and medical care, increased isolation from family and friends, and being less physically active. Similar stressors have been reported in studies that explored the first-person perspectives and experiences of people with IDD during the pandemic (Embregts et al., 2020; Lake et al., 2021). While COVID-19 response plans may have been effective in controlling the spread of COVID-19, research has demonstrated that the measures put in place (e.g., self-isolation) have disproportionately impacted vulnerable populations (Ahmed et al., 2020; Choi et al., 2020; Chung et al., 2020). Given the existing vulnerability of people with IDD (Cooper et al., 2007; Mannion et al., 2014;

Lunsky et al., 2013; Witwer & Lecavalier, 2008), it is likely that the experience of these stressors further exacerbated their risk for poor mental health outcomes. To reduce the burden of pandemics among vulnerable people and improve outcomes, policymakers must consider not only medical factors with regards to health, but also social factors (Butler-Jones & Wong, 2016; Federico et al., 2020; Lake et al., 2021), such as employment, education, and increased access to care.

Thriving was associated with a lower degree of mental health problems independent of the experience of COVID-19 stressors, suggesting that it may be an important target for mental health supports. This can be done through involvement in community-based programs (e.g., mentoring programs, sport programs; Catalano et al., 2004; Holt et al., 2017), where opportunities are created to engage in activities to learn new information, build connections, foster self-determination and self-efficacy, as well as practice adaptive skills (e.g., coping, self-management, life skills); important building blocks in the promotion of thriving. For people with IDD, increasing social bonds has been linked to greater quality of life and fewer mental health problems (Lunsky & Benson, 2001; Bramston et al., 2005). In addition, social and adaptive skill programs for youth and adults with IDD have been associated with improved social, adaptive, and self-determination skills, self-control, and coping self-efficacy, as well as decreased problem behaviours (Behroz-Sarcheshmeh et al., 2017; Carter & Hughes, 2005; Shogren et al., 2018; Walsh et al., 2018).

During the pandemic, however, access to the community and organizations were greatly impacted due to the regulations that were implemented to control the spread of COVID-19. Fortunately, the promotion of thriving does not necessarily require formal interventions or programs. Families may possess resources and supports within the home that can contribute to

thriving. Theokas and Lerner (2006) found that resources and supports in the family, such as household income and family quality time, were positively related to indicators of thriving. Household income was also related to lower levels of depression in youth without IDD (Theokas & Lerner, 2006), which is consistent with our finding regarding the correlation between higher family financial resources and a lower degree of mental health problems in people with IDD. Families can also implement opportunities for youth and adults with IDD to foster aspects of the Six Cs such as, connecting with family members and friends, caring for others, and contributing to themselves (e.g., self-care) or the household (e.g., helping with household tasks). Thriving can also be promoted within the context of school. Theokas and Lerner (2006) found that access to resources and supports in school settings, such as physical resources (e.g., gym, tutors, extended day programs) and accessibility in school, were positively related to indicators of thriving, and negatively related to depression in youth. Thus, research investigating the links between home and school resources, thriving, and mental health among youth and adults with IDD is warranted.

Limitations and Future Directions

The current study is an important first step in understanding the role of thriving in well-being among youth and adults with IDD. However, there are some limitations to consider. First, the sample consisted of caregivers of youth and adult athletes with IDD who participated in Special Olympics. Although athletes ranged in their level of caregiver-reported thriving and we did verify that the vast majority of the current sample were not involved in highly competitive components of sport per se (with only 23% being involved at National or Worlds levels), it is possible that this sample does not reflect the experience of thriving in the larger population of youth and adults with IDD outside of Special Olympics. Thus, replication using the same measures is warranted in a sample outside of Special Olympics. Second, responses to the survey

were collected from caregivers, which may impact the accuracy of the data being collected on the constructs of interest due to possible biases or lack of awareness. While a caregiver's perspective can be useful, it is only one component, and future research can expand on this work by using self-report measures or other data collection methods (e.g., interviews, photo-elicitation techniques, etc.) to assess these constructs. Finally, we must interpret the results of the current study with caution with respect to any causal inferences, as the data were cross-sectional and correlational in nature.

An important next step for future research is to assess how access to resources and supports in home and school environments are related to thriving and mental health in this population. In addition, given our findings regarding the correlations between individual strengths, thriving, and mental health problems, researchers may want to further explore the link between both individual and ecological strengths in relation to thriving, and mental health problems among people with IDD. In the current study we employed a PYD framework of thriving, which was developed for youth without IDD. It is critical that researchers develop an IDD-informed conceptualization of thriving to capture their potentially unique experiences of thriving to better understand how to best promote and support positive development and well-being in this population.

The current study's results underscore the importance of creating a supportive community environment that may promote thriving and reduce mental health problems among youth and adults with IDD. Preventing mental health problems is not the same as actively promoting positive development and thriving (Lerner, 2000). A PYD approach to interventions involves building one's strengths, such as those in the community, rather than treating deficits (Benson, 1997). The positive impact of mentoring programs has been documented for people

with IDD, including improvements in their sense of belonging, social skills, confidence, and independence (Ames et al., 2016; Fisher et al., 2020; Hochman et al., 2015). Moreover, social connection with others has been associated with fewer mental health problems and greater overall well-being in this population (Lunsky & Benson, 2001; Bramston et al., 2005). Our results also suggest that policymakers may want to focus on strengthening community collective activity through forming neighbourhood groups and community organizations to support and advocate on behalf of youth and adults with IDD, as well as to provide opportunities for self-advocacy. Creating a positive and empowering community for youth and adults with IDD may offer outlets for participation, protection, and the use of collective activity to improve quality of life (Zimmerman, 2000). Additionally, it will be important to enact policies for improving the accessibility of community physical and institutional resources for individuals with IDD to allow for meaningful engagement. Given the barriers to accessing community resources and low levels of community participation in this population (Abbott & McConkey, 2006; Ainsworth & Baker, 2004; Keogh et al., 2004; Verdonschot et al., 2009), research is needed to further understand what predicts meaningful community participation. Reducing barriers to community participation and social inclusion can enhance the social networks of people with IDD (Abbott & McConkey, 2006), improve mental health (Simplican et al., 2015), and provide opportunities through which thriving can be fostered.

Conclusion

There is a critical need to better understand thriving among youth and adults with IDD. Our findings suggest that the association between community resources and mental health problems in this population is partially explained by their level of thriving, such that greater access to community resources was associated with higher levels of thriving, and in turn, a lower

degree of mental health problems. The current study also lends support to the literature demonstrating that COVID-19 stressors have an important impact on the mental health of youth and adults with IDD. Although thriving did not buffer the association between COVID-19 stressors and mental health problems, thriving was associated with a lower degree of mental health problems. Overall, our findings suggest that access to community resources and thriving may be important targets for mental health supports for people with IDD.

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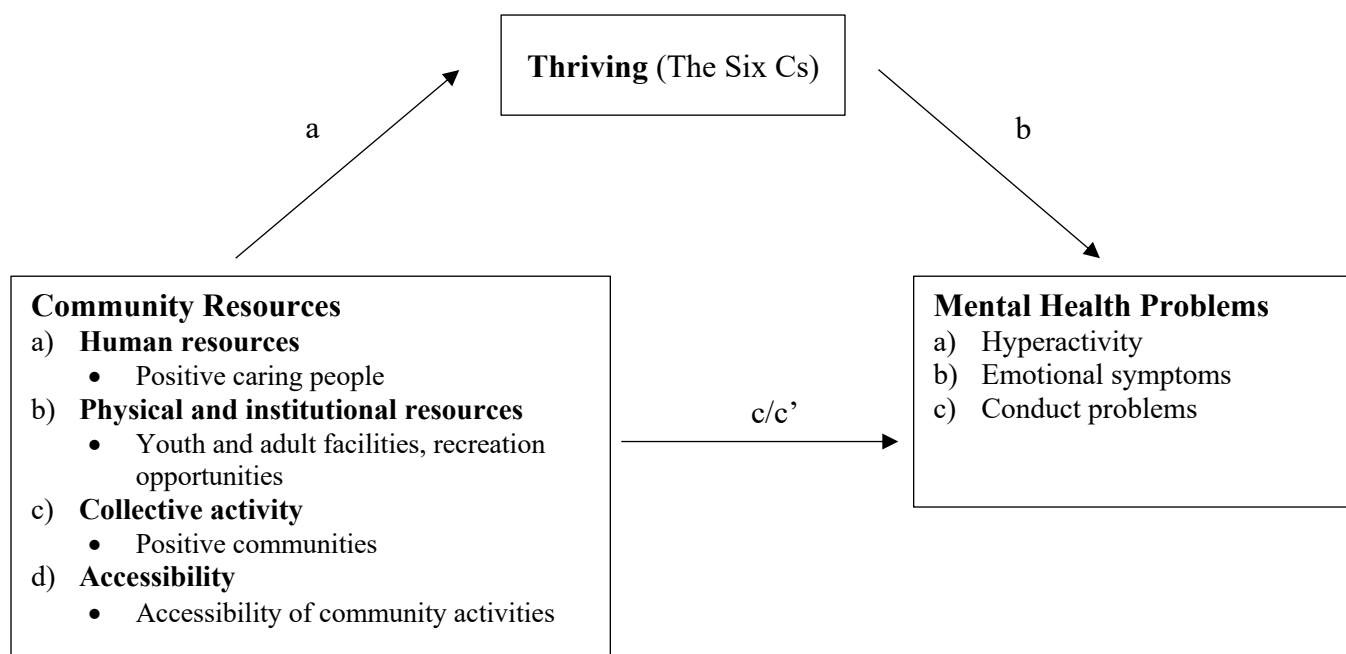
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Appendix A: Conceptual Models

Figure A1

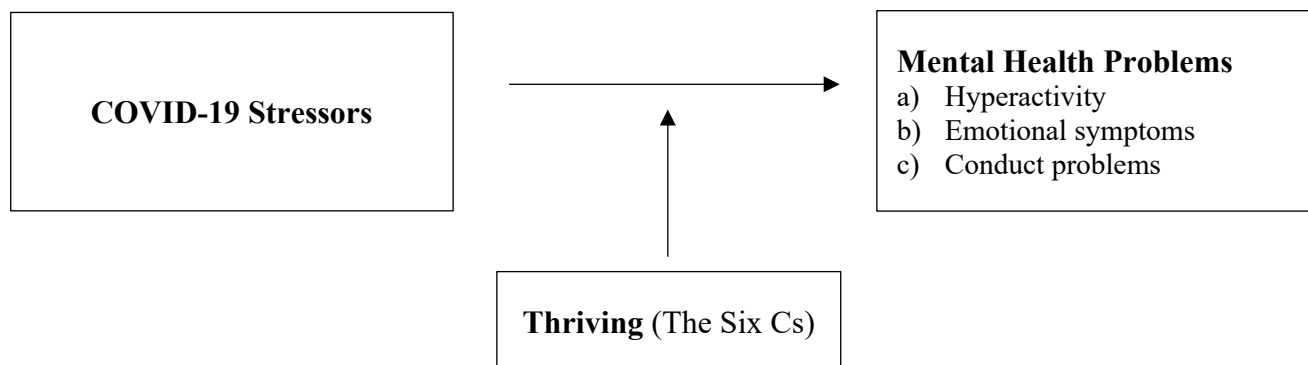
Conceptual Model of the Association Between Community Resources, Mental Health Problems, and Thriving



Note. Model depicts thriving as a potential mediator in the association between community resources and mental health problems among youth and adults with intellectual and developmental disabilities.

Figure A2

Conceptual Model of the Association Between COVID-19 Stressors, Mental Health Problems, and Thriving



Note. Model depicts thriving as a potential moderator in the association between COVID-19 stressors and mental health problems among youth and adults with intellectual and developmental disabilities.