A TELEPSYCHOLOGY-BASED SOCIAL COMPETENCE INTERVENTION FOR YOUTH WITH LEARNING DISABILITIES AND MENTAL HEALTH DIFFICULTIES DURING THE COVID-19 PANDEMIC

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ABSTRACT

Youth with learning disabilities (LDs) have a heightened risk for co-occurring mental health difficulties. The co-occurrence of LDs and mental health difficulties (LDMH) is associated with further risk of adverse impacts on cognitive and academic performance. Therefore, the availability of effective social competence interventions for youth with LDMH is essential to scaffold skill development and prevent cascading difficulties into adulthood. That said, the onset of the COVID-19 pandemic led to the immediate pause of most in-person therapeutic services. In response to worsening of youths' mental health difficulties and the significant challenges that the pandemic created for mental health service delivery, the Child Development Institute in Ontario, Canada, transitioned their in-person Social Awareness, Competence, Engagement, & Skills (ACES) intervention service to virtual implementation. I conducted two studies with the purpose of gathering qualitative and quantitative data to examine the feasibility, acceptability, and effectiveness of the telepsychology-based adaptations of Social ACES from the clinician, caregiver, and youth perspectives. **Methods**: Data collection occurred through in-depth semi-structured interviews of nine Social ACES clinicians (Study 1), four caregivers and four youth who partook in the telepsychology-based intervention (Study 2); lived experiences were analysed using the qualitative approach of Interpretative Phenomenological Analysis. For a mixed-methods perspective, I also examined outcomes of the intervention through quantitative parent ratings of their child's social competence pre- post-treatment, augmented by clinicians' reports (Study 2). The data was triangulated to provide a deeper perspective of the youths' progress through the program and challenges experienced. **Results:** The findings resulted in the emergence of four (Study 1) and two (Study 2) major themes, as well as elucidating four integrated youth case studies, to help clarify clinicians', caregivers, and

youths' perceptions of the adaptation. **Conclusions:** These studies provided preliminary evidence for the feasibility, acceptability, and effectiveness of virtual Social ACES. The findings have implications for the future of mental health service delivery, raise further questions about the effectiveness of social competence programming during and after a time of significant disruption, and point to several lines of inquiry for future critical research on virtual interventions for children and youth.

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Youth with Learning Disabilities and Intervention Literature

Youth with Learning Disabilities (LDs) struggle with a deficit in one or more of the basic psychological processes involved in verbal (e.g., understanding or using spoken or written language) and non-verbal abilities (e.g., visuospatial reasoning, visuospatial perception, psychomotor coordination) leading to difficulties with academic functioning (Cortiella, 2009; Panicker & Chelliah, 2016; Rourke, 2003; Shapiro & Gallico, 1993; Wright, 2004). Youth with LDs also experience difficulties with information processing (e.g., attention, executive functioning, language skills, theory of mind) and struggle with emotional reactivity, which is impacted by information processing challenges. Since emotions have a significant influence on cognitive processes, learning, and memory, youth with LDs' strong emotional responses often limit their cognitive abilities (e.g., cognitive flexibility, impulse control, perspective taking, social skills) (Diamond, 2013; Milligan et al., 2016; Tyng et al., 2017; Zelazo & Lyons, 2012). Additionally, youth with LDs often experience difficulties with successfully forming and maintaining friendships. Three-quarters of youth with LDs have lower levels of social competence (e.g., social skills, emotion and behaviour regulation, perspective-taking and understanding the social environment) (Baumeister et al., 2008; Milligan et al., 2016) compared to their typically developing same-aged peers.

Approximately 8.4 percent of Canadian school–aged children and youth experience LDs (Statistics Canada, 2020), with academic difficulties having negative impacts on many aspects of their psychosocial wellbeing (e.g., low self-worth, low self-esteem, loneliness, social rejection, social neglect, bullying by peers, self-doubt, and failure) (Arthur, 2003; Baumeister et al., 2008; Ginieri-Coccossis et al., 2013; Kempe et al., 2011; Martínez & Semrud-Clikeman, 2004; Mishna,

2003; Mishna & Muskat, 2004; Parker & Asher, 1987; Wiener & Schneider, 2002). These difficulties are compounded by bi-directional processes, as teachers perceive children with LDs as less cooperative, attentive, socially acceptable, and desirable as students (Karande et al., 2009; Katusic et al., 2001; Palmer et al., 1982; Panicker & Chelliah, 2016; Shivwits, 1998). The stress associated with having an LD is often manifested through externalizing behaviours, and social-emotional maladjustment problems, leading to further behavioural difficulties and increased risk for co-occurring mental health problems (Kempe et al., 2011; Lowe et al., 2007; Martínez & Semrud-Clikeman, 2004; Milligan et al., 2016).

Mental illness is a major source of disease burden for young people in developed countries (Arnett et al., 2014). Young people with LDs have a heightened risk for co-occurring emotion regulation and mental health difficulties (e.g., anxiety, depression, stress, attention-deficit hyperactivity disorder, suicidality), with close to 50% meeting criteria for another mental health disorder (Barkley & Murphy, 2006; Bryan et al., 2004; DuPaul et al., 2013; Elksnin & Elksnin, 2004; Maag, 2006; Margari et al., 2013; Nelson & Harwood, 2011). The co-occurrence of LDs and mental health difficulties (LDMH) is associated with further risk of adverse impacts on cognitive and academic performance, disrupting attentional capacities, as well as further reducing working memory and information processing (Eysenck et al., 2007; Lopez & Project, 2006; Nelson & Harwood, 2011; Patel et al., 2007). Academic, social, and mental health difficulties add additional burdens for youth with LDMH, leading to a negative cycle of cumulative setbacks and hopelessness (Erskine et al., 2015; Panicker & Chelliah, 2016). Therefore, the availability of effective psychosocial interventions for youth with LDMH is essential to scaffold their skill development and prevent cascading difficulties into adulthood.

Social Competence Programs for Neurodiverse and Youth with LDMH

In-person group-based social competence programs for neurodiverse youth (i.e., Autism Spectrum Disorder [ASD], LD, Attention Deficit Hyperactivity Disorder [ADHD]), some of whom have LDs, have been identified an effective form of treatment for improving social-emotional capacities, information processing, social interactions, social competence, and peer relationships (Guli et al., 2013; Kavale & Forness, 1996; Stichter et al., 2012). These interventions also improve social skills, self-esteem, and reduce perceived isolation (Kavale & Mostert, 2004; Milligan et al., 2016). These interventions generally comprise experiences with a group of youth with similar struggles to normalise the experience, reduce loneliness, build up self-esteem, and social competence. The groups also provide opportunities for safety, acceptance, and support from other youth (Hoag & Burlingame, 1997; Malekoff, 2001; Milligan et al., 2016; Mishna et al., 2015). Therapy within a peer group context provides youth with optimal teachable moments in which clinicians can provide corrective feedback (Milligan et al., 2016). These teachable moments may be critical to improvements as youth are more likely to learn from engaging socially with peers than with adults (Mcintosh et al., 1993). These models also provide youth with the opportunity to learn from experiences and adjust their behaviours adaptively (Berkovitz & Sugar, 1986; Gresham, Sugai, & Horner, 2001; Malekoff, 1997; Mishna, 1996a,b; Mishna et al., 1994; Scheidlinger & Aronson, 1991).

Guli et al. (2013) conducted a study on the effectiveness of the *Social Competence Intervention Program* for neurodiverse youth. Participants in the program reported significant improvements in many domains of social functioning following participation. Several other group interventions have been found to be effective for students with LDs (Shechtman & Pastor, 2005) with improved social skills, self-esteem, and reduced perceived isolation (Kavale &

Mostert, 2004; Milligan et al., 2016). Mishna et al. (2010) implemented and conducted a pilot evaluation of a manualized school-based social skills group for youth with LDs. The authors reported that it increased and enhanced youth self-advocacy and confidence and was perceived as beneficial by providers. Mishna et al. (2010) conducted qualitative interviews with children, their parents, and their teachers to provide a descriptive, comprehensive evaluation of the programming. This study was focused on youth with LD and not those with LDMH and did not examine the challenges associated with implementing the program (Mishna et al., 2010).

There has been a longstanding lack of services and supports to address social-emotional difficulties experienced by young people with LDMH, increasing the risk for further psychosocial sequelae (Cavioni et al., 2017; Finn & Rock, 1997). Social competence interventions have been developed for youth with a range of neurodevelopmental disorders (e.g., ADHD, ASD), including for youth with LDMH (Milligan et al., 2016). The "treatment of choice" for youth with LDMH is in-person social skills groups tailored to youths' unique levels of social competence difficulties, information processing strengths, and emotion regulation difficulties (Milligan et al., 2016). There is relatively limited published research, however, on the implementation of these practices in community settings (Cotugno, 2009; Guli et al., 2013; Maag, 2006; Stichter et al., 2012). This highlights the need for additional program evaluation research on programs to support the healthy development of youth with LDs and LDMH (Milligan et al., 2016; Mishna et al., 2010).

Social Awareness, Competence, Engagement, & Skills (ACES)

The LDMH Social Awareness, Competence, Engagement, & Skills (ACES) program (hereinafter referred to as Social ACES), developed by the Child Development Institute (formerly Integra) is one such experiential social competence program designed to support youth

aged 8 to 18 with LDMH difficulties in developing social-emotional capacities, information processing, social interactions, social competence, and peer relationships (Milligan et al., 2017). Social ACES has traditionally been delivered over eight to 10 weekly sessions in small groups of approximately two to five youth. Prior to the Social ACES sessions, the clinicians undertake an intensive group matching process. It is based on a multisource and comprehensive assessment (i.e., psychological assessment report, clinician/parent reports). In addition, the staff conduct clinical observations during group interactions, reviews of individual learning profiles, and provide clinical ratings of self-engagement, emotion-regulation skills, personal change motivation, and social competence. To help ensure group fit, activities and goals for youth assigned to each group are designed to be as homogenous as possible.

For youth presenting with LDMH, social competence researchers have posited that in-person social skills groups, tailored to youths' unique level of social competence difficulties, information processing, strengths, and emotion regulation difficulties may be particularly critical to support their development (Cotugno, 2009; Guli et al., 2013; Maag, 2006; Milligan et al., 2016; Stichter et al., 2012). Nevertheless, there is limited research on tailored social competence programs for youth with both LDs and mental health problems (Maag, 2006).

Milligan et al. (2017) conducted one of the few studies of a social competence intervention tailored for youth with LDMH to assess the efficacy of the Social ACES intervention. Milligan et al. (2017) used a mixed-methods approach to evaluate the Social ACES. Social ACES differs from other manualized social competence interventions, by providing a tailored and flexible curriculum and therapeutic stance, based on individual and group therapeutic goals, as well as group matching (Milligan et al., 2017). This mixed-method study suggested that the tailored nature of the program and in-vivo social coaching contributed to

youth having a positive social gain following a 10-week group, at post-intervention (Milligan et al., 2017).

This evidence-based experiential program uses a strength-based, and flexible curriculum to provide children and youth with positive social experiences and improve their social competence, information processing, emotion regulation (Milligan et al., 2017). Developed and implemented at CDI in Canada, Social ACES is one of a few interventions specifically targeting the unique needs of children with LDMH, with a clear theoretical rationale and program goals (e.g., Communication; Cooperation; Responsibility; Engagement, Self-Control) at both individual and group levels. Since the amalgamation of CDI and Integra in 2014, Social ACES has been used to scaffold social and emotional development for children and youth children with LDs and co-occurring complex mental health difficulties (e.g., ADHD, ASD, Anxiety Disorders, Mood Disorders).

Theoretical Rationale for this Study

There is a paucity of research on social-competence interventions that have been developed with a clear theoretical framework for tailoring treatment for youth with LDMH (Kavale & Mostert, 2004; Maag, 2006; Vigerland et al., 2016). Social ACES has begun to fill this research gap, with a theoretical framework for treatment of youth with LDMH, which is tailored to their level of social competence, information processing, and emotion regulation.

Social ACES is grounded in the "Integrated Model of Emotion Processes and Cognition in Social Information Processing" (SIP) (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). This model provides a theoretical rationale for tailored treatment for young people with LDMH, based on the child's level of social competence, information processing, and emotion regulation (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). Recent research on the role of social-cognition and

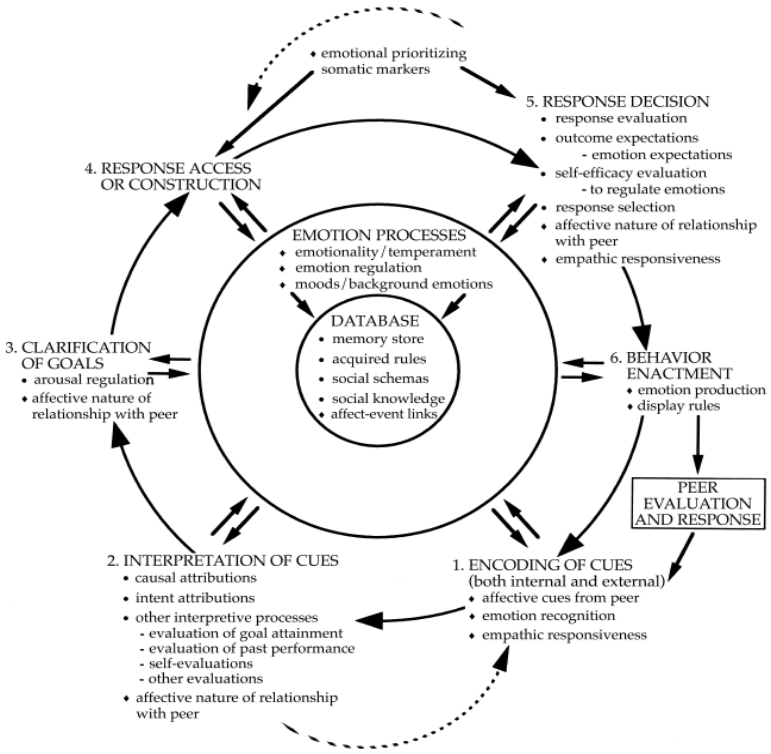
emotional processing in LD has contributed significantly to the understanding and support of youth with LDMH difficulties.

Lemerise and Arsenio (2000) developed a model that integrated emotional and cognitive processing and cognition in SIP (see Figure 1). The Integrated SIP Model improves on Dodge's (1986) SIP model by elaborating on emotional responses. Lemerise and Arsenio (2000) illustrate how young people process and interpret social cues to achieve a socially competent emotional and behavioural response to these cues. As depicted in Figure 1 below, this integrated model is described as occurring in six consecutive steps: 1. attending to encode, 2. interpreting social information, 3. clarifying the goal, 4. generating and evaluating possible responses, 5. successfully delivering (self-efficacy) the predicted outcome of possible responses, and 6. carrying out the most positively evaluated response, behaviourally.

Children's capacities at various steps in the model are shaped by cognitive and affective cues, memories from past experiences, biological predispositions (e.g., attention, perception, memory, processing speed, emotional arousal/temperament, emotion regulation) and affective cues from peers. Response selection is influenced by an individual's ability to control affective expression (emotion regulatory ability), send emotional cues, affective/arousal intensity, and consider situations from multiple cognitive perspectives (Crick & Dodge, 1994; Eisenberg & Fabes, 1992; Rothbart & Derryberry, 1981).

Figure 1:

Integrated model of emotion processing and cognition in Social Information Processing.



Adapted [reprinted] from "An integrated model of emotion processes and cognition in social information processing" by E. Lemerise and W. Arsenio (2015), *Child Development,* 71, 1. Copyright 2000 by " The Society for Research in Child Development" from "A review and reformulation of social-information-processing mechanisms of children's social adjustment", N. Crick & K. Dodge, *Psychological Bulletin* 92, 3. Copyright 1994 by the "American Psychological Association".

Social cognitive capacities such as SIP are considered one of the most difficult domains for individuals with LDs to acquire because of their cognitive deficits (e.g., attention, memory, comprehension, processing) and social-emotional difficulties (e.g., emotion regulation, social and emotional comprehension, peer rejection) (Bauminger et al., 2005; Bauminger & Kimhi-Kind, 2008). Therefore, this theoretical model provides Social ACES with a population-specific, theoretically grounded approach for treatment tailored to children's individual social, affective and cognitive abilities.

Lastly, while there is a growing body of literature in the telehealth space spanning across multiple disciplines, the telepsychology literature is still in its infancy. This study provides important preliminary descriptive research for an emerging field without any well-established theory (Armfield et al., 2014; Wade et al., 2017).

Emerging Mental Health Needs of Youth With LDMH During the Pandemic

Prior to the onset of the Coronavirus Disease-2019 (COVID-19) pandemic in early 2020, the Social ACES intervention was being delivered in-person within the CDI settings. Across the country, the onset of the COVID-19 pandemic led to the immediate pause of the majority of in-person, face-to-face therapeutic services.

As schools were closed and mandatory public health lockdowns implemented, youth experienced significant and elevated emotion dysregulation and mental health difficulties (MacEvilly & Brosnan, 2020). Youth, including those with LDMH, are vulnerable to the impact of sustained stressors (e.g., social isolation, uncertainty, lack of structure), causing mental health difficulties, particularly during a developmentally sensitive period (Courtney et al., 2020; Fox et al., 2010; Romeo, 2017; Xie et al., 2020). During the pandemic lockdown, youth with special education needs experienced poorer quality of life, increased mental health problems, as well as higher risk for abuse (Tso et al., 2022). Access to mental health care for youth was paramount due to risk of onset for mental health disorders, which peaks at 14.5 years of age (Solmi et al., 2022). One response to meet the mental health needs of youth during the pandemic, was a rapid scale-up of telepsychology implemented by community organizations and healthcare systems to fill the service gap (Moreno et al., 2020; Nagata, 2021; Solmi et al., 2022; Topooco et al., 2018). Therefore, to meet the needs of vulnerable youth, CDI's Social ACES intervention was adapted for virtual group delivery.

Clinicians' Perspectives of Virtual Mental Health Delivery

Many community agencies, including CDI, rapidly shifted from face-to-face services to virtual delivery of services to meet the increased prevalence and burden of mental health problems for youth and to maintain continuity of service delivery (Boydell et al., 2014; Whaibeh et al., 2020; WHO, 2020). Prior to the COVID-19 pandemic, there was limited research on clinicians' perceptions of and experiences with virtual delivery of mental health services (Romanchych et al., 2022; Simms et al., 2011). In general, Canadian mental health clinicians have reported positive attitudes in relation to telehealth delivery, particularly due to the equitable access it can afford rural and remote communities (Simms et al., 2011). That said, barriers to implementation have also been recognized (e.g., resistance, negative perceptions) (Ross et al., 2016; Vis et al., 2018). A systematic review of e-health implementation research by Ross et al. (2016) identified several factors that were important for implementation, such as effective policy, incentives, sufficient resources, engagement, acceptance, technological familiarity.

During the COVID-19 restrictions, Romanchych et al. (2022) engaged a diverse group of mental health clinicians in community and hospital settings to study their experiences and perceptions of a range of virtual service delivery modalities (e.g., individual therapy, group therapy, assessment, medical follow-up). This study revealed that many clinicians quickly pivoted to the new service delivery modality, even though over 70% of the clinicians had no prior experience with delivering services virtually prior to the pandemic (Ross et al., 2016). The clinicians identified benefits of adopting virtual delivery of mental health services for client-care, particularly when in-person services increased public health risk (Romanchych et al., 2022). In the early phase of the pandemic, Uscher-Pines et al. (2020) found that virtual delivery improved the ease of access to services (Uscher-Pines et al., 2020).

Although virtual services were essential during the pandemic restrictions, there were differences in perceptions of the adaptation. Bierbooms et al. (2020) found that therapists and counsellors felt less effective delivering services virtually, as compared to medical providers. These authors also found that therapy improved with clinician experience, with clinicians often preferring to meet with clients face-to-face to build rapport before transitioning to virtual delivery, believing that it allowed for a better therapeutic relationship(Bierbooms et al., 2020; Romanchych et al., 2022; Uscher-Pines et al., 2020). In-person meetings during the pandemic were difficult and if possible, required that both the clinician and client wore face masks, which was found to impede rapport building. Kooistra et al. (2019) noted that increased clinician experience with virtual delivery and utility of a hybrid model when appropriate could result in more effective delivery. Without previous training prior to the rapid pivot to virtual at the onset of the pandemic, clinicians believed that they would benefit from virtual clinical competence training (e.g., screening for virtual delivery fit, improving virtual rapport building) (Barnett & Kolmes, 2016; Goldstein & Glueck, 2016; Kooistra et al., 2019; Romanchych et al., 2022).

Taken together, the studies on clinicians' perceptions of the shift to virtual services are still emergent (Lee et al., 2023). There is limited research on clinicians' perceptions of mental health service adaptation and virtual delivery for youth, and a non-existent literature for programming for youth with LDMH. Given that virtual mental health services continue to be offered, Romanchych et al. (2022) highlighted the importance of ongoing research on the impact and effectiveness of virtual intervention delivery for both clinicians and their clients. The authors note the importance of future research evaluating for whom virtual is and is not effective and accessible.

Virtual Psychological Interventions and Social Competence Adaptations

There is an emerging body of evidence supporting the feasibility, effectiveness, cost-efficiency, increased user empowerment, improved access and health equity associated with virtual, synchronous, delivery of psychological interventions (Anil et al., 2023; Cristofalo, 2021; Cullen, 2018; de Nocker & Toolan, 2023; Gloff et al., 2015; Hilty et al., 2017, 2020; Knutsen et al., 2016). During the public health restrictions, social skills interventions were successfully delivered virtually to youth with a range of mental health diagnoses and neurodevelopmental presentations (Simacek et al., 2021) including ASD (de Nocker & Toolan, 2023; Estabillo et al., 2022; Lee et al., 2023; Mootz et al., 2022; Nelson et al., 2003; Valentine et al., 2021), mild intellectual disability (Oudshoorn et al., 2023) and anxiety disorders (Rooksby et al., 2015; Storch et al., 2011).

In recent research, Estabillo et al. (2022) evaluated the virtual adaptation of the evidence-based *Program for the Education and Enrichment of Relational Skills (PEERS®)*, a social skills intervention for youth with ASD and other social difficulties, in comparison to its original face-to-face counterpart. They found that the virtual adaptation was relatively comparable to face-to-face delivery (Estabillo et al., 2022). During the pandemic, MacEvilly and Brosnan (2020) and Mootz et al. (2022) considered the process and feasibility of virtual adaptations of *The Secret Agent Society*, a cognitive behaviour therapy social skills program for youth with moderate to severe mental health problems and their caregivers. Both studies provided details about modifications made to the face-to-face program, indicated feasibility of virtual programming, and suggested the need for future research. In addition, Gale et al. (2020) described the virtual adaptation of *LUNCH Groups®*: a transdiagnostic social skills program for youth. They evaluated attendance, attrition, and general satisfaction compared to face-to-face intervention. The authors

found that attendance, attrition, and general satisfaction were comparable between the in-person and virtual adaptation (Gale et al., 2020).

To date, there are no known studies considering the virtual-adaptation of an evidence-based, group-based, tailored social competence program for youth with LDMH. The rapid move to telepsychology services due to COVID-19 presented an opportunity for a natural experiment to assess the feasibility of virtual service delivery. In addition, it presented an opportunity for qualitative inquiry to examine the processes of virtual mental health service delivery for youth (Boydell et al., 2007, 2010, 2014; Sklar et al., 2021)

Program Evaluation of Virtual Adaptations for Youth with LDMH during COVID-19

Many youths, including those with LDMH, reported elevated levels of mental health difficulties during the COVID-19 pandemic (Bao & Moretti, 2023; Cacioppo et al., 2021; Eisengart et al., 2021; Jones et al., 2021; Nearchou et al., 2020; Panda et al., 2021; Tzur Bitan et al., 2022). The worsening of youths' mental health difficulties during the pandemic and the significant challenges that the pandemic created for mental health service delivery (Bao & Moretti, 2023; WHO, 2020) called attention to the need for a novel approach to deliver evidence-based and accessible interventions for youth. In response, the CDI transitioned their mental health services to virtual implementation, utilising a Personal Health Information Protection Act (PHIPPA) compliant video conferencing platform, and breakout room technology to replicate the in-person Social ACES interventions.

There was a need for mixed-methods research to explore the feasibility, acceptability, and effectiveness of virtual of programming (e.g., Social ACES) during the COVID-19 pandemic (Fetters & Molina-Azorin, 2020, 2021; Molina-Azorin & Fetters, 2019). To date, however, there

are no known mixed-methods studies examining the virtual-adaptation of an evidence-based, group-based, tailored social competence program for youth with LDMH.

The Current Research

The rapid move to telepsychology services due to COVID-19 presented the opportunity for a natural experiment to gather qualitative and quantitative data to examine perceptions of the feasibility, acceptability, and effectiveness of the adaptations of Social ACES to a virtual context from the clinician, caregiver, and youth perspectives. To achieve this, I conducted two studies.

Study 1 explore clinicians' perceptions of the process of pivoting from in-person services to delivery of a virtual adaptation since the beginning of the COVID-19 shutdown and used qualitative inquiry (see Appendix B) to explore the clinical processes involved, as well as examine for whom the delivery of virtual Social ACES may be feasible and acceptable for.

In Study 2, I explored caregivers and youths' perceptions of the telepsychology-based delivery of Social ACES, utilizing a mixed-method design. For a qualitative approach, I conducted one-on-one semi-structured interviews with both caregivers and youth to explore their perceptions of the virtual context for Social ACES program. For a quantitative perspective, I examined outcomes of the intervention by examining caregivers' ratings of four youths' social competence pre- post-treatment. These data were augmented by clinicians' qualitative reports of the progress of these four youth.

The study was approved by the Human Participants Review Sub-Committee at York University and the Child Development Institute, in Toronto, Ontario, Canada.

STUDY 1: "VIRTUAL WAS THE SOGGY POTATO CHIP": A QUALITATIVE STUDY OF CLINICIANS' EXPERIENCES WITH THE ADAPTATION AND DELIVERY OF A GROUP-BASED SOCIAL COMPETENCE PROGRAM DURING THE COVID-19 PANDEMIC

Introduction

Youth with Learning Disabilities and Psychosocial Sequelae

Approximately 8.4 percent of Canadian school–aged children and youth experience LDs (Statistics Canada, 2020), with academic difficulties negatively impacting psychosocial wellbeing (e.g., low self-worth, low self-esteem, loneliness, social rejection, social neglect, bullying by peers, self-doubt, and failure) (Arthur, 2003; Baumeister et al., 2008; Ginieri-Coccossis et al., 2013; Kempe et al., 2011; Martínez & Semrud-Clikeman, 2004; Mishna, 2003; Mishna & Muskat, 2004; Parker & Asher, 1987; Wiener & Schneider, 2002). Youth with LDs struggle with deficits in one or more basic psychological processes involved in verbal (e.g., understanding or using spoken or written language) and non-verbal abilities (e.g., visuospatial reasoning, visuospatial perception, psychomotor coordination), and these deficits create difficulties with academic functioning (Cortiella, 2009; Panicker & Chelliah, 2016; Rourke, 2003; Shapiro & Gallico, 1993; Wright, 2004). Among students with LDs, 75% have lower levels of social competence than their same-aged peers, which comprises social skills (e.g., engaging independently in social interaction, successfully forming, and maintaining friendships), emotion and behaviour regulation, perspective-taking, and understanding the social environment (Bauminger & Kimhi-Kind, 2008; Milligan et al., 2016).

Young people with LDs have a heightened risk for co-occurring emotion regulation and mental health difficulties (e.g., anxiety, depression, ADHD, suicidality), with close to 50%

meeting criteria for another mental health disorder (Bryan et al., 2004; DuPaul et al., 2013; Elksnin & Elksnin, 2004; Maag, 2006; Margari et al., 2013; Murphy, 2006; Nelson & Harwood, 2011; Vedi & Bernard, 2012). The co-occurrence of LDMH is associated with further risk of adverse impacts on cognitive and academic performance, disrupting attentional capacities, further reducing working memory and information processing (Eysenck et al., 2007; Lopez & Project, 2006; Nelson & Harwood, 2011; Patel et al., 2007). Therefore, effective and accessible psychological interventions for youth with LDMH are essential.

Social Skills Interventions for LD and Mental Health Populations

In-person group-based social competence programs for children and youth with LDMH have been identified as an effective form of treatment for improving social-emotional capacities, information processing, social interactions, social competence, and peer relationships (Guli et al., 2013; Kavale & Forness, 1996; Stichter et al., 2012). Several group interventions have been found to be effective for students with LDs(Shechtman & Pastor, 2005), and are associated with improved social skills, self-esteem, and reduced perceived isolation (Kavale & Mostert, 2004; Milligan et al., 2016). For example, Guli et al.'s (2013) study considering the effects of the *Social Competence Intervention Program* for neurodiverse populations (i.e., ASD, LD, and/or ADHD) found that participants reported significant improvements in multiple social functioning domains following participation. In addition, Mishna et al. (2010) implemented and conducted a pilot evaluation of a manualized school-based social skills group for youth with LDs that increased and enhanced youth self-advocacy and confidence and was perceived as beneficial by providers. The researchers in this study conducted and analyzed qualitative interviews with children, teachers, and parents to provide a description, comprehensive evaluation practice principles (Mishna et al., 2010). That said, this study did not examine the challenges associated

with the program, did not use a mixed-methods approach, and considered youth with LD, not those with LDMH specifically.

Social Awareness, Competence, Engagement, and Skills (ACES)

The Social ACES intervention is one such program designed to support youth with LDs in developing social-emotional capacities, information processing, social interactions, social competence, and peer relationships. Social ACES has traditionally been delivered over eight to 10 weekly sessions in small groups of approximately two to five youth. For youth presenting with LDMH, social competence researchers have posited that in-person social skills groups tailored to youths' unique level of social competence difficulties, information processing strengths and emotion regulation difficulties may be particularly important (Cotugno, 2009; Guli et al., 2013; Maag, 2006; Milligan et al., 2016; Stichter et al., 2012). Nevertheless, there is limited research on tailored social competence programs for youth with both LDs and mental health problems (Maag, 2006).

One of the few studies of a social competence intervention tailored for this population assessed the efficacy of the Social ACES program. Social ACES is a group-based, experiential social competence program for youth aged 8 to 18 with LDMH difficulties (Milligan et al., 2017). This evidence-based experiential program uses a strength-based, and flexible curriculum to provide children and youth with positive social experiences and improve their social competence, information processing and emotion regulation (Milligan et al., 2017). Developed and implemented at the CDI (formerly Integra) in Canada, Social ACES is one of a few interventions specifically targeting the unique needs of children with LDMH, with a clear theoretical rationale and program goals (e.g., Communication; Cooperation; Responsibility; Engagement, Self-Control) at both individual and group levels. Since the amalgamation of CDI

and Integra in 2014, Social ACES has been used to support children with LDMH (e.g., ADHD, ASD, Anxiety Disorders, Mood Disorders). Evaluation data from Milligan et al.'s (2017) mixed-method study suggested that the tailored nature of the program and in-vivo social coaching contributed to youth having a positive social gain following a 10-week group, at post-intervention (Milligan et al., 2017).

Through a comprehensive review of youths' learning profiles (i.e., psychoeducational assessment) and group matching, this program is designed to deliver group activities to support youths' neuropsychological processing difficulties (Milligan et al., 2017; Child Development Institute, 2016). Prior to the Social ACES sessions, the clinicians undertake an intensive group matching process. It is based on a multisource and comprehensive assessment (i.e., psychological assessment report, clinician/parent reports). In addition, the staff conduct clinical observations during group interactions, reviews of individual learning profiles, and provide clinical ratings of self-engagement, emotion-regulation skills, personal change motivation, and social competence. To help ensure group fit, activities and goals for youth assigned to each group are designed to be as homogenous as possible.

Social ACES appears to be a uniquely positioned and promising intervention to help scaffold social and emotional development for youth with LDMH. With no other known interventions targeting LDMH population specifically, yet close to 50% LDMH meeting criteria for another mental health disorder, future empirical research is essential in building the evidence base for this program (Barkley & Murphy, 2006; Bryan et al., 2004; DuPaul et al., 2013; Elksnin & Elksnin, 2004; Maag, 2006; Margari et al., 2013; Nelson & Harwood, 2011; Vedi & Bernard, 2012).

The Pivot to Virtual Psychological Services During the COVID-19 Pandemic

Prior to the onset of the COVID-19 pandemic in 2020, the program was being delivered in-person within the CDI settings. Across the country, the onset of the COVID-19 pandemic led to the immediate pause of the majority of in-person, face-to-face therapeutic services. As schools were closed and mandatory lockdowns implemented, youth experienced significant and elevated emotion dysregulation and mental health difficulties (MacEvilly & Brosnan, 2020). Youth with increased special education needs experienced poorer quality of life, increased mental health problems, as well as higher risk for abuse during the pandemic (Tso et al., 2022). Therefore, an alternative approach to face-to-face service delivery for this high-risk LDMH population was essential, with public health mandated lockdowns, school-closures, and physical distancing.

Clinicians' Attitudes and Experiences with Virtual Delivery of Mental Health Services

Prior to the pandemic, virtual delivery of psychological interventions was used sparingly by mental health clinicians. With the ubiquitous public health restrictions, however, service delivery quickly shifted to being exclusively virtual, as it was the only mode available for intervention delivery (Schriger et al., 2022). As a result, many community agencies, including CDI, rapidly shifted from face-to-face services to virtual delivery of services to meet the increased prevalence and burden of mental health problems for youth and to maintain continuity of service delivery (Boydell et al., 2014; Whaibeh et al., 2020; WHO, 2020).

Prior to the COVID-19 pandemic, there was limited understanding about clinicians' perceptions of and experiences with virtual delivery of mental health services. In general, Canadian mental health clinicians have reported positive attitudes in relation to telehealth delivery, particularly due to the equitable access it can afford rural and remote communities (Simms et al., 2011). That said, barriers to implementation have also been recognized (e.g.,

resistance, negative perceptions) (Ross et al., 2016; Vis et al., 2018). A systematic review of e-health implementation research by Ross et al. (2016) identified several factors that were important for implementation (e.g., effective policy, incentives, sufficient resources, engagement, acceptance, technological familiarity).

During the COVID-19 restrictions, Romanchych et al. (2022) engaged a diverse group of mental health clinicians in community and hospital settings to study their experiences and perceptions of a range of virtual service delivery modalities (e.g., individual therapy, group therapy, assessment, medical follow-up). This study revealed that many clinicians quickly pivoted to the new service delivery modality, even though over 70% of the clinicians had no prior experience with delivering services virtually prior to the pandemic (Romanchych et al., 2022). The authors reported that the clinicians identified benefits of adopting virtual delivery of mental health services for client-care, particularly when in-person delivery increased public health risk (Romanchych et al., 2022). Uscher-Pines et al. (2020) conducted a study in the early phase of the pandemic and found that virtual delivery improved the ease of access to services.

Taken together, these studies considering the shift to virtual services found virtual technology easy to use and allowed continuity of care. They also believed that overall client care was comparable to face-to-face delivery, although the quality of virtual interactions was believed to be limited in comparison (Uscher-Pines et al., 2020). Clinicians noted the importance of understanding which contexts and populations are best suited for virtual delivery. Virtual was identified as being a better fit for populations with less serious mental health difficulties (i.e., mood and anxiety disorders), older youth, and individuals with greater capacity to regulate attention and behaviour (Carpenter et al., 2018; Hersh et al., 2006; Nelson et al., 2003; Slone et al., 2012; Topooco et al., 2019). To improve quality of care and reduce risk, clinicians noted that

it was necessary to account for the content being shared, mental health severity, the importance of rapport building, client motivation to engage, and the client's access to a confidential, safe space to participate (Barnett & Kolmes, 2016; Romanchych et al., 2022). While virtual delivery was believed to have increased access for many, concerns were raised regarding the unintentional drawbacks of access for populations with increased severity of mental health presentation and for younger children with lower regulation abilities (Sasangohar et al., 2020). There was also a concern for the increased risk associated with provision of distressing or unanticipated information(Romanchych et al., 2022).

Although virtual services were essential during the pandemic restrictions, there were differences in perceptions of the adaptation. Bierbooms et al. (2020) found that therapists and counsellors felt less effective delivering services virtually, as compared to medical providers. These authors also found that therapy improved with clinician experience, with clinicians often preferring to meet with clients face-to-face to build rapport before transitioning to virtual delivery, believing that it allowed for a better therapeutic relationship(Bierbooms et al., 2020; Uscher-Pines et al., 2020). In-person meetings during the pandemic were difficult and if possible, required that both the clinician and client wore facemasks, which also was found to impede rapport building. Kooistra et al. (2019) noted that increased clinician experience with virtual delivery and utility of a hybrid model when appropriate could result in more effective delivery. Without previous training prior to the rapid pivot to virtual at the onset of the pandemic, clinicians believed that they would benefit from virtual clinical competence training (e.g., screening for virtual delivery fit, improving virtual rapport building) (Barnett & Kolmes, 2016; Goldstein & Glueck, 2016; Romanchych et al., 2022).

Challenges that have been reported with virtual delivery include limited capacity to observe nonverbal cues, patient environmental distractions, limited patient privacy, internet issues, reduced quality of patient interactions (Uscher-Pines et al., 2020). Some clinicians reported a preference for in-person service delivery when physical distancing guidelines were no longer in effect (Uscher-Pines et al., 2020). Clinicians reported the importance of pacing their virtual sessions and taking movement or meditation breaks, as they experienced increased fatigued when delivering services virtually compared to face-to-face (Romanchych et al., 2022). Clinicians reported struggling during long periods on their screen, a phenomenon that has been reported as "Zoom fatigue" by other clinicians (Maheu & Wright, 2020; Sasangohar et al., 2020). In addition, clinicians spoke to the importance of reducing distractions in their physical space and using ergonomic equipment (Maheu & Wright, 2020).

Romanchych et al. (2022) noted that as mental health services continue to be offered virtually, it is important to continue researching the impact of virtual intervention delivery for both clinicians and their clients. The authors note the importance of future research evaluating for whom virtual is and is not effective and accessible. They also highlight the importance of considering technology as a viable platform for mental health service delivery, especially for those who live in remote and rural communities or are unable to travel for services.

Evidence Supporting Virtual Psychological Interventions and Social Competence Adaptations

There is an emerging body of evidence supporting the feasibility, effectiveness, cost-efficiency, increased user empowerment, improved access and health equity associated with virtual, synchronous, delivery of psychological interventions (Cullen, 2018; de Nocker & Toolan, 2023; Gloff et al., 2015; Knutsen et al., 2016). During the public health restrictions, social skills

interventions have been successfully delivered virtually to youth for a range of mental health diagnoses and neurodevelopmental presentations (Simacek et al., 2021) including ASD (de Nocker & Toolan, 2023; Estabillo et al., 2022; Lee et al., 2023; Mootz et al., 2022; Nelson et al., 2003; Valentine et al., 2021), mild intellectual disability (Oudshoorn et al., 2023) and anxiety disorders (Rooksby et al., 2015; Storch et al., 2011).

In recent research, Estabillo et al. (2022), evaluated the virtual adaptation of the evidence-based *Program for the Education and Enrichment of Relational Skills (PEERS®)*, a social skills intervention for youth with ASD and other social difficulties, in comparison to its original face-to-face counterpart. This study demonstrated that the virtual adaptations were relatively comparable to the face-to-face delivery (Estabillo et al., 2022). MacEvilly and Brosnan (2020) and Mootz et al. (2022) considered the process and feasibility of virtual adaptations of *The Secret Agent Society*, a cognitive behaviour therapy based social skills program for youth with moderate to severe mental health presentation and their caregivers, during the pandemic. Both studies provided details about modifications made to the face-to-face program, indicated feasibility of virtual programming, and suggested the need for future research. Lastly, Gale et al., (2021) described the virtual adaptation of *LUNCH Groups®*, a transdiagnostic social skills program for youth, and evaluated attendance, attrition and general satisfaction compared to the face-to-face intervention. The authors found equivalent attendance, attrition, and general satisfaction to be comparable between the in-person and virtual adaptation.

Although there were studies showcasing feasibility of virtual social competence programs for youth with a range of mental health difficulties, no studies were found that focused on the virtual adaptation of a social competence program tailored for LDMH populations, which was the focus of the present study.

A Need for Research on Tailored Social Competence Adaptations for LDMH Populations: Social ACES During COVID-19

Youth, including those with LDMH, are highly vulnerable to the impact of sustained stressors (e.g., social isolation, uncertainty, lack of structure), causing mental health difficulties, particularly during a developmentally sensitive period (Courtney et al., 2020; Fox et al., 2010; Romeo, 2017; Xie et al., 2020). Access to mental health care for youths is paramount due to the age of onset for mental health disorders (which peaks at 14.5 years of age), with the rapid scale-up of telepsychology being one response by community organizations and healthcare systems emerging to fill the mental health care service gap (Moreno et al., 2020; Nagata, 2021; Solmi et al., 2022; Topooco et al., 2018). Therefore, to meet the needs of vulnerable youth, the Child Development Institute's (CDI) Social ACES intervention was adapted for virtual group delivery.

To date, there are no known studies considering the virtual-adaptation of an evidence-based, group-based, tailored social competence program for youth with LDMH. The rapid move to telepsychology services due to COVID-19 presented an opportunity for a natural experiment to assess the feasibility of virtual service delivery. In addition, it presented an opportunity for qualitative inquiry to examine the processes of virtual mental health service delivery for youth (Boydell et al., 2007, 2010, 2014; Sklar et al., 2021).

Objectives

The overall goal for the current research was to explore the delivery of a virtual Social ACES social competence program for youth with LDMH. There was a need for qualitative research to explore the virtual adaptation of programming during the COVID-19 pandemic (Teti et al., 2020). I used a qualitative design to describe the clinical processes, clinicians' acceptability of the program, and examine for whom the delivery of virtual Social ACES may be

feasible for. For the current study, I defined a feasible and acceptable program as one that clinicians believed could be practically carried out (Bowen et al., 2009), as well as being well received and meeting the needs of the clinicians and organizational setting (Greene, 2008), respectively.

Based on one-on-one semi-structured interviews (see Appendix B) with clinical team members, I set out to explore clinicians' perceptions of the process of pivoting from in-person services to delivery of a virtual adaptation since the beginning of the COVID-19 shutdown. More specifically, the objectives were as follows:

Objective 1: To investigate clinicians' perceptions of the clinical processes of pivoting from in-person services and adapting to the delivery of a virtual Social ACES group program.

Objective 2: To investigate the clinicians' perceptions of the key considerations (e.g., group dynamics, scaffolding, theory of change) feasibility and acceptability of the adaptation and delivery of virtual Social ACES (see Appendix B).

Objective 3: To investigate clinicians' perceptions about which youth were and were not able to engage with the virtual platform and why.

Method

Study Design

For this study, I utilized a qualitative research design, which allowed me to illustrate the qualitative results (e.g., clinicians' perspective of the process and adaptation of virtual therapy). Qualitative research is particularly well suited to enhance clinical practice, as the rich description, based on both local contexts and individual subjective experiences can be employed to generate process and outcome-based knowledge of programming (Silverstein et al., 2006). Qualitative inquiry can resemble clinical practice and be particularly relevant for practitioners, due to the shared goals and methodology (Silverstein et al., 2006). The present study focused on clinicians' perceptions of the virtual Social ACES intervention.

Setting, Participants and Inclusion

This study was embedded at CDI and focused on the virtual Social ACES intervention delivered during the public health restrictions imposed for COVID-19. The clinical team members were included as participants in this study. Through emails, I invited nine clinicians to participate (see Table 1) and all of them consented to take part in a semi-structured interview (see Appendix B and D). In keeping with Interpretative Phenomenological Analysis (IPA) (see Data Analysis Plan), the participants were selected purposively, as they provided access to perspectives on the adaptation of virtual mental health services for children with LDMH (Greene, 2007; Greene et al., 1989; Schoonenboom et al., 2018; Smith & Shinebourne, 2012). I recruited virtual Social ACES clinicians with diverse backgrounds (i.e., social workers, clinical psychology doctoral students) and levels of experience with virtual programming (e.g., number of groups led, length of time on the virtual Social ACES team).

To ensure that clinicians were completely informed about the study, participants were able to email me to schedule a research consultation session by phone or video (see Appendix D). During these calls, I read the study information, explained it, and/or clarified any questions pertaining to the consent form and study.

Data Collection and Measurement

Qualitative data collection comprised audio-visual recorded semi-structured interviews with clinicians. The interviews were recorded via Zoom, a Health Insurance Portability and Accountability Act (HIPAA) compliant virtual platform (Johnson et al., 2007; Lobe et al., 2020). Semi-structured interviews, which offer rich, detailed first person accounts of experiences and phenomena, are the most common method of data collection in qualitative research. Semi-structured interviews provided a framework to record and assess CDI practices and standards in delivering virtual services for the Social ACES intervention. In line with the recommendations set out by Smith & Nizza (2021) in *Essentials of Interpretative Phenomenological Analysis*, the semi-structured interview guide for the current study included broad and open-ended questions with wording that reduced assumptions (see Appendix B) to understand clinicians' experiences**.** The interviews with clinicians were 60 to 120 minutes in duration, and I conducted these interviews between May to June 2022.

Data Analysis Plan

All qualitative data were analyzed using IPA (see IPA section below). Qualitative data were obtained from the recorded one-on-one semi-structured interviews with clinical team members. The qualitative interview data were coded and categorized by the principal investigator and a third of the data were coded and categorized by an independent coder for reliability. The interviews were numbered and the interviews that were coded and categorized by the

independent coder were randomly selected using a random number generator. Data were analysed for emerging themes related to clinicians' perceptions of the process of pivoting from in-person services to delivery of a virtual adaptation.

Interpretative Phenomenological Analysis

Individual clinician voices were analyzed using the experiential approach of IPA. Below I outline the reasons for why IPA was selected amongst the many qualitative approaches. Unlike other qualitative methods, IPA is particularly useful for considering complex, ambiguous and emotionally laden topics (Smith & Osborn, 2015) and offers detailed accounts of individual participants lived experience. At the same time, IPA allows researchers to consider patterns of similarity and differences across individuals and has flexible guidelines allowing researchers to adapt study analyses in accordance with their aims (Smith & Nizza, 2021). Uniquely and specifically, IPA benefits from three theoretical underpinnings (i.e., phenomenology, hermeneutics, ideography) that influence researchers to a) gather detailed first-person subjective accounts of specific phenomenon through in-depth interviewing (phenomenology), b) emphasize meaning making of participants and understanding how they make sense of their experience (hermeneutics), and c) analyze individual experiences separately before considering patterns (ideography) (Smith & Nizza, 2021). Thereby, IPA was deemed particularly well suited for this study, as it provided a deeper understanding of the meaning that experiences held for clinicians, in a study that sought out to understand their experiences during an unprecedented period with complex demands and increased uncertainty.

Analysis in IPA is an iterative and multi-faceted process that has four distinct stages. Throughout this iterative IPA process and to maintain the integrity of participants' voices and experiences, I moved back and forth between the stages of the analysis to ensure that the

integrity was upheld (Smith & Eatough, 2006). In the first stage of analysis, the independent coder and I immersed ourselves in the semi-structured interview data and provided exploratory comments (e.g., content, language, context, initial interpretations) (Smith & Shinebourne, 2012). In the second stage, the coder and I independently transformed our initial notes into emerging themes, through which we aimed to frame the emerging themes into more concise and higher levels of psychological abstraction. This process was iterative in that we considered the whole in relation to the parts and vice-versa (Smith & Shinebourne, 2012). Thirdly, we collaborated to consider connections between developing themes, clustering based on similarities, and began to formulate labels. In the fourth stage, as an outcome of the iterative process, we created a graphic table with the themes and subthemes. Lastly, based on the raw data and emergent themes, I have written up a narrative account of the thematic qualitative findings (see Themes and Subthemes below). In this account, each theme was introduced, illustrated through participants extracts (retaining the clinicians' voices and experience), and followed by interpretive comments to generate new insights.

Trustworthiness of the Semi-Structured Interview Findings

The defensibility of the findings in the current study were validated – shown to be plausible, credible, and trustworthy – by utilizing several strategies that maximize research validity (Johnson & Christensen, 2017). Low inference descriptors that mirror clinicians' voices as closely as possible (e.g., direct quotations) were used. A reflexive stance was taken to reduce bias and continue to view research and interpretation as an evolving process (Johnson & Christensen, 2017).

I interviewed diverse clinical staff involved in the virtual program delivery, to acquire differing perspectives. In this way, I utilized triangulation to cross-check information and

conclusions. I assumed a “researcher-as-detective” approach and considered many alternative explanations for the findings by using the validation approaches above (Johnson & Christensen, 2017).

Agreement among the independent coder (inter-rater reliability) was assessed. The coder and I worked collaboratively, beginning with learning and training by following the Smith & Nizza (2021) *Essentials of Interpretative Phenomenological Analysis* step-by-step guide to IPA. To assess interrater reliability, the second coder analyzed 55.56% of the qualitative data (i.e., five clinicians) (Smith & Nizza, 2021). The coder and I worked in parallel, meeting as often as one to four times a month to trouble shoot, provide clarity, and confirm proper data analysis. Coding was done independently until the coder, and I had formulated subthemes. Interrater reliability was assessed at the general theme level (84.67% agreement) and at the subtheme level (79.86% agreement). Differences were resolved through open conversation and consensus.

Results

Sample Characteristics

During the interviews, clinicians reflected on their experiences with the virtual adaptation and facilitation of Social ACES. Table 1 presents information on the nine clinicians who were interviewed with an average age of approximately 32 years (range: 28 – 41). Eight of these clinicians identified as female (89%) and seven of them were Caucasian (78%). Six clinicians were licensed social workers and three were psychology trainees.

Table 1:

Clinician Demographics

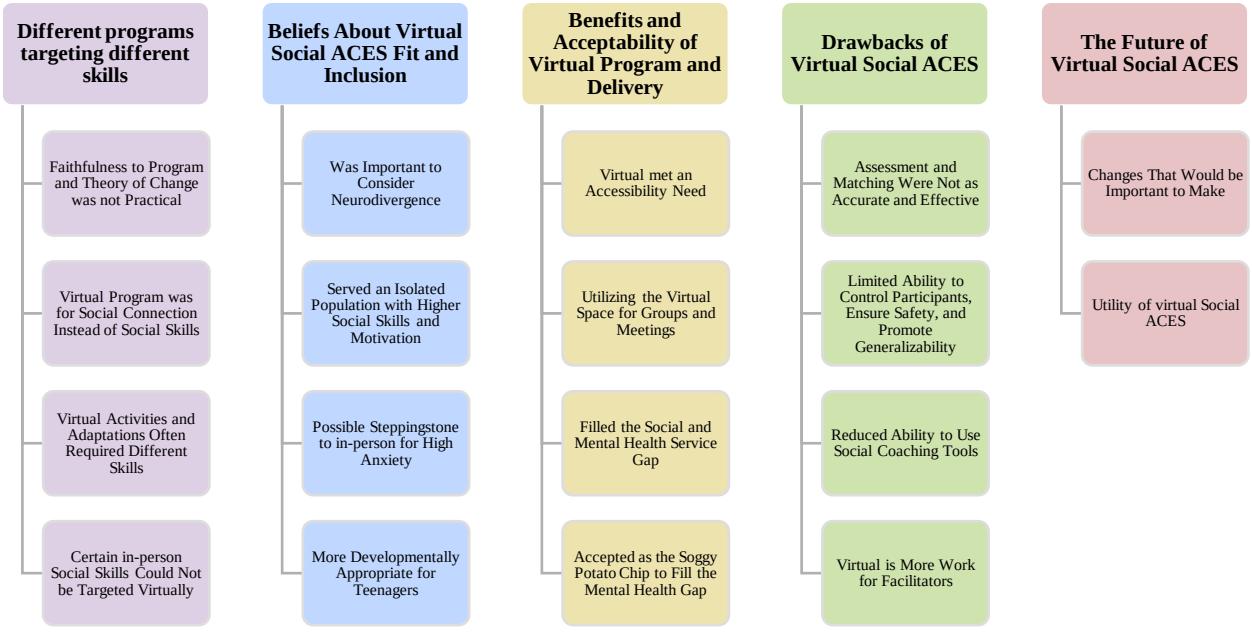
Clinician	Pseudonym	Profession
1	Rachelle	Psychology Trainee
2	Kristie	Social Worker
3	Max	Psychology Trainee
4	Cate	Social Worker
5	Sherley	Social Worker
6	Elen	Social Worker
7	Maria	Social Worker
8	Susanna	Social Worker
9	Svetlana	Psychology Trainee

Themes and Subthemes

Figure 2 presents the themes and subthemes resulting from the IPA of semi-structured interviews with nine clinicians. Themes and subthemes are interrelated and not distinct or independent of each other.

Figure 2:

Themes and Subthemes



1. Different Program Targeting Different Skills

The first theme that emerged was clinicians' experience of offering a different program than the in-person program.

1.1 Faithfulness to Program and Theory of Change was not Practical

The clinicians believed that CDI staff made a strong effort to stay faithful to the structure and function of the Social ACES intervention and theory of change (see Appendix A) when adapting. For example, Maria shared that "…the idea of constantly formulating and reformulating. And being clear on figuring out what is going on for this kid that's impacting their social competence" was an integral aspect of the program that stayed consistent.

Despite the effort to maintain the structure and content of the program, clinicians experienced practical limitations. Maria shared that they attempted to accurately match and target skills effectively, while being "…faithful to the model of ACES. And it may not have been as

effective or as close because it's a bit harder to do that". Clinicians' understanding was that the virtual adaptation of Social ACES could never be offered as an equal alterative to the original program because it was not possible to deliver the program in its fullness. Elen commented:

> ...the part that isn't well received is the idea that it needs to be the same…I don't know if that was completely understood by senior management…you can't offer the same thing. Not to say that there's not a place or utility for virtual work, because I think there definitely is. But you just have to make it two separate programs.

That said, most clinicians understood that the driver of virtual programming was to reduce isolation and loneliness for the youth, with little prioritization or consideration of any other fidelity pieces. Susanna expressed her belief that the priority during the pandemic was to ensure delivery of services: "We had a lot of kids waiting for a long time, so we didn't want them to keep waiting and obviously we wanted them to get something from our services". In addition, Sherley shared her belief that delivering services was essential:

> The initial need that was identified was kids are just so alone, they need some form of connection. I think initially we weren't even thinking Social ACES online, we were just thinking some kind of peer support connection. Something is better than nothing…And there was a big recognition that we're going for something. We were not going to let perfect be the enemy of the good, if that makes sense.

Elen perceived the virtual Social ACES assessment and matching process to be less rigorous and group matching was driven more by demand: "They were just left over from this pool of kids who we want to deliver services…almost out of guilt". As a trainee, Max felt that he was less involved with the pieces around theoretical underpinnings and instead was more involved in running groups and supporting in the "…brainstorming activities that made sense

online…". This is further evidence of the clinicians' belief that providing enjoyable services was the goal, independent of fidelity. Rachelle also shared "…towards the end we were going stagnant in terms of creativity… everyone found it comfortable…we tended to fall back on…a few games".

Most clinicians believed that implementation fidelity was not possible due to several practical reasons. Clinicians pointed to the lack of a program model or protocol to adhere to as a major barrier to implementation fidelity. Rachelle stated, "Not once in any Social ACES meeting did we ever go back to, is this part of the treatment protocol?". Cate questioned the lack of a virtual manual or discussion of a digital manual to adhere to, "there is not a scrap in it [the manual] about digital, right?". The challenge for clinicians was that they perceived that the core Social ACES was a flexible program and thereby antithetical to a program that could adhere to a structured protocol and lend itself to implementation fidelity.

Most clinicians believed that there was an attempt to follow the Social ACES theory of change. Cate's perspective was that virtual Social ACES met a "core piece…of the theory of change" by "finding out where a kid's gap is" and working on it, noting that "we don't actually have enough research [on Social ACES theory of change] to know definitively". Although there was a belief that some aspects of the theory of change remained possible in a virtual space (e.g., engaging with others, getting direct feedback in the moment), clinicians recognized that many of these pieces were notably different, and that other aspects of in-person ACES were impossible due to the limitations of a virtual space. For example, clinicians expressed that there was an attempt to foster similar "waiting room" and "side conversations" at the beginning and end of group (e.g., virtual lobby), but there were many limitations of the virtual adaptation, which did not facilitate the manifestation of these opportunities. Maria shared that "we definitely were

thinking about ACES theory of change…that it is very experiential." It is through the act of engaging with others and getting direct feedback from the group in the moment…".

Clinicians, such as Sherley, who were "involved in the development" of the adaptation believed that while theory of change and fidelity "got more important as the rounds went on", it was only "very loosely referenced" initially. The clinicians recognized that the different structure required in the virtual space changed the environment (e.g., social norms) and, therefore, the range of skills (e.g., social fluency) that could be worked on with the restricted environmental cues. Sherley described this limitation:

> ...really prescriptive, like here's what you do, and we would even have visual steps of conversation and the different options. I don't know that it was great for understanding the environment or the social fluency piece. I think when looking at the theory of change, even a lot of the kind of social norms in a group weren't the same in conversation. The kind of pauses and even what you're doing with your body language, there were some differences.

1.2 Virtual Program was for Social Connection Instead of Social Skills

This subordinate theme reflected how clinicians perceived the virtual program adaptation as meeting different client needs during the pandemic, with Sherley sharing, "Our intention was initially just belonging and connection. Everything else was, if we can achieve some of the same stuff great but it wasn't the focus". Svetlana also noted: "…I think kids' opportunities for recreation and activity were really decreased during the pandemic...So just having an opportunity for socializing, being around people, playing games…the groups are therapeutic, but also leisure recreation more than when they're in-person".

Further, clinicians shared their rational for why the priority shifted from social skills building to providing social connection for most children and adolescents. The clinicians understood the shift in youths' social needs as being a response to their decreased daily social experiences and increased isolation during the pandemic. Therefore, there was a need for the programming to fill these social and recreational gaps, arising from the pandemic restrictions. Maria shared that the virtual program was able to offer "an enjoyable social experience that allowed them to have a bit of social interaction…to maintain some social skill". Similarly, Elen shared that the virtual program was restorative:

> …there was quite a bit of pure isolation during the pandemic. Another rationale to provide this service was, it's an opportunity to connect to other peers…in this time and space where it's really hard, why deprive them…it became just not recreational, but therapeutic recreational…because of the state of the world is so sucky right now. This is a good opportunity and a safe space for an experience that they could bank.

Although it was not possible to target gaining new social skills directly in the adaptation, clinicians believed that this intervention helped preserve past social wins and skills and reduced the potential for deprivation. Cate shared her realization:

> …my worry at the time was how are we going to [provide Social ACES]…it was through a conversation with a colleague actually, that I just chilled out…What he had realized for young warriors and MMA [put name of program here] was that he needed to stop comparing what could be offered virtually to what could be offered in-person and start comparing what we could offer virtually now compared to what kids were actually getting right now.

1.3 Virtual Activities and Adaptations Often Required Different Skills

Skills required to complete online adaptations of in-person Social ACES activities often differed from in-person services. Clinicians shared that many activities targeted different skills than expected, and certain virtual adaptations were not engaging. For example, Maria noted:

> …sometimes we try out a game and think you're targeting one thing, but then actually you realize that there were some other skills that were needed for kids to be successful. So, you end up targeting other social skills than you expected, or the kids did not find it engaging and didn't enjoy it. And so then it wasn't really effective because they didn't want to learn the skill because they didn't want to play the game anyway.

Clinicians also expressed difficulties with activities that required subtly nuanced teaching due to the need for clinicians to be more didactic and prescriptive about skills. As a result, the clinicians perceived differences between what could be taught and worked on virtually. Sherley explained:

> We would do breakout rooms and say what's a great follow-up question? Really prescriptive and we would even have a visual of the steps of conversation and the different options. I don't know that it was great for understanding the environment or the social fluency piece…the pauses and…what you're doing with your body language. we can't so much target understanding the environment or not as effectively.

1.4 Certain in-person Social Skills Could not be Targeted Virtually

Clinicians believed that virtual programming needed to be more structured and resulted in certain social skills not being promoted in the virtual space. For example, Sherley shared that many of the typical social skills goals of LDMH clients which in-person ACES targets were not possible virtually:

> ...a lot of our kids, their social competence goals are around collaboration and teamwork and being cooperative and... collaboration was tough to achieve on ACES because it…had to be so structured with turn taking and conversations...organic working together without direct structure didn't really happen…we could really target that.

The virtual adaptation was perceived as only being able to target a portion of social skills, which left other social skill issues unaddressed. Kristie explained that she did not "…think [virtual] worked for all the kids...". She believed that "…if Social ACES is like a big circle, virtual was…a bite out of that circle". Similarly, Elen also believed that virtual programming often required a different level of intervention that would not have been possible in-person (e.g., muting youth). Elen reflected that:

> …the skills that it requires for you to manage a conversation in-person, for example, interrupting, if that's a goal…you can really address that in a meaningful way in-person. But when it's virtual, you kind of end up muting, unmuting. Or you can say, hey, we're going to mute people. You're not addressing the impulse so much because they can still speak if muted, but nobody's hearing them. It's a different experience.

Due to the necessity for greater structure of sessions and increase recreation, the clinicians believed that virtual programming offered reduced opportunity to work on certain social goals. Max commented on this limitation: "We didn't have the opportunity to really practice conflict resolution because the structure led to more play. They weren't arguing and we didn't have a chance to really model dealing with big feelings, like anger in an argument."

2. Beliefs About Virtual Social ACES Fit and Inclusion

Clinicians described the youth and clinicians for whom the virtual Social ACES intervention was suited for, and for whom it was not.

2.1 Was Important to Consider Neurodivergence

Despite some heterogeneity between clinicians' perceptions of which clinical presentation the virtual adaptation suited, there was a consensus that the program was not well suited for youth with LDs and comorbid ASD and/or ADHD presentations. Clinicians expressed several insights as to why virtual Social ACES did not suit autistic youth. Maria believed virtual Social ACES wasn't beneficial for the population because: "he just didn't really care about having more social connections … it wasn't a good fit for him, but there wasn't a good fit for him because he didn't have social goals".

Other clinicians, such as Rachelle, believed that the autistic clients would have benefitted from specific social interventions instead of a heterogenous skills group:

> I think the autistic client requires a more specified type of social intervention … and to put an autistic client in a group with non-autistic people also working on social skills isn't fair to the autistic individual or to the other group members, because of the nature of their social difficulties ... goals just didn't align with the other kids and the behaviour … it just felt off sometimes, particularly when it came to facial expressions and … monitoring their own facial expressions on a camera.

Clinicians also believed that the virtual adaptation was not particularly well suited for youth with ADHD. Clinicians expressed difficulties with the reduced ability to redirect attention and youths' medications wearing off during session, leading to disengagement, distraction, and distracting others, as well as impacting the way they led group, with Svetlana sharing:

> If you've already been on a screen all day for virtual learning, attending for one more hour could be hard. Some of those kids would get up and leave the room and take a long time to come back, probably because they got distracted along the way… you have a lot

> less control if someone is looking at their phone or turns on the TV's on or something… could be highly distracting for kids who are prone to distraction.

Other clinicians like Sherley noted that youth could be more easily redirected in-person, whereas when virtual "there was more calling them back ...it was a bit trickier". Rachelle believed that "highly impulsive kids were more or less ruled out because of our inability to physically contain them in a room". In the same vein, clinicians such as Max noted that: "most of the movement games…don't work as well when you don't have the ability to control the physical space in the room".

Rachelle did not "...think there's a diagnostic profile that works well. But I think I can give you traits". For example, Kristie generally agreed that "virtual would be a much better fit… for kids with stronger verbal skills", due to the majority of activities available online being more discussion based and verbally loaded in nature. There was also a general perception that strong processing speed capacities were beneficial for virtual participation, due to the increased potential for uncertainty about whether a lag was due to technology or processing difficulties. For example, Kristie shared that "...a mismatch between processing speed and having that long delay virtually feels a bit more painful than in-person". In addition, Susanna shared that processing speed is also more important online to "follow instructions" and keep up to speed with games.

Clinicians shared that the virtual adaptation was well suited to help youth build reading fluency for individuals with phonological processing impairments. Max shared:

> The LD population that had phonological processing impairment did really well, I found, because they had essentially a multimodal engagement where they could pick the area,

they felt most comfortable and then bypass the one they didn't like. And it was really easy to use text to speech if we wanted to, like an accommodation in the classroom.

Clinicians perceived that the virtual adaptation was not as effective for youth for whom emotion regulation was a primary concern. For example, Elen expressed that: "...virtual wasn't sort of poking enough…when you get in-person you could see they're eye rolls or…the escalation way better than you can, you can't really catch that much escalation virtually or I can't".

2.2 Served an Isolated Population With Higher Social Skills and Motivation

Clinicians explained that during the pandemic they served a population with higher social functioning capabilities. Cate perceived this population as a:

> Group of kids that normally don't need ACES, that really needed us…the kids that normally can get their social needs met through Girl Guides…kids who…outside the pandemic function well enough…that demographic we did well by.

Cate further expressed and conceptualized this emerging population based on:

> …need that bloomed during the pandemic … [because] all of the semi structured social spaces disappeared. So you had very structured spaces, like doing school, and then you had completely unstructured…meeting up with kids and playing Fortnite…a lot of our kids who've been getting their social needs met through going their church or mosque… our kids who weren't skilled enough to access the completely informal ended up being really isolated…we were able to offer something structured to fill that need that in the non-pandemic world is probably filled as well or better by your church youth group.

Clinicians were concerned that the virtual adaptation demanded a higher level of youth buy-in and self-motivation, as well as clearer goals. Maria shared:

> …you're trying to have a synchronous interaction, but it's not and leads to some kids sort of disengaging because…they can't participate as meaningfully…there's definitely a higher expectation on the kid to be able to bring themselves to group and participate… actively. Whereas in-person you can do a lot more to get the engagement or you can work with a lower level of engagement because they're physically in the room.

The population that clinicians perceived to have served during the pandemic contrasted with the typical population that the in-person ACES served, which comprised youth with significant social deficits and regulation difficulties for their age. Clinicians such as Sherley shared that they "didn't feel… virtual ACES was effective for low regulation kiddos. So that cut out a pretty big proportion of our kids". Cate believed that the typical Social ACES population was not craving social interaction the way those with higher functioning were, because "...a lot of them...weren't craving social because it had never been a very positive thing…there's no pressure to hang out with friends and I can play video games…they were kind of happy with that."

2.3 Possible Steppingstone to in-person for High Anxiety

Clinicians shared their belief that the virtual nature of the intervention had real potential to act as a natural and generalizable exposure for anxious youth. Cate shared, "…I had a couple anxious little beans who did great. Virtual ACES was real life genuine treatment for them". Rachelle recognized a benefit of virtual programming as a gradual exposure for youth with severe social anxiety: "…I think it depended on the severity of the social anxiety...almost like a sweet spot where it was really good. And we could come back week after week with the same people and see growth in social anxiety".

In contrast to the virtual group, clinicians believed that the in-person program would not have been as accessible for higher anxiety populations, with Max sharing: “I had some really anxious teens that I don't think would have shown up in-person that showed up to virtual because it was less of a social risk, it was kind of like an effective scaling”. Elen described additional benefits:

> The chat function was great for…kids who unmuting and speaking was too much, but they still wanted to be engaged. So being able to speak with the chat was a safe, non-threatening way to stay engaged. And when you're able to feel engaged, you're way more likely to next time unmute for a second because it gives you that confidence…Even though the whole time they were muted and had their video off it was a great experience to then for the next round have them keep their cameras on sometimes.

2.4 More Developmentally Appropriate for Teenagers

Clinicians perceived the virtual adaptation as more fitting and effective for teenagers than for younger children. Elen expressed how for teens: “…from what I would hear there was less of an adjustment to the virtual space…that was predominantly how they communicated with each other”. Maria shared her perspective that virtual Social ACES was much more developmentally appropriate for teens and suited for verbal and socially inclined activities and that: “…different group when they're 13 and older. You can have discussion about social topics and friendship issues. You can create a bit of conflict because…you're more likely to get participation in the debrief. Activities can be more verbal”. Susanna shared: “…it felt like it was more of a time to talk about their mental health together and to normalise the experience…in some groups, especially the older. It had more of a flavour of a support group sometimes.”

Cate perceived the peer support aspects of these teen groups as being the most therapeutically meaningful: “so the magical clinical moments for them were 100% peer support”. Additionally, clinicians perceived the virtual adaptation, as it provided a space for teens to “speak the unspoken”. Cate explained:

> …I think what worked really well for them is that they felt listened to by the adults in the group…we'd realize just how desperate they were to talk about their experience of COVID. And at this point, most of the adults were coping by not talking about.

Clinicians did not perceive the virtual adaptation as being as developmentally appropriate for young children. Sherley shared that “…the 30% that resented it was from the assessment groups I had to do with younger kids, where I felt it wasn't a good fit”. Maria explained:

> Younger kids connect with each other much more through physical play…kind of compounds. You can't poke another person. There's a certain amount of physical play with younger kids…socially acceptable and actually the only way that they connect...developmentally.

Similarly, clinicians expressed that many of the developmentally appropriate games and activities that clinicians would use to target children’s social skills, such as initiating play, could not be simulated in the virtual space.

3. Benefits and Acceptability of the Virtual Program and Delivery

Clinicians spoke about their beliefs about the benefits of the virtual adaptation of the Social ACES intervention.

3.1 Virtual met an Accessibility Need

Clinicians such as Maria shared their perception that “the barrier to actually attending is a little bit lower”, with virtual Social ACES helping to increase access for families “during

COVID… [when] there weren't in-person things that came up…there were lots of things that weren't happening". The virtual adaptation was also perceived to increase accessibility for families for whom transportation, health, or transitions were daunting or difficult. Elen explained:

> …every time I think…you'd be really good for virtual…comes down to again accessibility…for a family who lives far away or doesn't have easier methods of transportation, being able to get here on time...being able to have the option, whereas if virtual was not offered they wouldn't even have the option because they didn't even make it. Or if there is a health issue or anything around the world of accessibility.

Sherley noted increased accessibility and attendance due to the reduced demand on caregivers:

> Attendance was pretty good which was not often the case in-person…Parents didn't have to deliver their kids there…just get their kids set up on a computer. Teens got themselves set up. Snow days and other things weren't a thing. We would sometimes have a kid be 5 minutes late…whereas if it was in-person, they would have missed the whole thing.

Elen believed that something was better than nothing to stop the cycle of failure:

> The whole piece is that you have a lot of perceived or actual failures around…social interactions. And then because you have either perceived failures or actual failures [youth] are less likely to engage…it's just this cycle that repeats. So, if you want to interrupt that cycle…we say it's all about just getting that invite to play. It's not about changing the competence. It's about gaining or increasing access to exposure. The virtual world or the virtual program could be an opportunity to be exposed to just other kids or in a group setting, then I think having that is better than having nothing.

Svetlana also shared that the virtual adaptation provided access to continuity of care:

> It gave us some sort of continuity, which was nice in a time where everything changed … So, we didn't miss any session of ACES. So that was good for staff to have that continuity and not feel there's a gap.

3.2 Utilizing the Virtual Space for Groups and Meetings

When asked about their experience using the virtual platform, Max shared that the platform, "…gets a bad rap…[but] I didn't mind it…" and Kristie expressed that they "found it their preferred platform. I found it from my end, easy to use. Breakout rooms, polls, games, screen sharing, all easy and straightforward". Max shared the importance of clinical meetings for practicing and group troubleshooting:

> …if you're running an online group. It's great to have an online meeting…if someone had an idea for an activity…we would run through it at the end of a set, a planning session…it was really helpful to do that online.

Clinicians appreciated what the team meetings offered in terms providing resources, support, and collaboration. Maria expressed an appreciation for "connection with people" and Rachelle for the ability to "share about my group in the context of a supervisor who then could offer feedback as to whether or not the group was progressing well or not". In addition, Svetlana shared appreciation for the support:

> The LDMH program is really good at…supporting staff. Those planning meetings were great, and they were really flexible. We would talk about how groups went and practice activities, but if we needed something else or wanted to talk about a specific child and challenges that they were having, we could use that time to get feedback from the team.

Max shared that virtual meetings were also convenient and removed a lot of the issues around in-person issues such as location and commute: “Clinical meetings online…was the convenience for finding times to meet because if some of us are …in, the other building, you remove a lot of obstacles”.

3.3 Filled the Social and Mental Health Service Gap

Sherley expressed their concerns at the beginning of the pandemic about “kids’ mood and anxiety level, and if it was worsening”. Rachelle wondered about the adequate provision of mental health treatment in the context of a traditional social skills group:

> …One of the major questions that I had about doing a virtual social group is the very real fact that these kids were at CDI for mental health treatment. So, what do we do in the context of a social group of kids who are talking about symptoms of anxiety or depression and how do we find the right balance between adequately addressing mental health concerns while really staying in the focus of the group, which is social skills?

Cate shared her concern that “the ACES kids … [were] just going to get so … much more behind…and is that going to make all the problems that brought them into ACES that much worse. That sort of logic made us say, OK, we need to offer something”. Cate also expressed concern regarding Social ACES youth presenting with mental health related symptoms: “these were kids who were not connecting with anyone outside of…ACES and some of them were getting really irritable and depressive symptoms” due to isolation and uncertainty and shared her belief in the importance for “having a space to be with other teens and some prompts to be vulnerable” at the time. She shared her concern regarding the play date cycle degradation:

> This idea of the play date cycle: if you're socially skilled you get invited to have play dates and then you have more time to practice your skills. Your skills get better, and so

> you get invited for more play dates. That's sort of one of our theories for where things go wrong for our ACES kids… There's a window in which …you're not skilled enough to be getting the play dates…and then your opportunity for practicing social skills compared to your peers really bottoms out… So, a real concern [arises] as these kids are saying they're lonely, they're not connecting, they don't know how to connect. Concerns about the mental health impacts of loneliness, but also, if our kids now go however long, without social contact, is that going to drive that?

In this vein, Sherley expressed her concerns for a population that is already delayed being further delayed:

> My thought process was all these kids that desperately need this. Part of the mechanisms of change is that practice piece of getting that interaction and direct feedback. It felt like these kids are going to be at such a big disadvantage having no practice. And that's one of the primary functions it serves. And then realizing shit we're not going to be able to offer something for so long.

Cate believed that virtual Social ACES helped to fill a vital social and mental health gap:

> I feel really good that we at CDI weren't part of that trend…I think about how let down the kids were going to be by so many of the social supports that normally support kids. These supports just disappeared, some of which I don't even know if are back yet...I'm proud that we filled that gap. And I wish we'd gotten it together to fill it a little bit faster.

3.4 Accepted as the Soggy Potato Chip to Fill the Mental Health Gap

Clinicians expressed the belief that most of the youth with LDMH, caregivers and clinicians accepted the program. Susanna shared that "the dropout…was very low. It's a sign that it was going well". Sherley believed that teens in particular were accepting of group:

> The kids were really happy to be there to just talk, be heard and see another human their age. The first group I did was teens, so in terms of just talking about common interests, it worked well. In a weird way, it was actually nice and maybe even more effective in some ways for the social skills piece because you had to turn take online.

Susanna expressed their belief that ACES was a "break from the virtual programming that we're getting at virtual schooling." Sherley believed that clients accepted it because it met their "fun bubble. I don't think we got the full belonging bubble, but I do think that we achieved 40% of that". Cate believed that the group was accepted as the next best option for kids:

> I think it was a little bit of a soggy potato chip…The idea is that if you have a bowl of fresh, delicious crispy potato chips and a bowl of soggy potato chips, you are definitely going to go for the crispy potato chips. But if the crispy potato chips are gone and all that's there is a couple of soggy potato chips, you find yourself eating the soggy potato chips…I think virtual was the soggy potato chip

When asked about the program acceptability, Susanna shared that she had her "questions and fears at the beginning" but that the program was "accepted for the most part… it was nice to be with the kids…have them together…to try something new together and…see that they were they were responding well to it". Susanna shared that "every staff that I worked with seemed to be pretty accepting of the fact that we're just doing services virtually and that has pros and cons". Similarly, Rachelle shared that "Week after week after week, people were coming up with creative ideas, were supporting each other and sharing successes, sharing wins…staff felt proud of the work to create and delivering the best possible service that they could."

Caregivers largely accepted the program, with Maria sharing that they "were happy that there was something", and Susanna saying that parents were "…desperate and they want the kid

to be doing something and…we feel that pressure too… of the parent". That said, Maria expressed that: "[parents] really valued in-person …was meaningful to their kid and important for their kid's mental health and…virtual just could not provide everything that…in-person could.". Sherley estimated that "85% of parents were like, so when's in-person coming back? ... Wouldn't this go better if they were in-person?" and "that caregivers said they really wanted in-person…But then when we switched in-person, people sucked at showing up…for understandable COVID fears". Sherley shared that particularly for youth with notable dysregulation issues, parents would be requesting something more:

> ... I don't think this is helping him in the way he needs. I'm saying he because a lot of my low regulation kids were he's…that's great that he's playing online, but when is he going to be in-person and have to lose and get to take some deep breaths with someone.

4. Drawbacks of Virtual Social ACES

Clinicians identified the drawbacks of the virtual adaptation of the Social ACES intervention.

4.1 Assessment and Matching were not as Accurate and Effective

Clinicians reported that the experience of virtual assessment was "kind of stressful" due to the lack of clinician control, reduced social information, and inability to engage kids and technical issues, with many kids not turning "…their cameras on…there was a lot of kids that came that didn't want to be there…we couldn't really engage them in the same way". Clinicians also experienced virtual adaptation as limited compared to the in-person ACES group. Susanna expressed that "not having an observer observing" in the virtual assessment sessions, due to not wanting "the kids to get distracted by a little square virtually" made it "hard for assessment".

Svetlana also noted that youth would often present “really differently virtually than they would in-person” with different levels and types of social needs virtually than in-person. Cate felt that she was “flying blind”, sharing that any data during the pandemic was old because things were changing so rapidly:

> Right at the beginning of ACES we did surveys to see what's the appetite [for virtual Social ACES]? But…by the time the data has come in and it's been synthesized…it's probably changed. And these people might be giving different answers now than they did when they filled it out.

Max also noted “the lack of physical proximity…the ways that you're doing introductions and getting to know each and ways you pass activities and address other people – even if seeing a decent portion of the person's face – are different too”. As a result, it took “a bit longer to get to know them [youth] and understand their needs”, further impacting the matching accuracy. Svetlana added.

> Maybe a participant has a whole bunch of regulation and social fluency, but their standing this close to the other person [helping to clarify] why kids don’t want to talk to them. But you can't really pick up on those pieces [virtually]… So, I would say if social skills and emotional regulation and social fluency are all components of competence, the social skills piece was a bit lost.

Susanna shared that certain overt behaviours indicated difficulties with engagement virtually, and that there were adaptive problem-solving techniques that were possible:

> If they were using the camera or not…or the camera was on, but they were not in view… [this helped to clarify] OK, maybe group is not working. We [would] check in with the parents or have a meeting one-on-one with the kid…problem solve from there.

That said, Kristie shared that she found the reduced ability to subtly build rapport and reorient participants:

> So much harder to have eye contact or little looks to each other to check in on each other. Specifically, if you're asking open-ended questions, clients might be more likely just to be silent instead of kind of having the group pressure dynamics versus in-person.

Max shared that youth could also easily not participate:

> What do you do if you're overwhelmed…sometimes it was too easy to not participate if you didn't want to. There was maybe a little bit less social pressure…they had too many ways to avoid, and that was a con that would have been better for in-person.

Svetlana expressed the belief that "it was hard to get a sense of them from that first assessment group…and then imagining how that will play out in a virtual group" and she "found it a bit hard to really know and really predict what would be a good combination of kids". Svetlana shared what clinicians relied on:

> Knowing about age group, population and general interest is more important…Because [there is] less context to pull from the more that you can understand about your age group and population and what their general interests are going to be [the better]. I think that's more important for virtual than for in-person. Just in terms of content and things you're discussing, there's less about context that you can draw on.

Cate shared: "we never really got great at the negotiation of who's speaking when…little dance that happens in-person…I think in-person that with socially skillful people, that takes a second. Online with the same group of people, that can take more like 10 to 20 seconds". Max also shared that the limited visual cues and frame also limited assessment:

> The body cues, the visual frame you have the ability to see the whole group all in the same place. The biggest one is the ability to multitask. If a kid pulls out their phone in the middle of an in-person group, you'll see easily.

Elen saw virtual assessment as less targeted due to increased barriers:

> It's harder to spend that much time assessing or matching because there's a lot of other considerations you have to make like schedules…and people just being burnt out from doing things virtually and not wanting to attend something that they probably would have attended. So, a lot of other barriers you have to keep in mind.

Elen also expressed her belief that matching, and assessment were not as effective, due to not having the appropriate assessment tools; "if we had appropriate assessment, we would have been able to say…you need individual work before group program". Susanna believed that different formulation and criteria had to be considered: "If the kids were not emotionally regulated then are they going to be able to be independent in their home? We're not going to be able to help them regulate, do they become dysregulated? So, we had to get selective of who would be in our in our group."

4.2 Limited Ability to Control Youth, Ensure Safety, and Promote Generalizability

Clinicians expressed concerns regarding meeting privacy, confidentiality, safety, and access. Rachelle experienced this as "stressful" and had many questions and concerns:

> I had a lot of questions about privacy with the HIPAA technology. What we do when someone's joining a virtual group and ... because of their SES they live in a one-bedroom apartment and someone else that they live with is in the same space as them and is then privileged to what should be a confidential group... But then how do we exclude certain people from group because of their SES and where they live? So, it was always a huge

> concern for me when it came to privacy, sending emails with links and safety concerns if anyone disclosed something remotely risky and then they're in a virtual realm. So, I have no way of knowing where they are [able] to access emergency services. All of those things cross my mind.

Clinicians were concerned about barriers to access for clinicians or families. As Maria explained: "[platform X] in general seems to use more bandwidth for some reason or it seems to have a harder time when families didn't have really generous data plans with their Internet". Svetlana shared that in-person you could "push for more discussion, challenge kids in more and different ways", but clinicians felt that they had a significant reduced amount of control over managing the group. Sherley shared having "some apprehension around being able to actually ensure [emotional safety] in the same way that I can in an in-person group". Creating a safe, trauma-informed, and private space for therapeutic intervention was questioned. Susanna discussed the reduced ability to guarantee that youth were "…in a confidential place and that you know they have privacy and that they're not distracted", and the difficulties with trying to figure out how to "explain that [confidentiality] to a 10-year-old kid". Elen shared that clinicians would avoid addressing more dysregulating goals that would be the focus of in-person ACES, due to concerns around managing individuals and the group:

> Even if we introduce a bit of competition and for that person who really struggles with losing…if they get quite dysregulated, are we able to bring them back and regulate them? Not really. So, we would avoid or feel like it would not be OK to go there.

There was also concern about the generalizability of skills learned in the virtual space to the real world. Rachelle questioned: "How do you transfer skills that you learn in such an artificial context to real-world socialization? Seems very difficult". Maria believed that "kids

might be different online versus in-person and different things might come up in different situations". Elen shared that "so many things [social issues] …are masked in the virtual world" that would otherwise present in-person and that this resulted in some skills not being "able to be addressed" due to the different social norms and expectations in a virtual space, which rendered many of the social issues obsolete.

4.3 Reduced Ability to use Social Coaching Tools

Clinicians were concerned about how the nuanced social coaching would translate, since they had less subtle ways of providing group members with feedback, gathering information by way of body cues or eye contact and how to apply their clinical skills in a new environment. As Elen explained, they: "…can't really talk to someone one-on-one. You can't even make eye contact or use body language ... how would I be able to even use my own clinical skills on a virtual setting?". Lack of control was perceived as a barrier to the level of social skills teaching and feedback that were possible. Maria shared:

> There are a lot more challenges of figuring out nonverbal or subtler ways of giving feedback to kids or helping them to receive the feedback from the group. For those kids who do have a lot of shame and struggle with receiving feedback, it was much more challenging to support them because…they might just turn off their camera or "I need to go to the bathroom" and off they go. And it's actually an emotional avoidance, where in an in-person group you could step outside and, you know, have a chat with them, or give them that space, or help them calm a bit more. It was harder to do that.

Elen shared that it was much easier for youth to disengage and emotionally avoid in the virtual space, "so it almost felt like a lot of the groups became more about offering a restorative experience…the exposure piece is missing, right." In line with this, Svetlana shared that "it's a

lot easier for kids to just not participate if it's virtual…people's tolerance for silence is higher", unlike in-person where "eventually if there's enough silence, if someone's going to say something". This tolerance for silence was also experienced by Rachelle when attempting to simulate the in-person waiting room experience: "…we would let them in and just like dead silent. It was awkward". Cate shared that they didn't have social coaching tools available in the virtual space to reengage students or pull them back, unlike in-person, where "…I can come over and be like, hey and sit next to them for right and pull them back".

While clinicians attempted to simulate social coaching tools virtually, they recognized their limitations. For example, Rachelle shared that "going into a breakout room was extremely obvious and it felt weird and awkward" but "was the only way to have a really private conversation to let them know about social skills". In the virtual context, this was the only alternative to the subtle side conversations or pulling youth outside the room in-person. Cate discussed the limitations of sending a social coaching message through [platform X]: "There's a big chance that that's going to get read as being passive aggressive or scolding…the chat lacks that subtlety". Susanna believed that the chat was used in place of the "most useful social coaching tool", a subtle intervention (e.g., whisper in the ear, sitting beside the youth) that clinicians would do in-person. Cate recognized that the chat didn't perfectly replace the in-person social coaching techniques:

> Anything that was subtle enough to feel subtle and not feel really explicit was also subtle enough to be ignored … So, I could send messages to a kid in the chat and some kids were able to receive that. But most of the time, by the time I typed out all of the context or what I wanted to say, the moment had shifted or then the kid wasn't reading the chat.

Clinicians also found it difficult to use social coaching tools virtually due to the uncertainty about silence and delay and reduced social information to clue the clinicians about the youths' experiences. Cate commented:

> Way before I became a clinical social worker…I was taught that after you ask a question, count to 12 before asking another. Don't save them, let them get awkward...But as you're waiting, you're thinking is my mic off? Did they actually not hear what I said? Am I muted? Is there a lag? Is this slow processing? Are they gone? Are they not paying attention to me at all? Are they doing something else, or they've turned off their camera?

Cate believed that "the most effective tool we have is in-the-moment social coaching" to help youth gain social skills, which was never effectively adapted for the virtual space:

> It would be in gestures, or a pat on the knee and a point to where I want you to attend to, or a hand signal to chill out a little bit and sort of grabbing your attention, giving you information as subtly as possible so that you can do a little bit better….And my worry about virtual is that we never found a way to do social coaching subtly.

Certain behaviours were perceived as more difficult to manage or intervene with virtually and there was uncertainty about the potential negative impact of these behaviours. For example, Sherley shared anxiety surrounding "the risks…some of our kiddos don't always say and do the most socially acceptable things… being in their pajamas or sitting on their bed…having something in the background…going to the washroom and not putting the camera off…". Susanna shared her concern about controlling defiance and disruption and the limited amount of time virtually to debrief and social information to access safety of individual participants:

> Sabotage, not following the expectations that we had set in place. They would be rude, and they would speak over the other kids or just be defiant with us. Like telling us, no,

> I'm not going to do that. You can't make me... It's really hard to manage online and… disruptive to the other kids virtually, and we don't know how the other kids are processing that … We don't have much time online to debrief or … check in with them, or to read them, read their body language to see how they're responding to a kid sort of being rude to everyone.

4.4 Virtual is More Work for Clinicians

Clinicians perceived that the virtual adaptation required a greater level of work. Clinicians spoke of the increased stress in terms of dealing with a novel global event and attempting to create a program without any template to work from. Susanna experienced "a lot of unknowns because we had never done it…there was a lot of uncertainty. We didn't have anyone to learn from because nobody had done it before". Sherley spoke about the steep learning curb that came with learning how to use the technology, "I don't really think we had anyone on our team that knew so we were figuring that out for ourselves". Susanna experienced "more behind the scenes work than you would have for an in-person group or for other programs".

Maria also noted the greater work in teaching caregivers how to use a new platform: "Families were less familiar with it, which meant a learning curve of getting familiar with it, which meant a lot more support needed up front beforehand during". Max shared his experience with preparation, which was: "more front loaded and there was, there was follow-up work as well and the engagement especially for the first half was just to keep everyone coming regularly". Kristie experienced "a lot more, almost like showmanship for the clinicians to get things going". Sherley noted a greater need to "build a relationship quick so that you could tell them they had to put their camera on…to be in control". Cate added that the virtual context "sort of pushed us a little bit more into a didactic teacher role which I think is not the ideal".

Maria felt that there was "… a lot more weight on the clinicians to keep conversations going…even when…trying to work on the conversation skills" than would be expected in-person. In this vein, Cate shared that structure and clear turn taking were necessary even for "fairly socially skillful adults" because without it "people [clinicians] speak over each other and nobody knows what to say" in virtual meetings. Cate explained that there were no virtual social norms in relation to turn taking:

> I think…if we keep doing a hybrid world…and we come back in 10 years we may discover that we've evolved some norms about who speaks when. I think that was even happening at the end of the pandemic…you could use the raise your hand function which means I really need to speak.

5. The Future of Virtual Social ACES

5.1 Changes that would be Important to Make

Reflecting on the virtual program delivery in the past and/or projecting into the future, clinicians identified changes that they would make and processes that they would do differently. Rachelle discussed how she would want to focus more on social skills rather than feeling like she "…always had to do it in this delicate [way]…tiptoe around because I didn't want to make kids feel uncomfortable, but they're there for a reason". Rachelle expressed the belief that instead of making the space a "…a fun place where I come to play games", it may have been better to just be honest about the social skills nature of the group to "normalise it from the get-go", "Instead of…this fancy little dance…the reality is they're there to learn social skills. So, why was I not just calling it out more from the beginning". "Rachelle" also suggested having goal setting reminders each session to help prime youth about their goals during sessions, transferring these goals into written reports and have goal setting sheets.

Elen described planning “in advance”, by “making sure everybody had each other's contact information and knew who was home” and having discussions with parents and youth regarding debrief and safety plan for higher level exposure. Elen also noted that she would have wanted to clarify the ability for confidentiality and safety with caregivers and youth before group started, asking things like “are you able to offer an hour of privacy for the child? Are they able to have 10 minutes after the debrief if needed?”.

Max expressed the importance of mock demonstrations on the same platform as groups before running group, “to be able to directly practice what an activity would look like so that it was more fluent with the kiddos”. Rachelle also stressed the importance about “being really clear what is this going to do for them and what are we actually able to offer…being very clear about what Social ACES is for”, and what it is and is not able to target. Svetlana shared:

> I think it would have been good to collate lessons learned into a handbook that’s for running virtual groups…I think there was so much learned that it could be useful for future practitioners. During moments when you might be stuck it’s nice to have some more structured guidance…I think about the people who created the in-person manual and the in-person program to have their sort of take on it…because not everyone who’s involved in the in-person groups would have been like involved in virtual.

Elen believed that the intervention needed to be assessed continually, saying “…there is a very real need to keep it updated and ensuring it’s still doing what it’s set out to do”. Sherley expressed their belief that they could do a “better job of coming up with the [individual] goals and then coming up with activities instead of knowing what was easy and then trying to make that into something socially meaningful”. Lastly, Cate shared that in an ideal world she would

have recorded sessions to watch with the team as an approach to continual formulation and reformulation of groups:

> In the ideal world if you had a videotape of group, you could… sort of pause at random moments and be like what was your clinical thinking there? The idea would be that there would always be a reason for why you were doing everything.

5.2 Utility of Virtual Social ACES

Most clinicians were uncertain about the utility of virtual Social ACES in the future, clinicians such as Elen were "…curious to see if it will continue in some capacity…maybe in a support group format or something like that". Others believed that virtual Social ACES could still proving useful for individuals with greater anxiety and/or with barriers to accessing the in-person group. Sherley expressed that "it could be a precursor" to in-person ACES, as a lower-level exposure precursor for individuals who required gradual exposure. Cate believed:

> As the appetite for social virtual ACES is drying up in our demographic, should we say goodbye to it as a crazy time during the pandemic? Remember when ACES was virtual? Or should we be figuring out who it is that's being underserved by in-person services and finding ways of using virtual services to support them? Are we missing a moment to make service delivery more just and more accessible?

Clinicians shared that virtual Social ACES appeared to have utility and was of interest for teens, which had not historically been the case at CDI. While the LDMH team planned to keep offering virtual Social ACES for teens after the pandemic, Cate shared that teens were no longer interested or needed this service due to the significant increase in other social opportunities:

> Prior to the pandemic, we didn't serve a lot of teenagers. We would occasionally have a team group…During the sort of height of the pandemic, we had quite a lot of teen groups

> going...And then we were thinking there's a whole bunch of lonely LDMH teens that are able to access virtual that weren't able to access in-person. [We thought we] will keep offering virtual after the pandemic. But what we've found is that the teenagers have disappeared again…They've just gone back into the wild and don't need us. They're going to go be awkward members of the debate team or whatever.

That said, Cate believed that virtual Social ACES is not a sustainable way forward post-lockdown, sharing "I don't think virtual ACES is accepted as a useful way to move forward…post lockdown. I think there's a lot of appetite to move back to in-person both from clients and from clinicians". In the same vein, Kristie shared that virtual was accepted for the specific time and the need for social connection and to combat isolation, saying:

> There was a great need to have some sort of social connection when kids were very isolated. And that seemed to decrease more and more as things are opening up again and there were opportunities for these kids to do things in-person. So, I think it was more a time and a place where it's accepted.

In line with this, clinicians such as Sherley expressed that they felt that there was a place for virtual post-pandemic are "90/10 on it…90% of me thinks in-person is more effective for everyone. About 10%...thinks it really worked for teens and if there was an interest."

Discussion

In the past, systems level barriers have limited the capacity for mental health service providers and community agencies to implement widespread tele-psychology-based services (Simms et al., 2011). These barriers were rapidly reduced with the emergence of the COVID-19 pandemic in 2020, as in-person mental health service delivery was no longer feasible (Frank et al., 2021). During this time, there was an increased demand for social programming and services to address the increased mental health concerns and isolation due to public health measures, including lockdowns and school closures (Power et al., 2020). The need was especially pressing for youth who experienced an upsurge in mental health problems (Bell et al., 2023). Therefore, agencies and clinicians had to grapple with providing continuity of care, reducing isolation, and curbing the increasing mental health problems experienced by youth in Canada and globally (Simms et al., 2011).

The current study explored clinicians' experiences with the process of rapidly pivoting to adapt services, modify practices, adjust delivery, and assess the acceptability and feasibility of virtual Social ACES intervention. To the best of my knowledge, this is the first qualitative study of clinicians' perspectives on adapting and delivering the virtual Social ACES intervention for youth with LDHM during the COVID-19 pandemic. The clinicians' voices have highlighted many considerations for the process of virtual adaptation, perceived strengths and weaknesses of the virtual program, perceived similarities and differences, and feasibility of the virtual adaptation. The discussion below highlights the key findings based on the emergent themes, as well as implications of these findings for the future of mental health service delivery for youth with LDMH.

Strengths and Drawbacks of the Virtual Social ACES

Clinicians in the current study highlighted the vital role that the virtual Social ACES intervention played in filling the significant social and mental health service gap during a period of elevated mental health concerns and social isolation for youth. Clinicians believed that the need to address the increasing youth mental health burden by providing social restorative programming superseded the typical goals of the Social ACES intervention (e.g., improving social skills, concentrated social coaching, conflict resolution). To meet this need, clinicians reported their quick adaptation to and relative comfort with virtual delivery of mental health services. The trend for rapid adaptation has been reported by other services (Goldman et al., 2020; Lattie et al., 2022; Zhou et al., 2020). This transition occurred even though a number of the clinicians had limited or no prior experience delivering virtual programming, nor using the telepsychology-based platform employed by CDI for virtual Social ACES (Goldman et al., 2020; Lattie et al., 2022; Zhou et al., 2020). Their ability to adapt rapidly illustrates the resiliency of the clinicians during this period of significant uncertainty.

There were several advantages to implementing virtual programming. Clinicians recognized that virtual Social ACES helped reduce barriers to accessing mental health services for youth and their families, and increased equity for many. Access to the program was more equitable in eliminating transportation challenges (e.g., time, expense), increasing the continuity of care, and enabling youth to join when they were ready. These advantages are in line with other studies of telepsychology delivery indicating that virtual mental health services are linked to increased accessibility to mental health services and attendance (Bao & Moretti, 2023). The increased accessibility of virtual compared to in-person mental health services shows promise for improving equitable delivery of mental health services to youth and families for whom factors

such as geographical distance (e.g., remote and rural communities), limited resources/financial means, and medical complexities have historically posed barriers to accessing in-person services (Birnie et al., 2021; Chu et al., 2021; Harrison et al., 2019; Hunter et al., 2019; Lattie et al., 2022; Psihogios et al., 2022; Rideout & Fox, 2018).

The clinicians appreciated the convenience and flexibility of virtual team meetings, which enabled them to stay connected, share resources, receive support, and troubleshoot the technology. Consistent with other research on virtual programming the clinicians were focused on providing continuity of care for youth (Turner & Siegel, 2022), the virtual programming and associated meetings provided continuity of connection, emotional and clinical support for the team members, as well as supervision and collaborative troubleshooting (Mitchell et al., 2022; Turner & Siegel, 2022).

The clinicians recognized, however, that a drawback of virtual Social ACES was the extra effort and energy that was required as clinicians. They found that there was a steep learning curve to use the new service delivery modality, which required additional software support for families and youth, and a stronger effort to keep youth engaged. These findings are consistent with recent research indicating the higher levels of fatigue for clinicians providing virtual services (Maheu & Wright, 2020; Sasangohar et al., 2020). The fatigue may also be related to clinicians' own uncertainty and anxiety during the pandemic (Aafjes-van Doorn et al., 2020; Ahlström et al., 2022; Békés et al., 2021, 2023; Khan et al., 2022).

There was a significant decline in mental health service availability and utilization during the pandemic, both locally (Ontario, Canada) and globally(Stewart et al., 2022), amidst the increasing risk of vulnerability of youth to psychopathology during this period (Clemens et al., 2020; Courtney et al., 2020; Loades et al., 2020). Consistent with the literature on effects of

social isolation and loneliness on youth with neurodevelopmental disabilities (Kwan et al., 2020), including those with LDMH, clinicians in the current study expressed significant concerns about the long-term negative effects (e.g., mental health, behaviour, social-emotional development) of social isolation and loneliness on youth with LDMH.

Clinicians in the present study believed that an adaptation to virtual service delivery called for different admission practices and criteria. Without the appropriate tools to assess and match youth in the virtual space, clinicians believed that the process of assessment and matching was less attuned than in-person assessments. Compared to assessment observations of in-person group interactions, the clinicians noted limitations in engaging youth, controlling the interactional context, observing the youths' social capacities, and group dynamics. In addition to technical problems, there were challenges in assessing whether the youths' presentation online was a reliable indicator of how they would manage in-person. In the current study, clinicians described the challenges in assessing youth who were off camera and/or muted, which negatively impacted the accuracy of matching. These concerns highlighted by clinicians align with those of Madigan et al. (2020) who found that clinicians believed that virtual space does not afford the same capacity to make accurate assessments of both mental health and risk. With reduced non-verbal communication, including proximal and social cues, it is more difficult to tailor treatments to meet individual and group needs (Erlandsson et al., 2022; Madigan et al., 2020).

That said, the clinicians also believed that the platform used was inaccessible and negatively impacted the intervention (e.g., screen function prioritized clinicians, required two monitors to see all the youth, not compatible with all devices, frequent audio-visual asynchrony, steep learning curve). They stressed the importance of utilizing a user-friendly and familiar platform for virtual programming. Recent research on clinicians' perspectives indicated the

potential barrier of internet connection issues for telepsychology, with audio-visual lag and other technical difficulties causing distress for youth and providers, as well as negatively interfering with the therapeutic relationship (Békés & Doorn, 2020). With improvements in virtual platforms and clinicians' increased familiarity, the benefits may outweigh the challenges, especially for those in rural and remote areas.

Assessment, Inclusion and Exclusion Considerations

The field of assessments in the context of telepsychology is in its infancy (Brearly et al., 2017). The National Association of School Psychologists (2017) identified tele-assessments as the most understudied area of telepsychology (Krach et al., 2020). The Social ACES clinicians attempted to use an adapted assessment by following the in-person assessment procedure in the virtual medium. Future research is needed to provide effective and practical approaches to virtual assessment to guide individual treatment planning and matching for group composition (Krach et al., 2020).

Some of the clinicians in the current study believed that youth with LD and concurrent ASD and/or ADHD were not well suited for virtual Social ACES. There is a need for further exploration of this perception given the significant overlap between and variability of presentation with these three neurodevelopmental disorders. Contrary to the clinicians' perspectives, emerging research on telepsychology suggests that virtual social competence programming for youth with ASD and ADHD is both feasible and effective (Gale et al., 2020; Lee et al., 2023). Again, there is need for more research in these areas as the majority of the studies, unlike virtual Social ACES, focused on youth with a single diagnosis (Gale et al., 2020; Lee et al., 2023). It is possible that targeted, diagnosis specific social competence programs may be more effective for these populations.

The clinicians believed that specific youth social-cognitive capacities were important for group fit, engagement. and intervention effectiveness. First, clinicians believed that youth with strong verbal abilities, processing speed, social fluency, and those for whom emotional regulation was not the primary concern, were better suited for the program. While there is emerging research pointing to the feasibility, acceptability and effectiveness of virtual social competence interventions for neurodiverse youth (Gale et al., 2020), these studies do not specify the importance of cognitive capacity for suitability of virtual programming. Clinicians recognize emotion regulation as an important capacity for participating in virtual mental health programming (Romanchych et al., 2022); however, there is a pressing need for research to elucidate the relationship between specific social-cognitive factors and suitability for this intervention context.

In the present study, clinicians believed that the virtual Social ACES intervention was well suited to youth with a greater level of social competence, emotion regulation, and motivation. This perception is in line with recent research indicating that virtual adaptations are more accessible for mood and anxiety presentations compared to more severe mental health presentations (Carpenter et al., 2018; Hersh et al., 2006; Nelson et al., 2003; Slone et al., 2012; Topooco et al., 2019). The challenge is that access to virtual programming was reduced for youth with severe dysregulation and mental health problems (Romanchych et al., 2022; Sasangohar et al., 2020). Clinicians in the current study were concerned that virtual Social ACES was not accessible to the type of youth who participated in Social ACES prior to the COVID-19 pandemic. They believed that the virtual context was not suitable for youth with significant social competence deficits, low motivation, emotion regulation difficulties, and serious mental health problems.

Clinician Control in the Virtual Space

Clinicians shared their concerns about their own inadequacy in ensuring safety, confidentiality, and privacy for youth within the virtual therapeutic space. They identified difficulties with ensuring safety in the virtual space because they were not able to see the contexts in which youths were participating and were not able to intervene if the youths abruptly disconnected or went off camera. The clinicians' concerns are consistent with those raised in previous research on virtual mental health delivery (Carlson & Goldstein, 2020; Diaz et al., 2022), even when there were no major reports of any security breaches (Perry, 2023). These concerns echo those raised within the World Health Organization guidelines regarding the potential for privacy breaches in virtual space due to spyware, or the use of another person's device (WHO, 2021).

Due to the reduced ability to monitor the youth, read the room, and ensure safety, clinicians believed that they were providing a restorative experience for youth during the pandemic, rather than a fulsome experience with the Social ACES intervention. They described the experience as restorative rather than therapeutic because of their limited ability to ensure the safety of youth, read social and non-verbal cues, regulate youth, and use subtle social coaching techniques. In the in-person program, subtle social coaching was one of the most powerful tools for promoting and supporting social skills development; however, clinicians were uncertain about whether social coaching by chat would be misunderstood by the youth. Therefore, there is a need for future research on virtual programming to focus on safety planning to ensure youth safety, provide strategies to regulate virtually, and develop a virtual social coaching tool to support effective therapeutic intervention.

Different Programming

Overall, clinicians in this study believed that virtual Social ACES for youth with LDMH was a fundamentally different program than its in-person predecessor, in terms of intervention goals, skills targeted, and populations for whom the program was efficacious. In discussing the differences between these two forms of service delivery, clinicians referred to treatment fidelity of Social ACES as a guiding principle for adapting to the virtual context. In particular, they attempted to mirror the foundational structure of the program: creating a virtual waiting room, having similar session structures, assessment, matching, and social coaching during the implementation phase. That said, all clinicians recognized that there were significant practical and contextual factors that limited their ability to stay faithful to the Social ACES intervention (e.g., flexible nature of program, no protocol/manual created for virtual Social ACES, no prior rigorous training for virtual delivery). If virtual delivery of the program is to continue, developing a theory of change for the virtual context would guide the structure, training, protocols, and fidelity of this flexible, transdiagnostic, and tailored programming.

The clinicians in the current study believed that the Social ACES theory of change had been referenced when adapting to the virtual context. Theory of change refers to an outcome-based method that supports identification and evaluation of how programs, by way of their programmatic procedures, are able to attain desired outcomes (Hanley et al., 2021). This perspective is consistent with research findings that a theory of change can be used heuristically to assist in the creation of a program (Breuer et al., 2018).

Limitations

The current study was limited by the general lack of telepsychology assessment approaches and guidelines (McNally Keehn et al., 2022). The clinicians identified several

limitations in their ability to accurately assess fit and match youth. Their abilities were reduced in: directly engaging with youth, reading social cues (e.g., proximity, ability to see natural social interaction between multiple participants, eye contact), including other clinical observers, and creating a representative social world to observe youth behaviours (with developmental and sociocultural contexts in mind) (Huerta & Lord, 2012; McNally Keehn et al., 2022). Consistent with previous research on telepsychology assessment, this study revealed the current limits of telepsychology assessment, pointing to the need for future research to identify effective adaptations for accurate assessments in the virtual space (Jang et al., 2022). It will be important for future studies to elucidate the processes and factors that contribute to supporting effective telepsychology assessments, since these have promise in reducing barriers to mental health assessment and treatment (Nazneen et al., 2015; Rimsza et al., 2015).

When speaking to limitations of virtual service delivery, clinicians in the current study spoke to their limited ability to intervene with youth experiencing more severe LDMH problems (e.g., increased emotion dysregulation, reduced executive functioning capacities, increased mental health severity). In the in-person service, this population experienced the greatest benefits from this program. Due to a limited ability to control the virtual Social ACES environment and ensure safety, the clinicians indicated that virtual Social ACES was not feasible for this higher acuity group of youth. Clinicians' tendency to favour a restorative experience that ensured safety over a more rigorous therapeutic experience also limited their ability to explore the effectiveness of social coaching and the therapeutic intervention more broadly. Therefore, future programming could benefit from evaluations of adaptations to the virtual service that help to ensure safety (e.g., safety plans, ensuring parental oversight, reducing avoidance, increasing ability to build rapport) and allow for greater therapeutic intervention (e.g., social coaching, conflict resolution).

With effective adaptations, virtual Social ACES may be able to serve higher acuity youth without compromising safety. This would pave the way for future research to investigate the feasibility, acceptability, and effectiveness of the virtual Social ACES on mental health symptoms and social competence outcomes of a more representative LDMH population.

The current sample included community mental health providers from a single community-based urban center, which may preclude generalization of clinicians' perspectives to other settings. Future research should investigate the perspectives of providers delivering the service across multiple settings (e.g., hospital, school, community) and across geographical settings (e.g., rural, remote).

Final Considerations

As we move past the pandemic, with the return to in-person social interactions and service provision, it is essential to reassess the potential feasibility, and efficacy of virtual interventions for youth with LDMH. Clinicians recognized that comprehensive training to implement virtual Social ACES was lacking. Extant literature brings attention to the paucity of and need for training programs for virtual youth mental health, as well as the need to continue ensuring integrity – an accurate and truthful scientific practice – of mental health care (Orsolini et al., 2021) in telepsychology practice (APA, 2017; Marcus et al., 2019; Orsolini et al., 2021; Toscos et al., 2018; Vigerland et al., 2017). In line with the current study, future research is needed on the effectiveness of training, assessment, and intervention to provide clarity around the goals, processes, and outcomes that virtual Social ACES can target, the populations for which it is effective, and other considerations for virtual program delivery.

Setting the Stage for Study 2

In Study 1, I examined clinicians' qualitative perceptions of pivoting from in-person services and adapting to the delivery of a virtual social competence program. I explored key considerations, including group dynamics, scaffolding, theory of change, inclusion, feasibility and acceptability of the adaptation and delivery of virtual Social ACES. Study 2 had similar aims in terms of examining the feasibility and acceptability of the virtual Social ACES intervention but expanded upon Study 1 in a number of ways.

First, Study 2 investigated caregivers and youths' qualitative perceptions of the feasibility and acceptability of the virtual Social ACES intervention. For Study 2, I used a mixed-methods perspective to investigate the outcomes of the intervention. The quantitative data comprised caregivers' ratings of their youth's social competence pre- and post-treatment. As an index of feasibility, acceptability and effectiveness, I examined clinicians' qualitative reports of youths' functioning during the group sessions. The sample in Study 2 comprised caregivers and youths' who participated in one or more virtual Social ACES groups through the service at CDI. Study 2 extended the findings of Study 1 by exploring in-depth first-hand qualitative accounts of the experience of participating in virtual Social ACES, as well as exploring qualitative data for questions about the implementation and effectiveness of virtual programming (Teddlie & Tashakkori, 2003). Mixed methods designs provide a greater understanding of research questions than using one approach alone (Cresswell & Plano Clark, 2011; Palinkas et al., 2011).

With multiple methods (i.e., qualitative, quantitative), data sources, and perspectives (e.g., clinicians, caregivers, youth), I was able to triangulate the data for a deeper understanding of the research questions (Bryman, 2006; Cresswell & Plano Clark, 2011). With mixed-methods, I was able to compare caregivers and youths' experiences of the virtual Social ACES intervention

using different data collection methods (i.e., one-on-one interviews, clinical group quantitative reports, pre-post outcome measures) and different data sources (i.e., self-reported data, clinicians' observations) (Cresswell & Plano Clark, 2011). With multiple perspectives on the same experience, I was able to identify commonalities and divergence in the nature and effectiveness of the virtual programming (Bryman, 2006; Cresswell & Plano Clark, 2011). With the mixed-methods approach and the ability to triangulate, I was able to explore and reveal the experiences, feasibility, acceptability, and effectiveness of the virtual Social ACES intervention with breadth and depth of comprehension and substantiation (Johnson et al., 2007).

The exploration of clinician, caregiver and youth qualitative perspectives and the quantitative caregivers' ratings of youth with LDMH represents a novel research study that expands on research to date in an unprecedented time of public health restrictions that required a rapid switch to virtual services within the child and youth mental health sector. Given limited research, theory, and hypotheses related to virtual programming for youth with LDMH, the mixed-methods approach in Study 2 provided for preliminary explorations of a new form of service delivery (Palinkas, 2014).

STUDY 2: "EVEN ONLINE WAS BETTER THAN NOTHING": A MIXED-METHODS FEASIBILITY STUDY OF CAREGIVERS AND YOUTHS' EXPERIENCES WITH THE DELIVERY OF A VIRTUAL GROUP-BASED SOCIAL COMPETENCE PROGRAM DURING THE COVID-19 PANDEMIC

Introduction

Learning Disabilities, Social-Emotional Difficulties and Related Therapies

Youth with LDs struggle with a deficit in one or more of the basic psychological processes involved in verbal (e.g., understanding or using spoken or written language) and non-verbal abilities (e.g., visuospatial reasoning, visuospatial perception, psychomotor coordination) leading to difficulties with academic functioning (Ginieri-Coccossis et al., 2013; Kempe et al., 2011; Martínez & Semrud-Clikeman, 2004; Mishna, 2003; Mishna & Muskat, 2004). Youth with LDs also experience difficulties with information processing (e.g., attention, executive functioning, language skills, theory of mind) and struggle with emotional reactivity, which is impacted by information processing challenges. Their strong emotional responses often limit the cognitive abilities of these youth (e.g., cognitive flexibility, impulse control, perspective taking, social skills), since emotions have a significant influence on cognitive processes, learning and memory (Diamond, 2013; Milligan et al., 2016; Tyng et al., 2017; Zelazo & Lyons, 2012). Additionally, youth with LDs often experience notable difficulties with engaging independently in social interactions to successfully form and maintain friendships (Hutchinson et al., 2004). Compared to same-age peers, 75% of youth with LDs have lower levels of social competence in the domains of social skills, emotion and behaviour regulation, perspective-taking and understanding the social environment (Baumeister et al., 2008; Milligan et al., 2016).

Approximately 8.4 percent of Canadian school–aged children and youth experience LDs (Statistics Canada, 2020). The academic difficulties that they experience have a wide impact, negatively impacting many aspects of their psychosocial wellbeing (e.g., low self-worth, low self-esteem, loneliness, social rejection, social neglect, bullying by peers, self-doubt, and failure) (Arthur, 2003; Baumeister et al., 2008; Ginieri-Coccossis et al., 2013; Kempe et al., 2011; Martínez & Semrud-Clikeman, 2004; Mishna, 2003; Mishna & Muskat, 2004; Parker & Asher, 1987; Wiener & Schneider, 2002). These difficulties are compounded by bi-directional processes, as teachers perceive children with LDs as being less cooperative, attentive, socially acceptable, and desirable as students (Karande et al., 2009; Katusic et al., 2001; Palmer et al., 1982; Panicker & Chelliah, 2016; Shaywitz, 1998). The stress associated with having an LD is often manifested through externalizing, academic, and social-emotional maladjustment problems, leading to further behavioural difficulties and increased risk for co-occurring mental health problems (Kempe et al., 2011; Lowe et al., 2007; Martínez & Semrud-Clikeman, 2004; Milligan et al., 2016).

Mental illness is a major source of disease burden for young people in developed countries (Arnett et al., 2014). The co-occurrence of LDs and mental health difficulties (LDMH) is associated with further risk of adverse impacts on cognitive and academic performance, disrupting attentional capacities, further reducing the working memory and information processing of youth with LDMH (Lopez & Project, 2006; Nelson & Harwood, 2011; Patel et al., 2007). Academic, social, and mental health difficulties add additional burdens for youth with LDMH, leading to a negative cycle of cumulative setbacks and hopelessness (Panicker & Chelliah, 2016). Therefore, the availability of effective psychosocial interventions for youth with

LDMH is essential to scaffold their skill development and prevent cascading difficulties into adulthood.

Group-based Social Competence Interventions for youth with LDMH

There has been a longstanding lack of services and support to address social-emotional difficulties experienced by young people with LDMH, increasing the risk for further psychosocial sequelae (Cavioni et al., 2017; Finn & Rock, 1997). Researchers have noted the significant benefits of group social competence interventions for youth who have learning disabilities (Gale et al., 2020). These interventions generally comprise experiences with a peer group of youth with similar struggles to normalise the experience, reduce loneliness, build up self-esteem and social competence, as well as providing opportunities for safety, acceptance, and support from other youth (Hoag & Burlingame, 1997; Malekoff, 2001; Mishna et al., 2015). Therapy within a peer group context also provides youth with optimal teachable moments in which clinicians can provide corrective feedback. These teachable moments may be critical to improvements as youth are more likely to learn from engaging socially with peers than with adults (Mcintosh et al., 1993). These models provide the ability to learn from experiences and adjust their behaviours adaptively (Gresham et al., 2001; Malekoff, 2001; Mishna, 1996a, 1996b; Mishna et al., 1994).

In-person, group-based social competence programs tailored, for youth with LDMH have been identified as an optimal treatment for improving social-emotional capacities, information processing, social interactions, social competence, and peer relationships (Guli et al., 2013; Kavale & Forness, 1996; Stichter et al., 2012). These interventions also improve social skills, self-esteem, and reduce perceived isolation (Kavale & Mostert, 2004; Milligan et al., 2016). Social competence interventions have been developed for youth with a range of

neurodevelopmental disorders (e.g., ADHD, ASD), including for youth with LDMH (Milligan et al., 2016). Evaluation of these programs is essential for building an evidence base of psychological interventions for youth, to not only confirm their efficacy and effectiveness, but also to indicate for whom they are and are not effective.

Need for Program Evaluation for Youth with LDMH

Program evaluation is employed to assess diverse healthcare interventions and bolster the evidence-base of service delivery across a broad range of settings, including community agencies, training programs and research initiatives (Frechtling et al., 2002; Miller, 2017). Program evaluation in mental health service delivery is embedded and systematic by nature and designed to collect data that elucidate descriptors, outcomes, and the impact of a programs. In turn, this data helps to better understand the efficacy of a program, and influence program delivery moving forward (Centers for Disease Control and Prevention, 2011). Program evaluation helps to provide an empirical answer to the impact of a program, clarifying strengths and weaknesses, as well as aligning services with best practices (McMahon & Cullinan, 2014). Alignment with best practices is essential, as programs with faithfulness to best practices have been found to have average effect sizes that are two to three times higher, compared to programs with poor adherence (Durlak & DuPre, 2008).

In contrast to many publicly funded programs which have well established best practices (Bishop-Fitzpatrick et al., 2015; Gaugler, 2015; Grawitch, 2015), program evaluations of community-based mental health interventions for youth are not well established (Miller, 2017). While there has been an increased interest and application of psychological therapies for adults with LDs (National Guideline Alliance (UK), 2016; Taylor et al., 2012), this supporting research is limited compared to the psychosocial interventions that have been researched and applied to

general population (Gustafsson et al., 2009; Prout & Browning, 2011), and even more limited for programming in youth (National Guideline Alliance (UK), 2016). The treatment of choice for youth with LDMH is in-person social skills groups tailored to youths' unique level of social competence difficulties, information processing strengths and emotion regulation difficulties (Milligan et al., 2016). There is relatively limited published research, however, on the implementation of these practices in community settings (Cotugno, 2009; Guli et al., 2013; Maag, 2006; Milligan et al., 2016; Stichter et al., 2012). This highlights the need for additional program evaluation research of such programs (Milligan et al., 2016; Mishna et al., 2010).

Increased Need for Mixed-Methods Research for Youth with LDMH

Over the past two decades, mental health service delivery researchers have been encouraged to use mixed methods approaches in service delivery research by institutes and funding agencies such as the National Institute of Mental Health and the National Institute of Health (Hoagwood et al., 1996; Hohmann, 1999). Mixed-method designs consider the collection and analysis of both qualitative and quantitative data; it has gradually become more represented in the mental health service literature (Hopper, 2008; Palinkas, 2014; Robins et al., 2008). Mixed-methods designs are hypothesized to have an inherent strength, allowing a greater understanding of research questions than one approach alone (Cresswell & Plano Clark, 2011; Teddlie & Tashakkori, 2003). Specifically, mixed-method designs provide an in-depth understanding by way of qualitative methods, as well as the use of quantitative methods to test and confirm or refute hypotheses of intertest (Teddlie & Tashakkori, 2003). Mixed-methods approaches are especially useful for preliminary research, particularly when there is limited previous research and/or an absence of theory and hypotheses to test (Palinkas, 2014).

A mixed-methods approach was used to evaluate the Social Awareness, Competence, Engagement, and Skills (ACES) program (Milligan et al., 2016, 2017). Social ACES is a group-based, client-centered social competence program for youth aged eight to 18 with LDMH difficulties (Milligan et al., 2017). Social ACES differs from other manualized social competence interventions, by providing a tailored and flexible curricula and therapeutic stance, based on individual and group therapeutic goals as well as group matching (Milligan et al., 2017). This mixed-method study suggested that the tailored nature of the program and in-vivo social coaching contributed to youth having a positive social gain following a 10-week group, at post-intervention (Milligan et al., 2017).

At this time, following a global pandemic with severe public health restrictions, there is a critical need for further mixed-methods evaluations of the virtual adaptations of social competence programs for youth with LDMH. When the COVID-19 pandemic began in March 2020, all in-person, evidence-based social competence programs such as Social ACES became unfeasible and inaccessible. The present study provides a small scale, descriptive exploration of the feasibility, acceptability and effectiveness of virtual programming for youth with LDMH.

Program Evaluation of Virtual Adaptations for Youth with LDMH During the Pandemic

Many youth, including those with LDMH, reported experiencing elevated levels of mental health difficulties during the COVID-19 pandemic (Bao & Moretti, 2023; Cacioppo et al., 2021; Eisengart et al., 2021; Jones et al., 2021; Nearchou et al., 2020; Panda et al., 2021; Tzur Bitan et al., 2022). The worsening of youths' mental health difficulties during the pandemic and the significant challenges that the pandemic created for mental health service delivery (Bao & Moretti, 2023; WHO, 2020) called attention to the need for a novel approach to deliver evidence-based and accessible interventions for youth. In response, the CDI transitioned their mental

health services to virtual implementation, utilizing a PHIPPA-compliant videoconferencing platform, and breakout room technology in an attempt to replicate the in-person Social ACES intervention.

There was a need for mixed-methods research to explore the feasibility, acceptability, and effectiveness of virtual of programming, such as virtual Social ACES, during the COVID-19 pandemic (Fetters & Molina-Azorin, 2020). To date, however, there are no known mixed-methods studies examining the virtual-adaptation of an evidence-based, group-based, tailored social competence program for youth with LDMH. The rapid move to telepsychology services due to COVID-19 presented the opportunity for a natural experiment for gathering qualitative and quantitative data to examine perceptions of the feasibility, acceptability, and effectiveness of the adaptations of Social ACES to a virtual context.

Objectives

The current study explored caregivers and youths' perceptions of the virtual Social ACES intervention. This mixed-method study involved in-depth case studies of four youth who had participated in one of the virtual Social ACES groups. For a qualitative perspective, I set out to explore caregivers and youths' perceptions of the virtual context for Social ACES intervention through one-on-one semi-structured interviews. For a mixed-methods perspective, I examined outcomes of the intervention by examining quantitative parents' ratings of their child's social competence pre- post-treatment, and this was augmented by clinicians' qualitative reports of youths' functioning during the group sessions as an index of feasibility, acceptability, and effectiveness. For the current study, I defined a feasible program as one that caregivers and youth believed was practical (Bowen et al., 2009), an acceptable program as one that is well received and meets the needs of caregivers and youth (Greene, 2008), and an effective program as one

that has clinical utility (Nathan, 2006). More specifically, the objectives for Study 2 are as follows:

Objective 1: To investigate caregivers and youths' perceptions of the feasibility and acceptability of the virtual Social ACES intervention based on one-on-one semi-structured interviews (see Appendix C) with caregivers of the four-case study youth following group completion.

Objective 2: To investigate feasibility, acceptability, and effectiveness, I investigated the pre-post quantitative outcome measures recorded in The Social Skills Improvement System Social Skills, Social Emotional Learning (SSIS SEL) – Parent Rating Form, which was augmented by the clinical progress reports to elucidate case study outcomes.

Method

Study Design

For this study, I utilized a mixed method research design. This design allowed me to illustrate and compare the qualitative results (e.g., caregivers and youths' perspectives of virtual therapy) with the quantitative results (i.e., Social Skills Improvement System: Social–Emotional Learning Edition (SSIS SEL) Parent Rating Forms, hereinafter referred to as the SSIS SEL. Using both approaches provides more credibility (enhancing the integrity of the findings and analysis) and improves the relevance of findings for applied settings (e.g., practitioners, community mental health services) (Bryman, 2006).

Setting, Participants and Inclusion

The present study was embedded at CDI and focused on caregivers and youths' perceptions of the virtual Social ACES intervention delivered during the public health restrictions imposed by COVID-19. Participants in this study included youth who took part in one of the virtual Social ACES groups, who assented to the research, and who's caregivers consented. Their caregivers were also included. Youth and their caregivers (see Table 2) were invited and consented both to take part in a semi-structured interview and allow CDI to share their quantitative (e.g., outcome measures) and qualitative (e.g., assessment, clinical progress notes) data (see Appendix E and F). In keeping with IPA (see Data Analysis Plan), the youth and caregivers were selected intentionally, as they provided access to first-hand perspectives on the adaptation of virtual mental health services for caregivers of and individuals with LDMH (Greene, 2007; Greene et al., 1989; Schoonenboom et al., 2018; Smith & Shinebourne, 2012).

Table 2 presents basic demographic data for the four youth and their caregivers (n=4) who were interviewed separately (N=8). The youth were on average 12.5 years old (range: 9 –

17); three of the youth identified as male (75%), one youth was female; and three of them were Black, Indigenous, or People of Colour (75%), the other was Caucasian.

Table 2:

Youth and Caregiver Demographics

Youth Pseudonym	Age (Years)	Gender	Matched Caregiver Pseudonym
Jake	11	Male	Destinee
Veronica	17	Female	Eleanor
James	9	Male	Jennine
Cyrus	13	Male	Cynthia

Youth and caregivers were recruited through an email invitation and consent process. Caregivers (when required because youth were minors) and youth 16 years and over provided informed consent (see Appendix E and F for caregivers and youth consent forms, respectively) and youth below 16 years of age provided assent (see Appendix G) to take part in a semi-structured interview and share their quantitative and qualitative data. All youth and caregivers were provided with the appropriate assent and/or consent forms to complete and return prior to their interviews. Consent forms indicated that virtual Social ACES youths' clinical file data at CDI would be accessed for the research. Of note, all youth eligible for inclusion in Study 2 were part of groups that were facilitated by clinicians in Study 1.

To protect the privacy and minimize risk of perceived coercion, youth were informed that consenting to this study in no way impacted their service provision. To ensure that youth and caregivers were completely informed about the study, youth and caregivers were able to email the primary researcher to schedule a research consultation session by phone or video (see Appendix E and F). These sessions were meant to clarify any questions that youth and/or caregivers had pertaining to the consent form and to accommodate youth who had difficulties with reading or language processing. In the current study, no youth or caregivers requested this

research consultation. The clinical manager provided the researcher with a list of youth who had participated and completed the virtual program as well as having completed the outcome measures. Selected youth and/or caregivers who consented by filling out, signing, and returning the consent form were considered eligible for the study.

Data Collection and Measurement

Semi-Structured Interviews

The first stage of qualitative data collection comprised audio-visual recordings of semi-structured interviews with youth and caregivers, separately. The interviews were recorded via Zoom, a HIPAA compliant virtual platform (Lobe et al., 2020). Semi-structured interviews, which offer rich, detailed first person accounts of experiences and phenomena, are the most common method of data collection in qualitative research. These virtual interviews provided an opportunity to assess caregivers and youths' perceptions of virtual services. They also shed light on the feasibility and acceptability of the Social ACES intervention and delivering virtual services (Johnson et al., 2007). In line with the recommendations set out by Smith & Nizza (2021) in *Essentials of Interpretative Phenomenological Analysis*, the semi-structured interview guide for the current study included broad and open-ended questions (see Appendix C) to understand caregiver and youths' experiences. The duration of interviews with caregivers ranged between 30 and 60 minutes and with youth, they ranged between 15 and 30 minutes. I conducted the interviews between August 2022 to January 2023. All data have been stored and entered in a password protected database (see Appendix G).

Social Competence Progress Reports

The qualitative data gathered through the one-on-one semi-structured interviews were augmented by clinical participant progress reports. These clinical records provided important

contextual documentation (e.g., the physical environment and interactions, participant progress in session). They were integrated as supplementary and confirmatory research data (Phillippi & Lauderdale, 2018).

Social-Emotional Skill Development

The primary quantitative outcome was parents' ratings of youths' scores on the SSIS SEL. The SSIS SEL assesses Self-Awareness (e.g., recognizing emotions, recognizing how emotions influence behaviour), Self-Management (e.g., ignoring distractions, keeping calm in a variety of situations, achieving basic goals, need for reminders to complete tasks), Social Awareness (e.g., understanding of how others feel, ability to offer support to others when needed), Relationship Skills (e.g., communication skills, cooperation) and Responsible Decision Making (e.g., decision making based on social norms, accountability for actions, respectful behaviour and following rules) (Elliott & Gresham, 2013). This measure is standardly administered as part of the CDI admission process and provides a measurement of the SEL skills identified by the Collaborative on Academic Social Emotional Learning SEL competence framework(Newman & Dusenbury, 2015). Youth with greater SEL skills experience increased social adjustment, academic success, and reduced risk of serious psychopathology in adulthood (Elliott & Gresham, 2013).

Caregivers respond on a four-item scale measuring the frequency of SEL skills, ranging from "Never", "Sometimes", "Often" to "Always". Within the Social ACES intervention, the SSIS SEL is completed by caregivers at both pre- and post-intervention to provide an indication of whether and how the youths' SEL skills changed following the intervention. The measure has norm-referenced standard scores on each subscale for ages three to 18 years. The SSIS SEL has acceptable to excellent internal consistency (Cronbach $\alpha = 0.75 – 0.96$), good test-retest

reliability (Corrected $r = 0.78 – 0.85$) and moderate to substantial interrater reliability (Corrected $r = 0.47 – 0.65$) (Elliott & Gresham, 2013). These psychometric properties were assessed across a representative nationwide sample of children and adolescents (three to 18 years of age), with three normed groups (preschool [ages three to five], school aged children [ages six – 12] and adolescents [ages 13-18]). The SSIS SEL produces a standard score, one composite scale (i.e., SEL Composite) and five subscale scores (e.g., Self-Awareness, Self-Management, Social Awareness, Relationship Skills, Responsible Decision Making), with higher scores reflecting greater social skill functioning (Elliott & Gresham, 2013). Standard scores that are ≤69 are categorized as Well-below Average, 70 to 84 are categorized as Below Average, 85 to 114 are categorized as Average, 115 to 129 are categorized as Above Average and ≥130 are categorized as Well-above Average (Elliott & Gresham, 2013).

Data Analysis Plan

The first set of qualitative data were obtained from recorded one-on-one semi-structured interviews with youth and their caregivers. The qualitative interview data were coded and categorized by the principal investigator and a third of the data were coded and categorized by an independent coder for reliability and validity. The interviews were numbered and the interviews that were coded and categorized by the independent coder were randomly selected using a random number generator. Data were analyzed for emerging themes related to youths and caregivers' perceptions of the delivery of the Social ACES virtual adaptation. Additional qualitative data were obtained from case-study clinical file reviews, including clinical participant progress reports.

Quantitative data were cleaned and summarized descriptively. Qualitative and quantitative data were considered together to investigate the patterns between the pre-post

quantitative outcome measures recorded in the SSIS SEL during the virtual Social ACES sessions to summarize case study outcomes and explore for whom the delivery of virtual Social ACES was and was not efficacious and developmentally appropriate.

Interpretative Phenomenological Analysis

Individual caregiver and youth voices were analyzed using the experiential approach of IPA. Below I outline the reasons for why IPA was selected amongst the many qualitative approaches. Unlike other qualitative methods, IPA is particularly useful for considering complex, ambiguous and emotionally laden topics (Smith & Osborn, 2015), offers detailed accounts of individual participants' lived experience while also allowing researchers to consider patterns of similarity and differences across individuals, and has flexible guidelines allowing researchers to adapt study analyses in accordance with their aims (Smith & Nizza, 2021). Uniquely and specifically, IPA benefits from three theoretical underpinnings (i.e., phenomenology, hermeneutics, ideography) that influences researchers to a) gather detailed first-person subjective accounts of specific phenomenon through in-depth interviewing (phenomenology), b) emphasize meaning making of participants and understanding how they make sense of their experience (hermeneutics), and c) analyze individual experiences separately before considering patterns (ideography) (Smith & Nizza, 2021). Thereby, IPA was deemed well suited for this study, as it provided a deeper understanding of the meaning that experiences held for caregivers and youth, in a study that sought out to understand their experiences during an unprecedented period with complex demands and increased uncertainty.

Analysis in IPA is an iterative and multi-faceted process that can be differentiated into four distinct stages. Throughout this iterative IPA process and in an attempt to maintain the integrity of participants' voices and experiences, I moved back and forth between the stages of

the analysis to ensure that the integrity was upheld (Smith & Eatough, 2006). In the first stage of analysis, the independent coder and I immersed ourselves in reading the semi-structured interview data and provided exploratory comments (e.g., content, language, context, initial interpretations) (Smith & Shinebourne, 2012). In the second stage, the coder and I independently transformed our initial notes into emerging themes, through which we aimed to frame the emerging themes into more concise and higher levels of psychological abstraction. This process was iterative in that we considered the whole in relation to the parts and vice-versa (Smith & Shinebourne, 2012). Thirdly, we collaborated to consider connections between developing themes, clustering based on similarities, and began to formulate labels. In the fourth stage, as an outcome of the iterative process, we created a graphic table with the themes and subthemes. Lastly, based on the raw data and emergent themes, I wrote a narrative account of the thematic qualitative findings (see below). In this account, each theme was introduced, illustrated through participant extracts (retaining the participants' voice and experience), and followed by interpretive comments to generate new insights.

Due to the limited qualitative data that resulted from the youth interviews, I was unable to analyze the youth interviews separately. Instead, I integrated the youth voice in with the caregivers' reports.

Trustworthiness of the Semi-Structured Interview Findings

The findings in the current study were validated – shown to be plausible, credible, and trustworthy – by using several strategies that maximize research validity (Johnson & Christensen, 2017). We used low inference descriptors to mirror participants' voices as closely as possible (e.g., direct quotations). We took a reflexive stance to reduce bias and viewed research and interpretation as an evolving process (Johnson & Christensen, 2017).

Multiple data sources (i.e., youth qualitative interviews, caregiver qualitative interviews, qualitative social competence progress reports, quantitative pre-post data) and methods (i.e., quantitative, qualitative) were used in an effort to triangulate the data, cross-checking information, and conclusions for cohesiveness. I assumed a "researcher-as-detective" approach and considered many alternative explanations for the findings by using the validation approaches above (Johnson & Christensen, 2017).

Agreement among the independent coder (inter-rater reliability) was assessed for coding. The coder and I worked collaboratively, beginning with learning and training by following the Smith & Nizza (2021) *Essentials of Interpretative Phenomenological Analysis* step-by-step guide to IPA. To assess interrater reliability, the second coder analyzed 50% of the qualitative data (i.e., two youth and their caregivers) (Smith & Nizza, 2021). The coder and I worked in parallel, meeting as often as one to four times a month to trouble shoot, provide clarity, and confirm proper data analysis. Coding was done independently until the coder, and I had formulated subthemes. Interrater reliability was assessed at the general theme level (90.41% agreement) and at the subtheme level (87.5% agreement). Differences were resolved through open conversation and consensus.

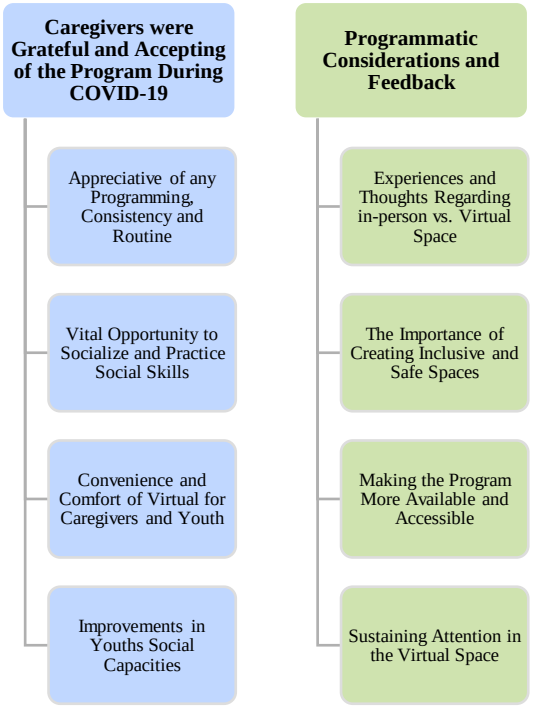
Results

Qualitative Analysis

During the interviews, all caregivers and youth reflected on their experiences with the virtual adaptation of Social ACES. Figure 3 presents the themes and subthemes resulting from the IPA of caregivers and youths' semi-structured interviews. Themes and subthemes interrelate and are not independent. All caregivers and youth reflected on their experiences with the virtual adaptation and facilitation of Social ACES. The two themes and related subthemes are provided in Table 4.

Figure 3:

Themes and subthemes



1. Caregivers were grateful and accepting of the program during COVID-19

The first theme that emerged was gratitude and acceptance of the virtual Social ACES during the pandemic. Five sub-themes were identified and are explored below. These included:

being appreciative of any programming during the pandemic, importance of routine and consistency, essential chance to socialize and practice social skills, virtual being convenient and providing comfort, and the program led to reported improvements.

1.1 Being appreciative of any programming during the pandemic

Caregivers experienced the pandemic as being a period of increased demands, reduced resources, and increased stress. They shared their experience of the limited services that were available. Destinee shared that Social ACES "…was the only thing available for the kids during this time...with the school was closed…". Caregivers were eager to find opportunities for any social support, with Destinee sharing that "…Even online was better than…nothing. During the [pandemic]…it was hard…nothing else was better. Whatever was offered, I took it. It was really bad". Cynthia put her son in "…a few different groups…he was in the TDSB group and…there was one more group… anything that was online…we signed him up for". In line with this, Cynthia shared that "…it was really vital that our kids were connected somewhere to something which was familiar that we trusted" during this time.

Caregivers such as Cynthia recounted being "…stressed and were trying to figure out…who's getting sick and who's been exposed". Destinee shared that "it was almost impossible…it was really hard" for her as a caregiver and her children having to "…be at home all day with my kids…both diagnosed with ADHD…by myself…to supervise the three kids" in a small home. In addition, Destinee experience the pandemic as "…really a nightmare", and felt that the Social ACES intervention helped to keep the family safe:

> …to be honest with you we struggled during the pandemic… having to take the kids to the hospital almost every week… it was almost like out of control… thank God that I signed up for this program and got the help….if it wasn't for Integra, CDI and all these

people who got involved during the pandemic… something could have happened to me and my kids because of having to stay inside the house.

With the stress and uncertainty of the pandemic, caregivers and youth experienced the program as an enjoyable experience that was different than school and video games. When asked about their rating out of five, caregivers and youth alike were quick to rate the program as a four or five. Caregivers appreciated the program, as Destinee explained, "…amazing program", which provided a break for caregivers who had to take care of their youth "24 hours a day". Elanor believed that offering programming such as Social ACES that was less formal, less structured, and more social was very important for "the mental health…and the well-being of students when the schools closed", and that it was nice for the youth to "…have something where it's not just…doing school stuff...Here's your assignment and then we're offline. That's the extent of it … I'm developing friendships and relationships...". Cynthia shared that she initially experienced resistance about virtual group participation, with her youth questioning "why do I want to talk to other people" and preferring "to zone out on the computer". That said, she shared that "once he was on it [virtual Social ACES], he was always very engaged". Elanor further highlighted the active nature of participating in Social ACES and mental health benefits of group instead of passive social media exposure, sharing her belief that:

> …Tik Tok is a huge thing…I'm watching it, I'm idolizing what these people are doing…these people are recorded in some way…you're just scrolling through these particular posts. It's very unhealthy whereas I find something like this…you're engaging and that's something that you don't get from something like [Tik Tok]. That is very important.

From the youth perspective, Cyrus expressed that "it was fun… we didn't have to do any work… and we did lots of activities." James shared that he "…kind of enjoyed…just hanging out with people".

Caregivers experienced Social ACES as providing a sense of routine, structure, and continuity. Elanor believed that Social ACES provided important structure, in spite of the virtual burnout being experienced by youth: "…it was COVID, and so it was nice to have…some structure for him. He was pretty burnt out on [platform Y] but still I think it was a useful thing". Destinee shared in a time of instability during pandemic, "it was really nice to [have] something for the kids…at two or three o'clock… to get prepared for'. She and her son were able to "know what to do right now" which was experienced as "really, really helpful". In addition, Destinee noted that her "…kids need routine…if you break up the routine it's harder to start again…I like my kids to do different things…not only our video games and YouTube...". Elanor shared that there was "…a sense of now what? Now what is this? Why do we have to do this?" and this contributed to "a lot of transition" difficulties.

1.2 Vital opportunity to socialize and practice social skills

This subtheme reflects how caregivers and youths perceived Social ACES as filling the gaps by providing opportunities to socialize and practice social skills during the pandemic. Elanor shared that the program was helpful for her son to have opportunities to socialize as "everybody had to participate"; the group provided the opportunity to socialize with other youth: "…Just hanging out with the kids and …getting to see each other weekly was good and a different group of people".

Despite the initial uncertainty and resistance around partaking in the virtual group, Elanor, shared that the group allowed her daughter to practice her social skills: "…putting her on

the spot, but it's not a bad thing because it…gives her the opportunity to say…I can actually do this…later on she was able to add to group". Cynthia also expressed her appreciation for the clinician's ability to provide corrective social experiences for her son:

> Her way of teaching… I learned from that. When Cyrus told me, you know, some of the things he said…An example was…they talked about Santa and Christmas and some of the kids are younger and Cyrus decided to blurt out that there's no such thing as Santa…she handled it in a way that…some kids do believe they're Santa, so we have to respect that. So, I really appreciate how she did that. He's learning without feeling like he got in trouble, which he would have with me.

Cynthia also expressed appreciation for the Social ACES matching process and the interrelatedness with engagement:

> It was really meaningful because [finding the right group] wasn't easy to do…grouping was the most important part because…he's generally out of his depth socially if he's meeting with kids his age. I think that it wasn't just the age, but they all had a common interest. So that made a big difference in how engaged he was.

Jennine believed that Social ACES was just "… one part of it and like learning…how to kind of engage with people" believing that no one social group alone can "solve anything because these kids just need to keep learning…there is no real end to this learning…for this kind of group of kids". Despite its limitations, she believed that the program "was just generally the right tone of…things that he needs skills in." Jennine shared her perspective on children gaining social skills: "you can pathologize everything, but in the end…it's a very small skill that just needs to be practiced and practiced in the right context".

Caregivers and youth had different perspectives on the utility of Social ACES for building and maintaining friendships. The majority of caregivers recognized that their children were interacting with other youth and feeling connected; however, they did not believe their children were able to build meaningful friendships during the group or maintain them following the group. For example, Destinee shared "…I don't think Jake made friends online because…it's more difficult for him to talk and he doesn't have any [in-person] contact".

Elanor also had a perception similar to her daughter's, sharing that her daughter was able to form and maintain a semblance of friendships:

> She had communication with a couple of participants after the Social ACES group and she'll tell me…I'm keeping in touch with this particular person. I was like wow, for however long that went…but I felt that was important…when the session ended, it didn't just end there. She was able to still keep some type of friendships.

From the youth perspective, Veronica shared that she enjoyed the group sessions because "it was fun meeting everyone…talking to new people" and "meeting new people online and then also just doing social interactive stuff like games and talking about our days". Veronica reflected that she felt "more sociable online than I am in-person, because in-person I'm more shy and introverted".

There was more variation in perceptions of friendships among caregivers and between caregivers and their children. For example, youth such as Cyrus reported that they "…made friends… Yeah. I stayed connected", whereas his caregiver, Cynthia felt that she "probably dropped the ball on this. I feel like I might have asked Cyrus, and he might have said OK…but I just didn't follow up" due to capacity. Veronica shared that "when the group did end, we all kind

of added each other's social media. I haven't really talked to some people…but I do keep in contact with others…".

1.3 Convenience and comfort of virtual for caregivers and youths

Caregivers reported that the virtual nature of Social ACES was convenient. Jennine shared "…online was really good because it wasn't a big ask to do. Just log in through the computer, and I still think it was really giving a lot". Elanor believed the group was convenient due to the time gained back and the ability to show up late and "…it's helpful because if we're running late, we could still pop into some portion of the session rather than having to miss it all". Cynthia recognized that they would have not been able to access the program if it wasn't virtual: "…during COVID we moved to [City in Greater Toronto Area] ...coming in-person logistically to make any, like it just wasn't happening…".

Jennine felt that she "would choose online" in the future over the in-person group due to "the busyness of our schedules". She believed that it was less taxing and more accessible for youth "especially now that virtual is more common and it wouldn't be associated with a chore in the same way that it was during the pandemic". Elanor shared that the virtual nature of the program and the ability to do sessions in the comfort of her home provided a more manageable level of exposure that helped her to engage in the group:

> Sometimes she does better in her own setting. I find there's a little bit more comfort. When she's in her room, she tends to open up a little bit more…the only thing is sometimes there are distractions… it's helpful because it's allowing her…to interact, which is something that's very challenging for Veronica.

From the youth perspective, Veronica's perceptions were similar to her mother's. She experienced benefits and preferred the virtual version of Social ACES because it was less

intimidating. She shared that she liked "being online more than in-person" as she "…found online was better for me because I was not so shy… Maybe just because you're in your own house and you just feel confident talking".

1.4 Improvements in youths' social capacities

Caregivers noticed positive social changes in their children. Cynthia shared that her son "…significantly improved…" and she stated that while her son "might say differently, for me because of the gains that we've seen him make… it's a 5". Similarly, Destinee shared that she has seen "…a lot of difference in Jake… his behaviour is changing" since enrolling him in social services including Social ACES. While in the past he wouldn't "start the conversation" and would be "waiting for someone to start the conversation" she shared that "…today he talks…he's asking questions". Elanor perceived the Social ACES intervention as "inclusive", with the clinicians helping model appropriate behaviours:

> If somebody was…having a moment…the host would…recognize that and identify that the person was expressing their excitement in that particular moment. So as opposed to Veronica saying, this is annoying, why is this person doing this, it gave her a different perspective on how other people were able to express themselves.

Elanor shared that when she walked near her daughter's "room and I can hear her engaging, it means a lot to me … it's like, oh my god, it's my daughter speaking right now". Cynthia reported that her mother also recognized these social skill improvements, which was validating:

> So, for example, for Cyrus…he'll like to repetitively ask questions. And that's kind of his way of perseverating or stimming, so to speak…But what I found was...there's more of a back and forth and he's able to carry on the back and forth…And it's interesting because

my parents, they live in Pakistan. So, my kids talk to them fairly often…and so over time they were noticing that the way he's conversing with us is different…how he is talking with us is different and it's good.

From the youth perspective, Veronica agreed that she experienced social gains, such as improving her ability to "ask more questions and keep the conversation going". Veronica shared that they did "one [game] about keeping the conversation going, which is something I struggle with…that was the main one, but I know other social skills kind of helped me". She noted that she would usually just "give them a one-word answer" but was able to learn through the game that "oh you can ask questions, relate to stuff and just keep it flowing". Similarly, Cyrus also stated that his ability to engage "got better…I got to talk more…I got better at speaking".

2. Programmatic considerations and feedback

The second theme that emerged related to programmatic feedback and considerations from caregivers and youth. Five sub-themes were identified and are explored below with focuses on the experiences with in-person vs. virtual services, improving program accessibility and availability, creating inclusive and safe spaces, and sustaining attention in the virtual space.

2.1 Experiences and thoughts regarding in-person vs. virtual space

The majority of caregivers and youth expressed their preference for in-person over virtual services. Destinee believed that "in-person is always better", and that it was important for youth to be able to socialize outside of the home, stating her preference for "…in-person. I believe that kids need to socialize. It's not good to be at home and just doing things by yourself". Destinee also noted the utility of in-person groups as exposure for social anxiety, explaining that her son is "…shy…but I don't know why…he's so scared about the world outside his own".

Caregivers expressed the value of in-person for younger developmental group. Jennine shared that virtual play was different, with the belief that virtual "…for a younger kid wouldn't be as good", because "…you're not playing those language games…you might actually be sharing toys or negotiating objects … they're more tactile". In line with this belief, Destinee noted that her son's lack of verbal expression and outgoingness made virtual more difficult "because he's shy and he doesn't like to talk…online is more difficult for him because its more verbal". When asked about what she believed her son would prefer, Destinee thought that he would likely choose virtual, due in part to the convenience and ability to multitask, and in part due to previous difficulties attending the in-person groups: "If I ask him, he will say online, because would just want to go and play video games".

Jennine believed that for older youth, like her son "the online is still useful…but is honing a different kind of social skill," She believed that in-person helped to make youth feel more connected to other group members compared to virtual: "it's different than in-person where you feel more connected to those kinds of groups". In agreement with this, Elanor shared that she felt her daughter was more able to "socially connect on a personal level" with other youth in-person:

> It is how [teenagers] communicate and … they feel more comfortable sometimes communicating this way. As much as I frown upon it at times, if it means that the initial interaction is to go through this particular way. It opens up doors to, hey, now I'm going to do this. And that's what I've noticed from Social ACES, that she was able to become a little bit more outgoing.

That said, Elanor shared the belief that she saw virtual as only "a steppingstone for her, to engage in other ways". Long term, she didn't believe that it was realistic or generalizable to only

practice social skills virtually: “realistically…on the con side, not everyone's going to be hanging out…in the comfort of their home…you need to engage in all different types of settings”. She was concerned that “everybody gets comfortable doing stuff online…almost makes people lazy and not want to try and do anything…”. She shared being able to “see both sides” of virtual, and “wouldn't be opposed to traveling per se” to gain the added benefits of in-person Social ACES.

While the majority of caregivers identified the benefits of in-person over virtual, all were willing to do virtual if the in-person alternative were not available. Jennine acknowledged the benefits of in-person, “…for us that distance is really far…so the benefit of doing the online outweighs the hectic aspects of life to get there”. In contrast to other participants, Cynthia believed that “in-person he might not have gained as much as he did from the virtual program”. Cynthia shared that “…the virtual was really well suited to Cyrus and…one thing that made it better for him was it takes away the number of transitions required”.

2.2 The importance of creating inclusive and safe spaces

Cynthia spoke to her experience as a member of a marginalized community and mother with an autistic youth, which can be more broadly applied to the need for advocacy, inclusiveness, and creating safe spaces for all youth. Cynthia shared that this onus is on institutions and larger societal change makers to make spaces inclusive of all people:

> I'm going to go on a rant here about how there's not enough awareness and opportunities…for autism families, it's like the onus is always on the autistic individual and on the families to find things to adapt, to be socially appropriate to mask behaviour…there needs to be more awareness in the community and in all schools so that it is acceptable...

Cynthia noted the essential role that providers have in modelling and advocating for safe, friendly, and accessible spaces for all:

> If I go back to my own personal experiences, say 20 years…what I thought was the norm, I did not know was actually a racial microaggression…I just thought that's how it is for people who look like me…I think it's the same thing for Cyrus, he wouldn't know to pinpoint that, especially with the social challenges he has. You want to set an environment that makes it safe and friendly for them to do so, then it's the providers or the schools that have to be the first ones to say that.

While Cynthia believed that microaggressions were unintentional by clinicians and believed "that mindfulness and that awareness" was there, she shared that there needed to be more consideration of the cultural competence piece during every session of every group "A lot of learning that needs to happen there…asking is the program culturally competent?". Cynthia believed that a barrier to greater cultural competence and cultural accessibility is that programs "choose not to [tackle cultural competence] because it's a lot of work. I'm sorry, it happens". Cynthia expressed her candid belief:

> There needs to be more diversity in the providers as well…if kids see a reflection of themselves in their schoolteacher, in their therapist…then it's kind of like…they're going to get where I'm coming from. I think that's important…."

2.3 Making the program more available and accessible

Caregivers expressed their desire for the program to be more available and accessible., with more social skills group sessions. Destinee noted that a longer group would allow youth more time to warm up and engage: "Jake, he needs more time…one, two or three meetings…for him to start to talk". Jennine wished the program was longer and available close by "at any

community center…like if they offered at the library … and really easy to access and not…a big [commute]". Jennine believed that the brevity of any "of these programs" was a limitation for this population to acquire skills and generalize them, sharing:

> They're all really valuable because it still gives kids…a chance to figure it out but…it's hard when it's such learned behaviour. To socialize it's not as intuitive as it is for us as some other kids. So, you almost need to be more immersive or for a year. Like 8 weeks…it's not that much…they're just getting comfortable with each other…it could go on for a while to hone some of those skills that they're trying to focus on… just don't know if it translates to success outside of that in a short time.

The youth participants indicated that the program should be lengthened in terms of sessions. Veronica shared that she is "more sociable once they get to know people…when I first meet someone, I'm not that sociable…more shy, but then once I get to know them, I'm more comfortable". Cyrus shared a desire for more and longer sessions: "We should make it like 12 weeks instead... Then we can interact and do more stuff…It should be about 2 hours". Additionally, Veronica shared that she wished that the programming "could be longer and then just stay more in touch with the people and then hopefully there's like more in the future".

2.4 Sustaining attention in the virtual space

Caregivers discussed their difficulties with sustaining their youth's attention and limiting distractions in the virtual space. Destinee explained how it was difficult for youth with ADHD to attend to virtual programming, sharing an experience during a time when "school was online" and her son had pulled his mattress on the floor in front of his computer and "…he started to jump in front of the computer, and he turned the camera off [during class] saying it's hard to stay still". Jennine noted that the general "burnout of…being online all day" made attending the

virtual program difficult for participants, and Elanor also expressed her concern regarding distraction and attention for participants with co-occurring ADHD and ASD:

> Because of all the squares that go on…it could be a little distracting. Because you're looking at this and at that. And when you've got a person on the spectrum who also has ADHD. So, they're busy focusing on this square or that square.

Aware that her son was susceptible to experiencing distraction or boredom, Cynthia shared that her son "knew his door had to always be open because when he got bored, he would switch to other tabs" and she would go in before to make sure tabs were closed and "we were like, no, you actually have to interact on here. And yes, your camera needs to be on each time". As a result, they felt that they were able to help their son with attending and reducing distractions, and this was reflected in Cyrus recounting that he felt better able to attend "because I didn't have any distractions or anything like that…I just focused on the group while I was online".

Mixed-methods analysis of youths' progress in the virtual Social ACES intervention

For this study, I was able to use a mixed-methods approach. There were qualitative accounts recorded by the clinicians, referred to as social competence progress reports. These reports provided information regarding each case study youth's reported reasons for referral, the goals for the youth's participation in the group, and the course of group. I also had access to SSIS SEL pre-post measures on all the youth, completed by their caregivers to consider treatment outcomes. In the section below, I integrate the qualitative and quantitative data to provide a deeper perspective of the youths' progress through the program and challenges experienced within the virtual group programming.

Case Study 1: Jake

Reason for referral and purpose of the group(s): Jake was in one round (eight sessions) of virtual Social ACES. He was referred to support his social competence development (e.g., maintain friendships, willingness to answering questions), social anxiety, and confidence building. Due to previous bullying experiences at school, Jake reportedly lacked confidence to engage with peers.

Course of group(s): Jake participated in a group that consisted of four youth 10 to 13 years of age. Most sessions included a check-in when participants were encouraged to share about their week, as well as games and structured activities to create teachable moments, with clinician coaching to help build social skills. Jake engaged in a variety of icebreaker games to facilitate connections and practice taking risks (e.g., four-pictures, would you rather, eye-spy, puzzles, werewolf) and conversation-based activities (e.g., wavelength, show and share, interviewer). The group focused on conversational skills, listening, and turn taking. Different youth were offered the opportunity to be "co-facilitator" and were coached to ask questions of others, monitor participation, and listen carefully to others' ideas. Feedback and praise were used to support continued participation, risk-taking, and deepen connections.

Treatment outcomes: Jake attended all eight group sessions. He brought a positive and respectful attitude each week. Clinicians noted that he had a successful round of virtual Social ACES, with a positive and respectful attitude each week. He consistently kept his camera and microphone on during group, but his participation in activities appeared to vary based on his understanding and sense of confidence. For example, Jake thrived during visual-based tasks, and would often participate without prompting towards the end of the group. When completing tasks in which he felt confident, Jake engaged in meaningful reciprocal conversation with his peers. In contrast, verbal activities were more challenging. Jake did not participate in these activities

without prompting, and often appeared to lack confidence (e.g., spoke quietly, hesitant). Overall, Jake demonstrated growth in his social confidence over the course of the group, and although he took time to respond to questions thoughtfully, he always provided a response to questions posed by clinicians and peers. With coaching and encouragement, Jake asked some questions of peers when they presented or discussed topics of interest. The clinicians recommended that Jake return for the following virtual Social ACES round, for continued opportunities to develop his confidence and work on his social goals (e.g., taking risks, consistent participation despite self-doubt) with a new social group.

SSIS SEL: His mother's pre-post ratings indicated that Jake had maintained some social skills; however, had decreased in others at post-intervention. On the SSIS SEL at pre-intervention, Jake's standard scores for Self-Awareness, Self-Management and Responsible Decision Making were all Below Average. His scores on Social Awareness and Relationship Skills fell within the average range. As depicted in Figure 4, his parent's ratings indicated no movement in Jake's scores except for Self-Awareness which fell to the Well-below Average range. This low rating indicates that Jake experienced difficulties identifying and understanding emotions, the interplay between emotions and behaviours, and difficulties with evaluating person social-emotion strengths and weaknesses.

Figure 4:

Jakes' pre-post scores on SSIS SEL by Subscales

Comparing perspectives: There were several similarities and differences between the clinician's reports and Jakes' caregiver's pre-post ratings. In line with his caregiver's report of a below average Self-Management and Responsible Decision-Making score, Jake's clinicians noted that he required prompting for participation and did not always respond in a socially normative manner. Clinicians also noted that Jake typically followed rules and acted fairly towards others, in line with the average Social Awareness score that his caregiver provided.

In contrast, clinicians reported that Jake had a successful round of virtual Social ACES overall with several gains and strengths (e.g., social confidence, participation). His caregiver rating, however, did not reflect this success. For example, Jake's caregiver reported a notable reduction in Self-Awareness. Whereas Jake's caregiver's scores reflected average Relationship Skills scores, clinicians noted that he was cooperative but struggled significantly with

communication. Additionally, clinicians noted Jake's overall social gains, which were not reflected by his caregiver's post-treatment ratings.

Case Study 2: Veronica

Reason for referral and purpose of the group(s): Veronica was referred to virtual Social ACES to have a restorative social experience in which she could practice taking social risks, challenge her anxiety, and work on social competence goals (e.g., joining in, initiating conversation, keeping the conversation going, communicating assertively).

Course of group(s): Veronica participated in two (10-week and eight-week) rounds of virtual Social ACES (18 sessions) with six youth (17 to 18 years of age) in the first round and five of the same youth in the second round. The group activities included games (e.g., charades, werewolf, Pictionary, scavenger hunt), conversation-based activities (e.g., spotlight, practice interviews, show and tell) and conversation skills (e.g., initiating conversation, showing an interest in others, keeping a conversation going through asking a question, sharing a related story, complimenting). During the second round, Veronica continued to practice conversation skills through different activities (e.g., responding to a check-in questions; sharing about experiences and belongings that matter to them), as well as additional conversation topics and prompts to encourage dialogue (e.g., "tell us about your favourite activity to do in the summertime?"; "a family trip you took?").

Treatment outcomes: Veronica participated in all group activities, was engaged throughout, and was reported to have had successful rounds of virtual Social ACES. She often required prompts to speak, but when she contributed to conversation it was relevant and engaging. When prompted she took social risks, shared things that were important to her, and was successful at turn taking in all games. Veronica actively listened to others during

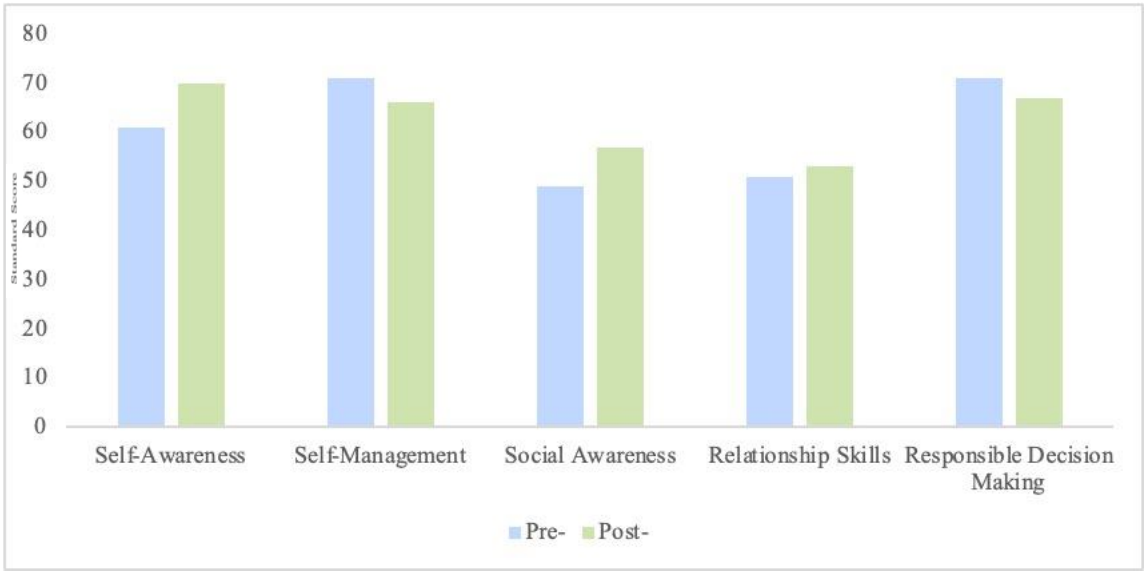
conversation, continuing to maintain attention on conversations even when they went to topics that did not interest her. She showed nonverbal cues (e.g., nodding, eye contact, smiles) that conveyed her interest. Veronica benefitted from staff prompts and feedback, was affirming to others, and was excited to share when asked follow-up questions. Veronica was accepting and warm towards all the other youth, got along with her group members, formed connections, and contributed to the emotional safety and fun of the group. She was able to demonstrate many strengths: attending to others, asking thoughtful follow-up questions, and taking social risks. Veronica was recommended for a second round of virtual Social ACES to continue to practice her conversation skills and work towards implementing these skills more independently. During the second round, when other group members asked her questions or offered compliments, Veronica was able to reflect on how it made her feel comfortable and want to share more. When in smaller groups, Veronica was successful in volunteering her ideas without prompting; she still required some prompting when in the larger group. She was sometimes put on the spot to role-play different conversation skills and share more with the group, taking on the challenge and using all conversation skills effectively. Veronica often deferred to activities that others wanted to do but was able to show assertiveness on her birthday by choosing a game she wanted to play. Following the second session, the staff recommended that her file be closed from virtual Social ACES, as she had reportedly demonstrated many strengths. If interested in future social programming, Veronica was encouraged to join the virtual Camp Towhee program where she could continue to practice taking social risks in a supportive environment.

SSIS SEL: On the caregiver rating, Veronica's standard scores on Self-Management and Responsible Decision Making were Below Average or Well-below Average at both pre- and post-intervention (see Figure 5). While Veronica remained Well Below Average for the Relationship

Skills and Social Awareness SEL skills, her Self-Awareness skills were rated as improved from Well Below Average at pre- to Below Average at post- intervention. In contrast, Veronica's Responsible Decision Making and Self-Management skills decreased to the Well-below Average range from pre- to post-intervention.

Figure 5:

Veronicas' pre-post scores on SSIS SEL by Subscales



Comparing perspectives: There were similarities and differences between Veronicas' clinicians' reports and her caregiver's pre-post ratings. Her caregiver reported limited Self-Awareness skills at pre-intervention and below average skills at post-intervention. Similarly, clinicians noted gains over the group experiences in this domain. Both caregivers and clinicians noted Veronica's difficulties with Relationship Skills at pre-intervention (e.g., often required prompts to speak). Clinicians, but not her caregiver, saw improvements in Veronica's Relationship Skills (e.g., was successful with volunteering her ideas without prompting). An additional inconsistency in reporting was Social Awareness skills, for which clinicians reported notable strengths and gains (e.g., attending to others; asking thoughtful follow-up questions),

whereas the caregiver's ratings reflected a lower level of skill at post intervention. Clinicians noted gains post-intervention whereas Veronica's caregiver's post-intervention scores for Self-Management (e.g., actively listened, continued to maintain attention on conversations even when they went to topics that did not interest her) and Responsible Decision Making (e.g., good nonverbal cues such as nodding, eye contact, and smiles that conveyed her interest; was affirming to others; successful at turn takin) indicated greater social skills deficits (from Below Average to Well Below Average). Similarly, whereas clinicians reported gains in terms of Social Awareness and Relationship Skills, caregivers rated these skills as remaining well below average at post-intervention.

Case Study 3: James

Reason for referral and purpose of the group(s): James participated in one round (10 sessions) of virtual Social ACES. He was referred to the Social ACES group to strengthen his social competence and provide him with a restorative social experience. His social goals were to practice connecting with youth his own age in a safe and welcoming environment. The staff believed that Social ACES would provide a safe and supportive environment that would allow him to connect with other neurodivergent youth with similar interests.

Course of group(s): James participated enthusiastically in the group that consisted of four youth aged nine to 13 years. Most sessions included a "feelings check-in", when participants had an opportunity to share updates about their week (e.g., positive experiences, challenging experiences, feelings regarding the ever-evolving COVID-19 guidelines). Games and structured activities were used to create teachable moments in which participants received coaching and feedback to help build their social skills. James engaged in a variety of icebreaker games to build rapport and practice taking risks (e.g., four-pictures, vehicle thief, password), conversation-based

activities (e.g., wavelength, vehicle thief spotlight), perspective taking, taking turns, and flexible thinking activities.

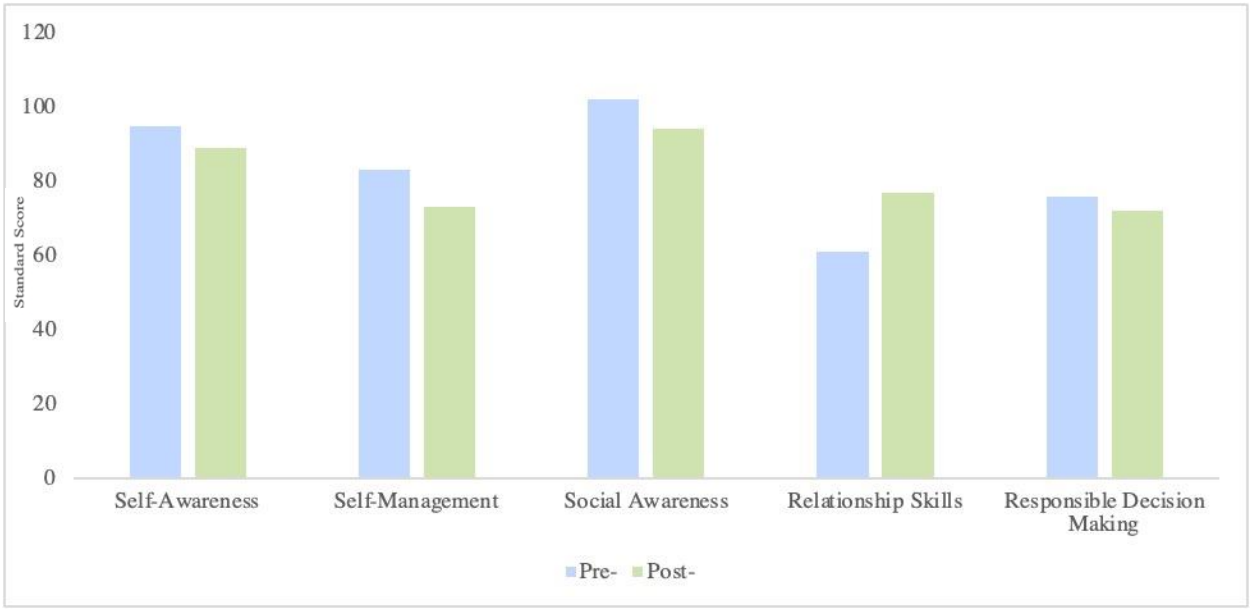
Treatment outcomes: James attended nine of 10 sessions and was reported to be energetic, enthusiastic, and successful in the socially restorative round of virtual Social ACES. That said, he reportedly became dysregulated when receiving feedback, misunderstanding instructions, or arriving late to group. Clinicians reported that validation of emotions, reassurance about the chance to share, parental co-regulation, and instruction focused on prosocial behaviour (e.g., directions around what to do as opposed to what to stop doing) seemed useful for supporting his regulation. James often communicated effectively with his peers and spoke in a confident, assertive tone. When interested in the conversation topic, James was able to share relevant stories and ask follow-up questions to keep the conversation going. When peers or clinicians shared that some of his jokes were not playful, he offered an apology. James got along well with his group members, used humour, and shared interests to connect with others.

At the end of his first group, the clinicians recommended that James continue to engage in a social reparative experience through another round of virtual Social ACES. They also recommended it would be beneficial for him to participate in Young Warriors to further develop self-regulation skills.

SSIS SEL: On caregiver ratings at both pre- and post-intervention, James had average (Self-Awareness, Social Awareness) and below average (Relationship Skills) standard scores for two of the five SEL competence areas. (see Figure 6). In the SEL competence areas of Self-Management and Responsible Decision Making, he fell below average, and for Relationship Skills subscale, James was rated well-below average at pre- and below average at post.

Figure 6:

James's' pre-post scores on SSIS SEL by Subscales



Comparing perspectives: Caregivers and clinicians agreed that James had difficulties with Relationship Skills (e.g., communication) at pre-intervention, and recognized some gains at the end of the intervention (e.g., able to communicate effectively and cooperate with his peers; share relevant stories; ask follow-up questions to keep the conversation going). Similarly, clinicians and caregivers agreed that Jake's Responsible Decision-Making skills (e.g., often not consistent with social norms and expectations) and Self-Management (e.g., struggled with staying calm and avoiding distraction) were well-below to below average at pre- and post-intervention. In line with the caregiver's ratings of below average to average for James's skills, clinicians felt that he could benefit from an additional group of Social ACES for general competence, as well as a group to work on emotion regulation.

Whereas his caregivers reported average Social-Awareness and Self-Awareness skills, clinicians shared that James struggled at pre-intervention with understanding how others feel,

following the rules, and treating others well (e.g., reassurance about the chance to share misunderstanding instructions; did not realize that some of his jokes were not playful) and did not recognize how their emotions could affect others.

Case Study 4: Cyrus

Reason for referral and purpose of the group(s): Cyrus participated in two rounds (18 sessions) of virtual Social ACES. He was referred to the Social ACES group to strengthen his social competence and provide him with a restorative social experience. His goals were to practice appropriate sharing, allow space for others to talk, recognize friendship quality, and work towards understanding his impact on others. The staff believed that virtual Social ACES would provide a safe and supportive environment to enable him to connect with other neurodivergent youth with similar interests.

Course of group(s): Cyrus participated in two rounds (10-week and eight-week) of the Social ACES, each of which consisted of four youth aged nine to 13 years of age. The majority of sessions for both rounds included a "feelings check-in", when participants shared updates about their week (e.g., positive experiences, challenging experiences, feelings regarding the ever-evolving COVID-19 guidelines).Cyrus engaged in a variety of icebreaker games to build rapport and practice taking risks (e.g., four-pictures, vehicle thief, password), conversation-based activities (e.g., wavelength, vehicle thief spotlight), as well as perspective taking, turn taking, and flexible thinking activities.

Treatment outcomes: Cyrus attended all 18 sessions, had a positive attitude each week, and was reported to have had two successful rounds of virtual Social ACES. Cyrus was able to demonstrate respectful communication, practice turn taking, and gain a better understanding of friendship quality through conversation-based games. Clinicians reported that Cyrus showed

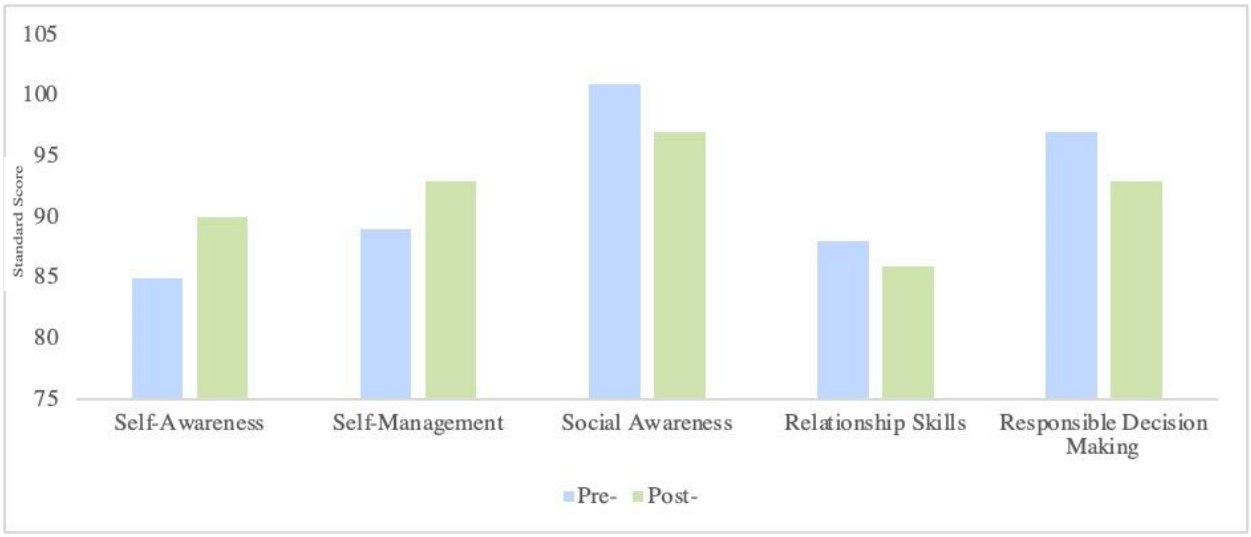
interest and attentiveness during the group, although he appeared to struggle with attention and self-control (e.g., interrupting other youth, making comments that could be perceived as critical, requesting screen access). Once group safety and trust had been established, Cyrus showed gains in effective and friendly communication, was able to express his emotions and respond to others empathically, particularly around shared COVID-19 experiences. When interested in the topic, Cyrus was able to ask follow-up questions, keep the conversation going, and form connections. The clinicians shared several techniques that helped Cyrus with perspective taking, sharing the talking space, identifying and shifting responses based on context accurately, engaging respectively with peers, and being more thoughtful about what he shared with the group (e.g., repeating and posting instructions in chat; in-the-moment directions and examples of what entails a meaningful follow-up question; conversation around shared interests/experiences; asking direct questions; providing clear and descriptive information; questions to challenge rigid thinking).

At the end of his first group, Cyrus participated in an additional round of Social ACES to strengthen his social competence (e.g., appropriate sharing, reading social cues, allowing space for others to talk, recognize the difference between a good friend and a bad friend, understanding his impact on others, using humour appropriately) and have a restorative social experience in the second round of virtual Social ACES. At the end of the second group, the staff recommended the Mindfulness Martial Arts program to further develop Cyrus's social competence skills, understanding the impact of his actions on others, and learn to persevere through moments of boredom. In addition, Cyrus was referred to the Camp Towhee program, where the staff believed, he could continue developing social competence skills and social bonds in a supportive environment.

SSIS SEL: On his parent's rating of social skills, Cyrus's standard scores at both pre- and post-intervention remained typical for his age, with no noteworthy changes (see Figure 7).

Figure 7:

Cyrus's pre-post scores on SSIS SEL by Subscales



Comparing perspectives: Clinicians reported that the group provided a restorative social experience, which is consistent with the pre-post caregiver scores indicating maintenance of Cyrus's social skills over time. Both parent and clinicians noted relative gains in terms of Self Awareness at post intervention, with clinicians recommending continuing work on emotion recognition (e.g., appropriate sharing, understanding his impact on others, using humour appropriately) and how his emotions impact other youth. Caregiver scores suggest that Cyrus's Self-Management, Social Awareness, Responsible Decision Making and Relationship skills did not change notably from the average range through the programming; however, clinicians' reports indicated otherwise. Clinicians reported that Cyrus struggled with these three domains at pre-intervention benefited from social coaching (e.g., sharing the talking space, identifying, and shifting responses based on context accurately, engaging respectively with peers, and being more thoughtful about what he shared with the group). In contrast to his caregiver's ratings, clinicians

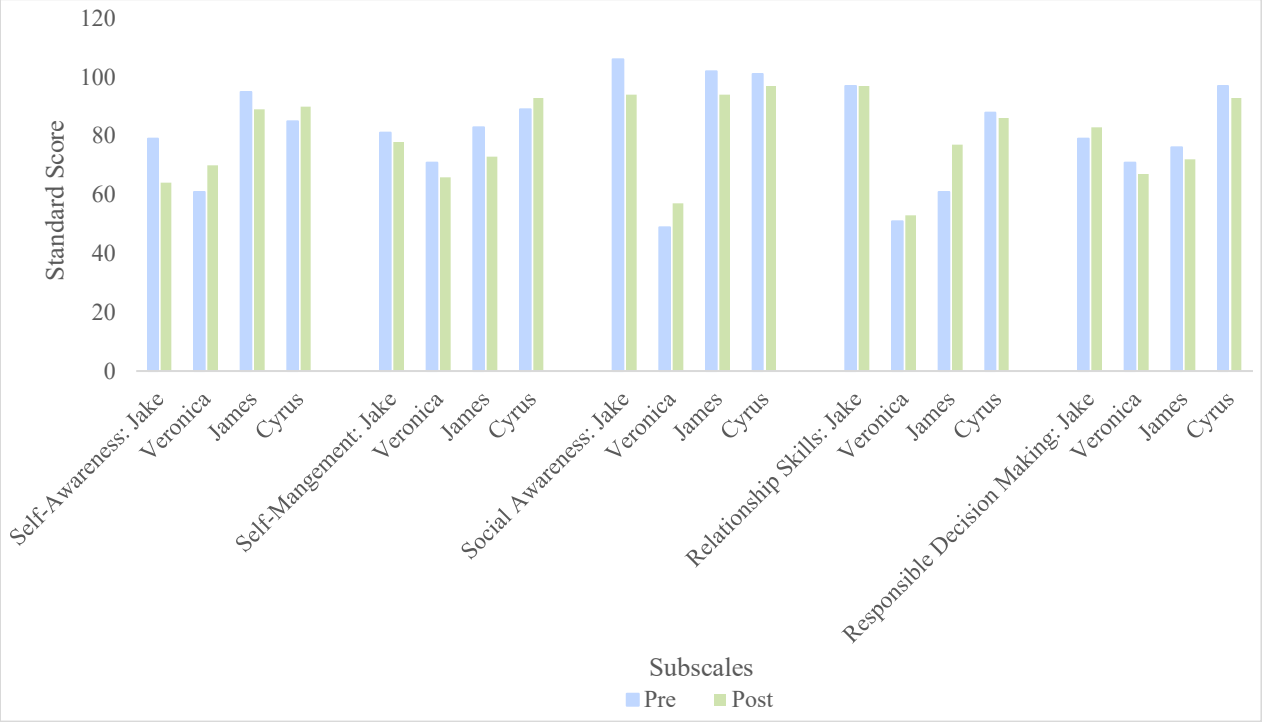
suggested that Cyrus had notable gains. They recognized, however, that Cyrus would benefit from additional services to enhance his social competence even after two sessions. There were still concerns about his social behaviours (e.g., interrupting other youth, making comments that could be perceived as critical, requesting screen access, reading social cues, allowing space for others to talk, recognize the difference between a good friend and a bad friend).

Overall Analysis of Case Studies

When taking all case study mixed-method data together, there appears to be marked inconsistencies between caregivers and providers' reporting. In general, clinicians' reports tended to highlight notable improvements of social skills over the course of the groups for all youth. In contrast, caregiver pre-post outcome ratings suggested limited change from pre- to post-intervention overall, along with a handful of notable increases and decreases in social skills (see Figure 8). While participants did note some pre-post differences, these were not consistent between and within participants and domains; there was no notable trend in the data.

Figure 8:

Case Study Participants pre-post scores on SSIS SEL by Subscales



Discussion

Telepsychology-based interventions such as virtual Social ACES have afforded a lifeline for many caregivers and youth during the COVID-19 pandemic (Gale et al., 2020). At this time, there are only a few preliminary empirical studies of telepsychology group-based social skills interventions for children and adolescents(Estabillo et al., 2022; Gale et al., 2020; MacEvilly & Brosnan, 2020). Given the emerging research on the acceptability, feasibility, and effectiveness of telepsychology group-based interventions for adults prior to and during the pandemic (Gentry et al., 2019; Nauphal et al., 2021), there was a need to explore the viability of virtual group interventions for youth. This mixed-methods study was designed to explore the feasibility, acceptability, and effectiveness of delivering a group-based social competence program to youth with LDMH via telepsychology in a community child mental health agency. Specifically, the objectives of the current study were to understand caregivers and youths' perception of the feasibility and acceptability of the virtual Social ACES intervention through qualitative inquiry and investigating the program's effectiveness though quantitative analysis.

A Feasible and Acceptable Social Competence Program for Youth with LDMH

All caregivers in the current study expressed a great deal of appreciation and acceptance of virtual Social ACES as an essential social program during the COVID-19 pandemic. While all youth experienced negative mental health impacts due to the public health restrictions and virtual learning (Verlenden et al., 2021), the interruption of social interactions and normal routines was particularly distressing (e.g., anxiety, frustration) for youth with special educational needs (Ahmed et al., 2020; Alexander et al., 2020; Al-Farsi et al., 2016; Deeb et al., 2022; Lee, 2020; Nauphal et al., 2021; Thompson et al., 2020; Verlenden et al., 2021). During the pandemic, these youth had worse mental health and quality of life outcomes (Asbury et al., 2021; Tso et al.,

2022). Youth with co-occurring mental health and developmental difficulties experienced major struggles with the pivot to remote learning (Deeb et al., 2022). With an increased demand for mental health services and social supports and a scarcity of services due to public health restrictions, caregivers were unanimous in their agreement that a telepsychology alternative was preferred over no services at all. Both caregivers and youth appreciated the increased convenience and accessibility of virtual services, a finding that is consistent with a small body of research (Gale et al., 2020; Mootz et al., 2022).

With stay-at-home orders and school closures, caregivers in the current study reported increased burdens and stress during the pandemic (e.g., demands of caregiving, telework, home-schooling, concern about infection, socioeconomic concerns) (Deeb et al., 2022; Fong & Iarocci, 2021; Marchetti et al., 2020; Muñoz-Fernández & Rodríguez-Meirinhos, 2021; Wang et al., 2020). They identified the virtual Social ACES intervention as providing limited, but coveted respite from the multiple roles they were filling in lieu of typical social structures and supports (e.g., school, recreational programming). Other studies have indicated similar trends with caregivers experiencing greater perceived stress during the pandemic, especially when they were responsible for children with developmental needs (Cheng & Lai, 2023). Caregivers' appreciation for the break that virtual Social ACES offered is also consistent with a recent systematic review by Cheng and Lai (2023), who identified telepsychology interventions as a possible approach to reduce socioeconomic risk factors that contribute to parental stress.

Caregivers expressed concerns for youth burnout associated with virtual schooling during the pandemic. Youth school burnout during the COVID-19 pandemic (Meylan et al., 2011; Salmela-Aro et al., 2008; Slivar, 2001; Virtanen et al., 2018) has been linked to youth perceived stress; academic and learning difficulties (Kiuru et al., 2011); perceived lack of support from

peers, teachers, and parents; as well as increased academic demands associated with COVID-19 interruptions (Deeb et al., 2022). Caregivers recognized virtual Social ACES as a welcomed difference from virtual schooling in which their youth experienced burnout. Other research during the pandemic indicated that parents were dissatisfied and experienced moderate to severe burdens associated with virtual schooling (Rathaliya et al., 2022). In the present study, it appeared that additional virtual programming did not increase burnout for youth and their caregivers. Conversely, the virtual nature of this telepsychology intervention was accepted by caregivers and youth because it helped to reduce youths' perceived stress and provided peer support. In line with this finding, Lacombe et al.'s (2023) paper illustrated that an intervention targeting the four factors for burnout, including perceived stress, was beneficial for youth during the pandemic (Lacombe et al., 2023). Samela-Aro et al. (2023) also recommended the need for social-emotional interventions to promote emotional and behavioural coping as a means to reduce perceived stress and burnout (Haig-Ferguson et al., 2021; Salmela-Aro et al., 2021). In the current study, youth with LDMH who were experiencing academic, social competence, and peer relationship difficulties, benefitted in many ways by participating in the virtual Social ACES intervention during a period of mental health service scarcity, despite quantitative caregiver ratings that did not indicate notable improvement.

Caregivers shared that virtual Social ACES provided a critical sense of consistency, during a period where there was significant disruption in routine for both caregivers and youth (Deeb et al., 2022). The importance of consistency and routine is highlighted in the World Health Organizations' (2020) mental health guidelines for youth, which included the importance of stay-at-home routines and structure with a range of activities to reduce the risk of psychological distress during the restrictive public health measures (e.g., exercise, homework, hobbies). Virtual

Social ACES served as an additional structured activity during an extended stay-at-home period. Caregivers also appreciated being able to check in with clinicians to discuss their youth, have contact with other adult, and feel supported in their own mental health. A recent study by Deeb et al. (2022) found that disruption to youths' routine significantly impacted caregiver mental health difficulties (e.g., higher risk of caregiver anxiety, depression, PTSD, stress). When youth lost their daily routines of school and after-school programming and were unable to go outside to play with peers, their caregivers were at risk for anxiety and PTSD (Deeb et al., 2022).

Caregivers and youth in the present study indicated that the virtual Social ACES intervention could be improved with a greater number of sessions. They anticipated many benefits associated with more sessions and/or additional rounds of group. These included: time needed to open up and engage due to anxiety, need for continued social skill practice, limited services and natural opportunities for social practice, limited community, and caregiver reprieve. It appears that both caregivers and youth may have favoured an increased number of sessions due to the continual need to practice social skills in different contexts for generalization of skills and competence.

Perceived Inclusion and Exclusion Factors for Virtual Social ACES

One of the youths with LDMH with co-occurring ASD and social anxiety articulated why the virtual programming was better, due to an: increased capacity to connect socially through a digital medium, increased ability to engage in a safe home environment, and reduced social exposure. This youth's perspective is in line with the research indicating that telepsychology services for youth with anxiety and/or ASD may be more accessible in terms of social style (e.g., preferring virtual to face-to face, interests, strengths, and visual learning) (Boydell et al., 2010; Pacifici et al., 2006). Youth with ASD tend to be more engaged when learning activities are

augmented with technology in virtual programming (Goodwin, 2008; Kimball & Smith, 2007). Future studies should consider the feasibility, acceptability and effectiveness of virtual Social ACES as a group-based approach for youth with ASD.

Youth in the study believed that they were able to build and/or maintain friendships via virtual Social ACES (Gibson, 2021). Although research prior to the pandemic indicates an association between increased screen time and difficulties making friends, recent research indicates potential positive social impacts of digital technology in supporting socializing and learning during a period of social distancing and isolation (Hedderson et al., 2023). With youths' increased rates of screen time during the pandemic and in line with other research (Hedderson et al., 2023), there is a need for future research on the effectiveness of telepsychology interventions such as virtual Social ACES for building and maintaining friendships (Twenge & Campbell, 2018).

Caregivers' Focus on Equitable Access of Programming

Telepsychology programming has the potential to increase accessibility of mental health services and reduce inequities in mental health services for youth who have historically faced barriers to mental health access due to socioeconomic disparities (Mseke et al., 2023). For example, telepsychology-based interventions are proposed as an approach to reduce parental stress, due to its ability to reduce barriers to access (e.g., travel, distance, cost) (Cheng & Lai, 2023; Whiteside-Mansell et al., 2007). Caregivers' chronic stress is associated with negative mental health of both the caregivers and their youth, particularly those who experience socioeconomic barriers that increase risk for academic and health disparities (McKnight-Eily et al., 2021; Russell et al., 2020). There is substantial evidence on the link between increased parental stress and youth mental health problems (Mohammadipour et al., 2021; Neece et al.,

2012; Roccella et al., 2022; shiralinia et al., 2019; Van Loon et al., 2017), as well as on the link between poor parent-child relationships and youth mental health problems (Khodabakhshi-Koolaee & Malekabadi, 2020; Oh et al., 2019; Savell et al., 2019). Therefore, there is a need to continue offering and evaluating accessible telepsychology programming, such as virtual Social ACES, in an attempt to improve the wellbeing of families who experience greater socioeconomic and other disparities (Cheng & Lai, 2023).

Although the virtual Social ACES intervention was accepted as a feasible program by all, caregivers provided a number of recommendations to enhance accessibility of the programming. They highlighted the importance of equitable access to services, the need for greater inclusivity and safety for all participants, and the importance of advocacy. One of the caregivers discussed unintentional microaggressions and how these may result in reduced effectiveness (e.g., reduced feeling of social connection) of social programming for racial-ethnic minoritized youth with LDMH. The present findings reflect several barriers to mental health access for racial-ethnic minoritized youth identified by Fante-Coleman & Jackson-Best (2020), including: systemic barriers (e.g., financial, geographical), practitioner-related barriers (e.g., absence of culturally competent care, absence of organizational support, discrimination from providers), and stigma (Fante-Coleman & Jackson-Best, 2020).

Was Virtual Social ACES Effective for Youth with LDMH?

One of the major strengths of the current study was the use of a mixed-methods approach to evaluate the virtual Social ACES intervention. To the best of our knowledge, this is one of only four studies to have collected and analysed quantitative data to evaluate a telepsychology group-based social competence programs for neurodiverse youth, with the other three considering different PEERS® program adaptations for ASD youth (Estabillo et al., 2022; Fante-

Coleman & Jackson-Best, 2020; Lee et al., 2023; Płatos et al., 2023). To the best of our knowledge, this is also the first mixed-methods study to consider a telepsychology group-based social competence program, as well as the only study of a telepsychology intervention adaptation for youth with LDMH. The use of both qualitative and quantitative approaches provides a deeper exploration of research questions than one approach alone.

The mixed-methods approach allowed for analysis, comparison, and contrast between caregiver pre-post treatment ratings of youths' social-emotional capacities and clinicians' qualitative summaries of each youth, to explore program effectiveness. There was a notable difference between the clinicians' positive reports for each youth at the end of group, and the inconsistent caregivers' pre-post ratings of their youth's social competence. The discrepancies between the caregivers and clinicians' perspectives could be explained by a lack of generalizability of social skills outside of the virtual Social ACES groups. Clinicians were assessing improvements within a narrow 60-minute window that was structured, supportive and was joined in the comfort of youths' rooms. In contrast, caregivers' assessments were likely based on youths' social skills displayed over broader times and contexts.

Caregivers' ratings may also have been influenced by their own stress and mental health during the pandemic. Although caregivers' ratings of their youth's social competence were generally low, the majority of caregivers spoke about their youth's social skill improvements in relation to Social ACES. This discrepancy may indicate the caregivers' reduced stress at the time of interview, which may have been influenced additional factors (e.g., caregivers feeling heard and acknowledged during the interview, interview after height of pandemic stress compared vs. pre-post measures). In future research on virtual Social ACES, it will be important to use data from multiple sources (e.g., pre-post caregiver, youth, and teacher ratings; brief post-intervention

interviews with parents, clinicians, and youth) for triangulation and cross-checking. Additional quantitative outcome measures could be employed and completed by clinicians to provide further insight into improvements through the program.

The caregivers' pre-post ratings may indicate that the virtual Social ACES intervention was effective in preserving the social competencies of youth with LDMH through a highly disruptive period. The LDMH population was at increased risk for social isolation, increased loneliness, and lagging short and long-term social skill development during the pandemic lockdown. Given these risks, one might expect caregivers' ratings to have indicated reductions in the social skill domains over the pandemic. Instead, the lack of notable change or negative trends through the intervention may indicate maintenance of social competence, particularly in light of caregivers' stress during COVID-19, which could have skewed their ratings.

Limitations

A limitation of the current study was the lack of youth voices in the qualitative findings. Despite interviewing an equal number of caregivers and youth, the majority of youth provided limited responses in terms of both quantity and meaningfulness. The limited responses from the younger participants may be related to their developmental stage, cognitive factors (e.g., memory, processing speed) and the length of time that had elapsed since their participation in the virtual program. The older youth with greater cognitive capacities were able to provide more substantial responses during the interviews. Future feasibility, acceptability and effectiveness research would benefit from more substantial youth voices, perhaps with repeated brief, developmentally appropriate interviews. Youths' perspectives could also be enhanced by a quantitative youth self-report measure at pre-post intervention.

Final Considerations

In contrast to caregivers' quantitative pre-post ratings of social-emotional skills, the majority of caregivers and their youth were positive about the social gains associated with virtual Social ACES, supporting the feasibility of the program. This finding is in line with the limited number of preliminary studies considering feasibility and acceptability of telepsychology social competence programming. Caregivers recognized the positive impact of their youth's interaction with same-aged peers during the pandemic. Through moments of reassurance, such as first-hand observations of social improvements and second-hand confirmation from family members, during a period that was full of uncertainty and social losses, the virtual Social ACES intervention provided caregivers coveted and rare moments to see progress and social success.

Overarching Discussion

Feasibility and Acceptability of Virtual Social ACES

There was a significant decline in mental health service availability and utilization during the pandemic, both locally (Ontario, Canada) and globally (Stewart et al., 2022), amidst the increasing risk of vulnerability of youth to mental health problems during this period (Clemens et al., 2020; Courtney et al., 2020; Loades et al., 2020). Caregivers and clinicians spoke of the scarcity of opportunities for youth to engage in social skills development during the pandemic, and concerns around their decline in social skills. This concern is validated by recent findings of reduced natural socializing opportunities for social skills development during the pandemic (Sakız, 2022), resulting in increased social isolation and a lag in social skills development (Cameron & Tenenbaum, 2021; Hernández & Jabbari, 2022; Rauschenberg et al., 2021). For children and youth, the impact of COVID-19 on short and long-term social skill development may have been especially concerning given the importance of peer relationship during this sensitive developmental period (Asbury et al., 2021; Hernández & Jabbari, 2022). During the pandemic, learning activities (Hernández & Jabbari, 2022), peer interactions (Maleki et al., 2019), and extra-curricular activities (Durlak & Weissberg, 2007) were positively related to social skill development, whereas screen time was not associated with social skills development. In line with these findings, virtual Social ACES was one of very few restorative extra-curricular activities that provided peer interaction and learning activities (e.g., social modelling, corrective social experiences) for the youth participants during the pandemic. Consistent with research on the effects of social isolation and loneliness on youth with neurodevelopmental disabilities, including those with LDMH, clinicians and caregivers in the current study expressed significant

concerns about the long-term negative effects (e.g., mental health, behaviour, psychosocial and emotional development) of social isolation and loneliness on children with LDMH.

Since there was a critical need to fill the social and mental health service gap, caregivers and clinicians accepted virtual Social ACES as a feasible service during the pandemic. All caregivers and most clinicians preferred in-person services, which they believed comprised a more effective social skills intervention. While the majority of clinicians and caregivers perceived the virtual Social ACES intervention as less effective for youth with LDMH, they recognized that it might be the most acceptable, feasible, and effective option for populations with barriers to accessing in-person mental health services (e.g., those with severe anxiety; socio-economic; geographical limitations). Clinicians and caregivers were uncertain about the future acceptability, feasibility, and effectiveness of virtual Social ACES due to the drastic reduction in demand for virtual services once the public health restrictions were lifted and in-person programming returned. Future studies comparing the effectiveness of virtual and in-person Social ACES intervention for youth with LDMH would be beneficial to help elucidate the potential treatment response based on the mental health service modality (Estabillo et al., 2022).

Accessibility Considerations

Compared to in-person services, telepsychology services, such as virtual Social ACES, have the potential for greater privacy and flexibility, which can reduce barriers such as perceived public and internalized stigma associated with seeking mental health services (Fortney et al., 2011). Reducing potential stigma is an important aspect of reducing barriers to service access for racial-ethnic minoritized youth (Fortney et al., 2011; Hilty et al., 2020; Willis et al., 2022). Although there is a growing recognition that encompassing culture into mental health services is critical, the majority of telepsychology studies with youth have not considered the specific needs

of racial-ethnic minoritized youth (Chavira et al., 2022; Cook et al., 2017; Willis et al., 2022). The rapid shift to telepsychology services during the pandemic occurred with limited consideration, direction, and prioritization of cultural responsiveness. Although Ramos and Chavira (2022) suggest that creating culturally adapted evidence-based telepsychology services may not be feasible, they recommend practices for research intended to improve telepsychology outcomes for racial-ethnic minoritized youth (e.g., collecting demographics of study participants, ability of behavioural intervention technology to reduce barriers to access, technology comfort level, considering cultural variables. To continue improving accessibility of programming moving forward, it will be essential for CDI and similar services to explore the potential of sustaining virtual programming training, and policies that are culturally attuned.

Although virtual delivery improved access for many youths and families, clinicians noted the inherent inequity in virtual services for those who were marginalized. Consistent with other research, clinicians in the current study noted that virtual programming posed significant barriers to participation for youth living in crowded dwellings (Perry, 2023; Wood et al., 2020) with limited access to broadband internet and/or suitable devices, as well as concerns about privacy and confidentiality (Perry, 2023). These are important issues to explore in future research on virtual programming, given the historical and current inequities in access to services for marginalized communities.

Suitability for Virtual Social ACES

In the present study, caregivers and clinicians believed that the virtual adaptation of Social ACES was more developmentally attuned, meaningful, and engaging for older youth, due to their familiarity with virtual games and lower levels of physical play. This finding is in line with recent studies considering clinicians' perceptions of delivering telepsychology interventions

(Rathaliya et al., 2022; Romanchych et al., 2022; Simms et al., 2011). Clinicians in the present study believed that the virtual Social ACES intervention was more developmentally appropriate for older youth because they were more engaged, better able to regulate their emotions and attention, more verbally inclined, and more motivated (Cunningham et al., 2021; Hoffnung et al., 2021; Romanchych et al., 2022). The clinicians' perspectives were aligned with Gale et al.'s (2020) report of difficulties engaging middle-school youth due to frequent multi-tasking with other distracting games or tasks during sessions. Similarly, van Rooij et al. (2023) reported difficulties in building rapport with children and adolescents in the virtual context due to attention difficulties, reduced regulation capacities, concerns around privacy and confidentiality, and greater caregiver involvement needed to support using the technology (van Rooij et al., 2023).

Caregivers and clinicians in the present study believed that the virtual environment aligned with the capacities of older youth, for whom the verbally loaded nature of games and activities in the virtual space were more developmentally appropriate. Research predating the widespread pivot to telepsychology interventions suggests that over 35% of youth between the ages of 14 to 25 years of age preferred online options for seeking mental health support (Kauer et al., 2014; Orsolini et al., 2021). Clinicians in the present study also believed that virtual interventions are more developmentally appropriate and accessible for older youth due in part to increased familiarity, and utilization of social media and other online platforms as a means to socialize (Kauer et al., 2014; Orsolini et al., 2021).

Conversely, caregivers and clinicians found the virtual context less feasible and developmentally attuned for effectively engaging younger children in the Social ACES intervention. In a study of children with neurodevelopmental disabilities, Hosley (2022) noted

that only 30% of parents believed that virtual services were feasible, effective, and engaging for their children, who were on average 9.7 years (standard deviation= 3.8, range= 2.17). The virtual Social ACES clinicians perceived the provision of telepsychology for younger children with neurodevelopmental disorders as less effective than being in-person, due to the children's limited attentional and regulation capacities, and reduced engagement. They noted that the virtual context, without the opportunity for physical play, was difficult for young children (Hosley, 2022).

Both caregivers and clinicians reported youths' difficulties sustaining attention in the virtual environment. Attentional difficulties were most often reported regarding youth who had concurrent ADHD and/or ASD. This finding aligns with preliminary studies of telepsychology social competence programs for neurodiverse youth (e.g., sibling interruptions) (Valentine et al., 2021). Youth, however, did not report difficulties attending to the programming. Despite caregivers and clinicians being concerned about attention, the majority of clinicians, caregivers and youth reported that the 60-minute duration of individual sessions was ideal for engagement and sustained attention. In contrast, Lee et al. (2023) found that youth in the PEERS® program reported difficulties attending for the full 90 minutes. Therefore, the findings of the current study suggest that 60 minutes may be more feasible for these youth to attend to a telepsychology intervention.

According to clinicians and caregivers in the present study, the convenience and flexible nature of the virtual context made it more accessible to youth with LD and anxiety, who may have been unable to participate in in-person Social ACES intervention. They posited that the virtual intervention could be applied as a lower-level exposure for youth whose anxiety impedes their ability to attend in-person groups. In this way, the virtual context could be a steppingstone

to in-person Social ACES. While limited, there is emerging literature to support this opportunity, with virtual programming allowing participants to engage in exposure that may otherwise not be possible, due to the safety and comfort of delivery in their own home (Peros et al., 2021). Although telepsychology may increase access for youth who otherwise would not be able to participate in programming due to the severity of their anxiety, clinicians and caregivers were also concerned about the opportunity for avoidance in the virtual environment.

Limitations

With the rapid pivot to telepsychology services, the current Social ACES intervention did not take cultural competence factors into consideration when planning and implementing the program. This oversight can create new access and engagement barriers for racial-ethnic minoritized youth with the potential of reducing their responsiveness to the intervention (Schueller et al., 2019; Willis et al., 2022). Future programming and research should integrate cultural competence training and components in programming to reduce access barriers for racial-ethnic minoritized youth.

Due to the naturalistic and preliminary nature of this study, the sample size was small, clinician, caregiver and youth gender was relatively homogenous, and no comparison group was included. Therefore, future empirical investigations of virtual Social ACES would benefit from inclusion of waitlist and/or active control arms, with a robust and diverse sample size, with a control group should be conducted to substantiate the generalizability of the current findings. For households where there are two primary caregivers, future investigations would benefit from augmenting quantitative and qualitative data from both primary caregivers (Cheng & Lai, 2023; Hadadian, 1994). This would allow for further breadth and depth of comprehension and substantiation of caregivers' perspectives.

Within the virtual space, clinicians lacked confidence in their abilities to ensure an equitable level of safety, privacy, and confidentiality. CDI took a significant number of preparatory steps to ensure, to the best of their abilities, that the virtual platform chosen for mental health service provision was compliant with the PHIPPA, and that the platform was in line with the institution's privacy, safety, and confidentiality guidelines. Consistent with previous studies (Barnett & Kolmes, 2016), however, clinicians still raised issues with the ability to comply with PHIPPA and ensure safety, privacy, and confidentiality in the virtual space. In an attempt to further ensure PHIPPA compliance, programming could include clear and defined rules and procedures for ensuring privacy and confidentiality of youth during sessions (e.g., having youth use headphones to improve confidentiality; notify caregivers that youth require a private and separate space for all sessions; use waiting room each session for clinician to confirm youth safety and privacy; require audio and visual to be on for the totality of the session; require backgrounds be blurred to improve privacy). In addition to this, it is essential that clinicians apprise caregivers of potential limitations and risks of telepsychology treatment and maintain a vigilant approach to ensure compliance with PHIPPA (Gale et al., 2020; Parsons, 2021).

Caregivers and youth did not raise concerns about the platform's privacy and safety, inconsistent with previous telepsychology intervention studies. This positive finding may reflect CDIs preparatory work to ensure safety, confidentiality, and privacy for youth and families. That said, future research will be required to elucidate methods and approaches to ensure PHIPPA compliance for clinicians and confidentiality, privacy, and safety for youth to be able to engage fully in virtual mental health services without associated fear of confidentiality and privacy being breached and subsequent potential stigma.

Lastly, generalization of the findings beyond the COVID-19 pandemic is also cautioned, due to the current data being gathered during the pandemic and accompanying mandatory public health measures.

Final considerations

Clinicians and caregivers believed that the small dosage associated with the telepsychology adaptation was not substantive enough to generalizable to real life. While the feasibility and efficacy of telepsychology and in-person interventions were contrasted by caregivers and clinicians, there is potential utility in both programs. Telepsychology programs such as virtual Social ACES could provide an effective gradual exposure, in preparation for the in-person context. The reduced social exposures during the COVID-19 pandemic naturally led to increased accommodation of anxiety through social avoidance for many youths. In the long term, prolonged avoidance increased the challenges for youth with mental health problems as they transitioned back to in-person services following the pandemic (Peros et al., 2021). Therefore, lower dosage interventions such as virtual Social ACES may be an effective option for youth with moderate to severe mental health difficulties that benefit from exposure therapy. There is a need for future research into the potential benefits and challenges for exposure via telepsychology (e.g., novelty of telepsychology being anxiety provoking) (Khan et al., 2022). In addition, there is a need to explore virtual programming as a gradual steppingstone to in-person intervention for youth with social anxiety problems.

Lastly, it is important to consider this research in the context of an unprecedented moment in history. Social and essential services, such as mental health agencies and providers had to pivot rapidly to meet the needs of children, youth, and families. Simultaneously, many researchers and studies at this time were also required to pivot, with the need for empirical

research exploring the very new ways of providing services. Therefore, by its very nature, this naturalistic experiment was a preliminary investigation of a new means of service delivery in a very disrupted period of time. As such, there is a need for more systematically developed programming and associated research to support the development of children and youth struggling with learning disabilities and mental health challenges.

Overarching Conclusion

These studies helped to clarify clinicians' experiences of pivoting and adapting an in-person social competence program, caregivers, and youths' experiences with participating in a telepsychology social competence adaption, and the feasibility, acceptability and effectiveness of the virtual Social ACES during the COVID-19 pandemic. First, the virtual Social ACES intervention was perceived by clinicians, caregivers, and youths as an essential telepsychology intervention during a period of increased mental health burden, parental stress, scarcity of social supports, lack of routine, and uncertainty. Virtual Social ACES was unequivocally feasible and acceptable during the COVID-19 pandemic, based on the qualitative IPA analyses of clinician, caregiver, and youth with LDMH experiences in the two studies.

It is important to keep in mind that the virtual program was perceived by caregivers and clinicians as more feasible and acceptable for older youth with higher cognitive and emotion regulation capacities. This resulted in barriers to access for youth with LDMH who historically were beneficiaries of the in-person Social ACES service, specifically youth with greater emotion dysregulation, reduced cognitive capacities, and higher acuity of mental health difficulties. At the same time, the telepsychology modality of virtual Social ACES reduced barriers to participating in the program for youths limited by severe anxiety, geography, lack of transportation, and/or socioeconomic challenges posed by in-person services.

With clinicians and caregivers suggesting an overall preference for in-person services following the pandemic, this present study is limited in foreshadowing the feasibility, acceptability, and effectiveness of the virtual Social ACES intervention in the future. During the pandemic, the virtual Social ACES intervention offered an essential alternative to the in-person modality, especially for youth and families who experience barriers to accessing mental health

services. Future research is needed to determine for whom this telepsychology-based intervention will be feasible, acceptable, and effective, including considerations of the program's culture attunement and suitability for racial-ethnic minoritized youth.

The mixed-methods design and analysis of effectiveness in Study 2 was also nuanced. The quantitative outcome data completed by caregivers at pre-post intervention (SSIS SEL) indicated no marked differences in their youths' social competence from the beginning to the end of the intervention. Nevertheless, it is important to consider these quantitative findings within the context of youth with LDMH and social skills during the pandemic, and the acute perspectives of the Social ACES clinicians. Youth with LDMH were at increased risk for social isolation, loneliness, and lagging short and long-term social skill development, along with increased risk for mental health difficulties. Therefore, while the virtual Social ACES intervention did not result in notable improvements in social competence from pre- to post-intervention, the intervention appeared to be effective overall, in maintaining social competence skills during a period when youth with LDMH were expected to experience lagging short- and long-term social skills. This conclusion is reinforced by clinicians' progress reports that highlighted youths' many social gains during the Social ACES sessions. These studies have provided preliminary in-depth evidence for the feasibility, acceptability, and effectiveness of virtual Social ACES. These studies have begun to shed light on the rapid pivot to virtual services for a youth experiencing both learning and mental health difficulties. This research also raises many questions about the effectiveness of social-emotional programming during a time of significant disruption, which points to several lines of inquiry for future critical research on virtual interventions for children and youth.

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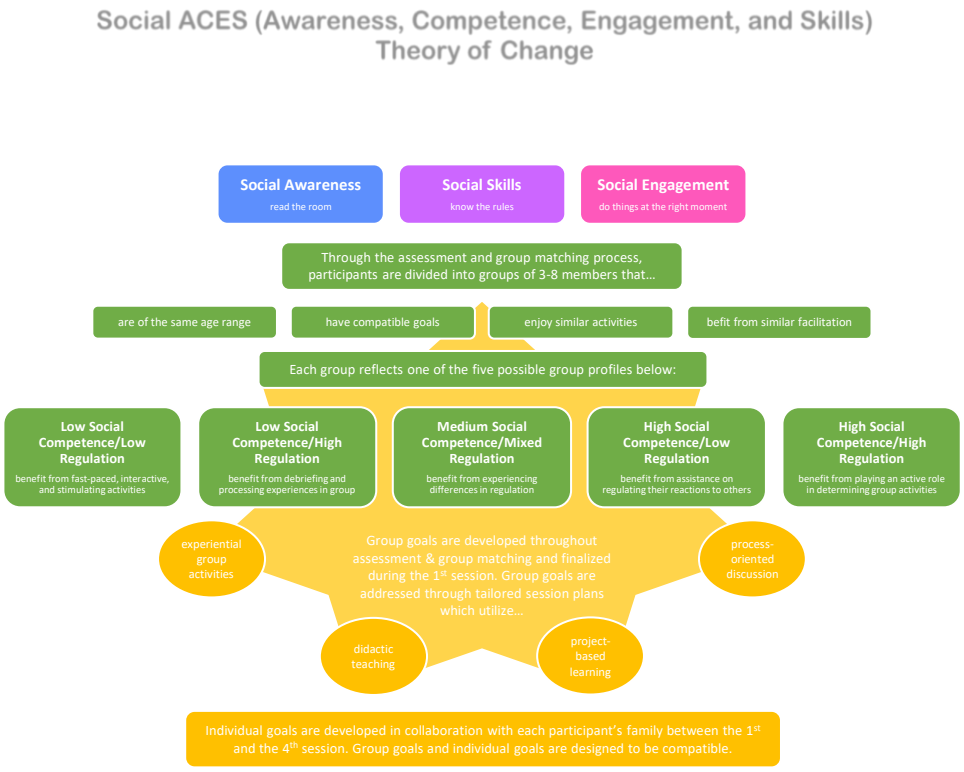
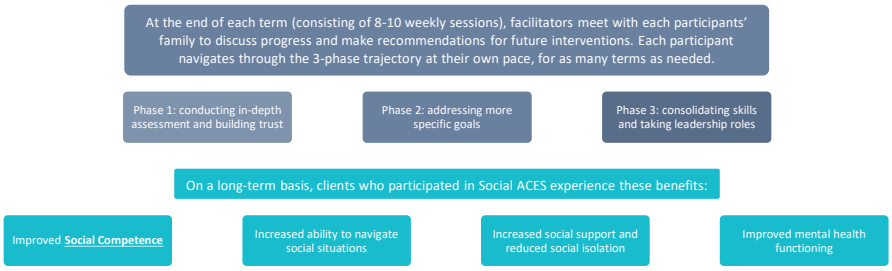
Appendices

Appendix A: Social ACES Theory of Change





Appendix B: Semi Structured Interview Schedule for Staff

Section 1: Exploring the experiences of clinicians who had to pivot and adapt to a virtual service delivery during the COVID-19 lockdown (process evaluation)

Researcher to participant: "To answer these questions, I will ask you to think back to 2020, and particularly when the virtual adaptation of Social ACES was proposed. As you think back, I will ask you to consider the adaptation of the program in totality (e.g., recruitment, assessment, matching, clinical meetings, technology)":

1. Can you tell me about what was happening with Social ACES services prior to the adaptation?
    - Possible prompts: What happened? How did you feel? What questions did you have?
2. Can you tell me about when you initially found out that Social ACES would be being adapted as an online service?
    - Possible prompts: What happened? How did you feel? What questions did you have? What was your involvement in this process?
3. Can you tell me about your role (if any) in the adaptation of the Social ACES virtual adaptation?
    - Possible prompts: What happened? How did you feel? Would you have wanted more or less of a role?
4. Can you tell me about what the clinical considerations that were key in adapting the virtual intervention?
    - Possible prompts: Was the theory of change considered? Were aspects of social information processing factor considered?
5. How did you pivot from in-person Social ACES to virtual Social ACES program delivery?
    - Possible prompts: How did you go from in-person to virtual? What was needed to change to move from face-to-face to virtual. What modifications? Manual?
6. Can you tell me whether maintaining fidelity from the in-person program was considered when adapting the program?
    - Possible Prompts: Were Social ACES theory of change considered? Was Social Information Processing considered?
7. Can you tell me about the initial perceived pros of adapting to a virtual program?
    - Possible prompts: What was exciting or positive about this? How did you feel? How did you cope? What happened?
8. Can you tell me about any initial perceived con's regarding the adaptation of the program?
    - Possible prompts: What were barriers or concerns about this?? How do you feel about these changes? What happened?

Section 2: Exploring the experiences of clinicians in delivering the virtual Social ACES programs during the COVID-19 lockdown (process evaluation)

Researcher to participant: "To answer these questions, I will ask you to consider your experiences since beginning to deliver the first round of Social ACES virtual therapy to currently":

1. Can you tell me what was different about the delivery of the virtual service compared to the in-person?
    - Possible prompts: How long ago? What do you think brought this about? How did you figure out things were and weren't working?
2. Can you tell me about your experience with WebEx?
    - Prompts: What did you like/dislike about delivering therapy online? What were your thoughts about the chat function? Engagement issues/benefits (e.g., audio-visual issues/benefits)? What were your thoughts about assessments on WebEx? What did you like/dislike about clinical meetings online?
3. Can you tell me what is the same about the delivery of the virtual service compared to the in-person?
    - Possible prompts: In what ways? Does anything make it better? Does anything make it worse? How do you feel about these changes?
4. Can you tell me about any perceived pros of adapting to a virtual program?
    - Possible prompts: What was exciting or positive about this? How did you feel? How did you cope? What happened? Any perceived pros re: technology? work from home?
5. Can you tell me about any perceived con's regarding the adaptation of the program?
    - Possible prompts: What were barriers or concerns about this? How do you feel about these changes? What happened? Any perceived pros re: technology? work from home?
6. What do you think was done well during the adaptation?
    - Possible prompts: In what ways? Why do you believe this? What made it positive? What happened?
7. What do you think could have been done differently during the adaptation?
    - Possible prompts: In what ways? Would anything make it better?

Section 3: Exploring clinicians experiences and perceptions of for whom the virtual Social ACES program is efficacious and developmentally attuned

Researcher to participant: "To answer these questions, I will ask you to consider your experiences since the program began to be adapted to currently, including experiences running different groups".

1. Can you tell me whether you think that fidelity was maintained between the virtual and in-person groups?
    - If yes: How / in which ways do you think fidelity was maintained? What was important to the maintenance of fidelity?
        - *Possible Prompts: Was the Social ACES theory of change and/or Social Information Processing integral in this? Why do you believe this to be the case? What are experiences/examples that lead you to believe this?*
    - If no: Why / in which ways do you think fidelity was not maintained? What would need to be done to improve fidelity?
        - *Possible Prompts: Why do you believe this to be the case? What are experiences/examples that lead you to believe this? Would the inclusion of Social ACES theory of change and/or Social Information Processing be integral in this?*
2. Can you tell me about whether you believe that the virtual program was accepted by:
    - Staff?

- Clients and families?
- *Prompts: Why do you believe this to be the case? What are experiences/examples that lead you to believe this?*

3. Can you tell me about any important lessons learnt from adapting a program from an in-person service to a virtual adaptation?
    - *Prompts: Why do you believe this to be the case? What are experiences/examples that lead you to believe this? What happened? How did you feel?*
4. Can you tell me which type of participants (e.g., neurocognitive, mental health) and or facilitators, this virtual program adaptation is well suited for?
    - *Prompts: Why do you believe this to be the case? What are experiences/examples that lead you to believe this? What happened?*
5. Can you tell me which type of participants (e.g., neurocognitive, mental health) and or facilitators this virtual program adaptation is not well suited??
    - *Prompts: Why do you believe this to be the case? What are experiences/examples that lead you to believe this? What happened?*

Appendix C: Brief Semi Structured Interview Schedule for Case Study Participants

Researcher to participant: "We hope to learn how youths' experiences were with the virtual Social ACES program, to help make future groups for other teens even better. Since you sat through the virtual Social ACES sessions recently, you are an expert on this program and your thoughts on this group matter to us. I am going to ask you some easy questions about your experience with these sessions, it should take between 5 to 30 minutes. We really just want to know what your experience was.

1. What were some things you liked/enjoyed about virtual Social ACES?
    a. *Possible prompts: What would you keep the same? What was exciting or positive about this program? How did you feel? What happened?*

2. What were some things that you found tough or did not like about virtual Social ACES?
    a. *Possible prompts: What would you get rid of or change? What was boring or not great about this program? How did you feel? What happened?*

3. *Did you like using WebEx online?*
    a. *Possible prompts: Were there any positive or negative things about using the technology? What did you think about the chat function? Did you have any internet issues, computer issues, or WebEx issues?*

4. Did you enjoy taking part in virtual Social ACES?
    a. *Possible prompts: Rating out of 5 (1= didn't enjoy it at all, 3= it was alright, 5= loved it)? Elaborate on the rating (what did you enjoy or not like)? What could have made it better? What were barriers or difficult about the group? How would you improve sessions?*

5. Did you feel like virtual Social ACES was helpful in you working towards for your social skills goals?
    a. *Possible prompts: Rating out of 5 (1= not helpful at all, 3= it helped somewhat, 5= really helpful)? Elaborate on the rating (what was helpful or not helpful)? What were your goals and how did the program help with them?*

6. Was this your first-time taking part in Social ACES group that you have been part of?
    - *If yes: Skip to final question.*
    - *If no:*
        - *Prompts: Have you taken part in virtual or in-person Social ACES before? How was your experience compared to the other Social ACES experience? What was better/easier? What was worse/harder? How so?*

7. Is there anything else you would like to share with us about your virtual Social ACES experience?
    a. *Possible prompt: Anything that I forgot? Anything that is important to help us make the next groups even better for other teens?*

Appendix D: Staff Informed Consent Form

HRPC #:
Study Title: A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic
Principal Researcher: Benjamin Diplock, M.A.
Revision Date: November 30, 2021

Informed Consent Form

Study Title: A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic

Principal Researcher: Benjamin Diplock, M.A., York University

The Research Team:

Name/Degree	E-mail
Benjamin Diplock, M.A. *Clinical Developmental Psychology, York University*	bdiplock@yorku.ca
Dr. Samantha Yamada, Ph.D., C.Psych *Director of Program Development, Research, and Quality Improvement, Child Development Institute*	syamada@childdevelop.ca
Dr. Debra Pepler, O.C., Ph.D., C.Psych *Distinguished Research Professor of Psychology, Clinical Psychologist, York University*	pepler@yorku.ca

1. Researchers' Statement:

You have the option of joining a research study. This is an informed consent form. It provides a summary of the information the research team may discuss with you. If you decide that you are interested in taking part in this study, you would sign this form to confirm your decision. If you sign this form, you will receive a signed copy for your records.

If you would prefer the research team to explain this study to you over the phone or by WebEx, you can email Benjamin Diplock, M.A. at bdiplock@yorku.ca requesting a verbal read through of the consent form. If you have additional questions or would like clarification regarding the consent form, you may also request a phone or video call with Benjamin Diplock.

2. What you should know about this study:

- This form explains what would happen if you join this research study.
- Please read it carefully. Take as much time as you need.
- Please ask the research team questions about anything that is not clear.
- You can ask questions about the study any time.
- If you choose not to be in the study, it will not negatively affect you in anyway.
- If you say 'Yes' now, you can still change your mind later.
- You can quit the study at any time.
- You would not be penalized if you decide not to take part in the study or quit the study later.

3. Purpose of the Research:

The goal of any research study is to answer questions. We (the research team listed on the front of this form) are doing this research study to answer three main questions:

- [First question] Is the Learning Disabilities and Mental Health (LDMH) virtual Social Awareness, Competence, Engagement, Skills (ACES) program accepted by participants and clinicians?
- [Second question] Are there some youth and clinicians for which the virtual Social ACES program is more efficacious?
- [Third question] Is there ways that the virtual Social ACES program can be improved?

4. Why do I have the option of joining the study?

You have the option to take part in this research study because you are (or have been) a virtual Social ACES group clinical team member who has been part of the development and/or implementation, and/or have ran virtual Social ACES groups.

5. How many people will take part in the study?

We think that up to 10 clinical team members will take part in this research study.

6. What You Will Be Asked to Do in the Research?

If you are taking part in the one-on-one interview portion of this study:

- You would be agreeing to complete a 30 to >60-minute one-on-one semi-structured interview that will include broad and open-ended questions. We hope that through these questions, we will gain a better understanding of clinical team members perceptions of the LDMH Social ACES group development, implementation and delivery.
- You would be agreeing to the recording (audio-visual) of the aforementioned interview and the research team members ability to access and store these videos following the interview.

If you are a facilitator of a virtual Social ACES group that is being recorded:

- You would be agreeing to the recording (audio-visual) of and the research team members ability to have access to the eight-week virtual Social ACES group sessions.

7. Risks and Discomforts

Potential psychological and social risks are minor and unlikely for the current study.

Minor psychological risks: Distress/discomfort to the awareness that the interview and/or LDMH Social ACES sessions are being recorded may occur. To manage this psychological risk, consent – to recording – is an ongoing process which may be cancelled at any time. In addition, the data is only being reviewed by the research team, and all platforms utilized (e.g., WebEx, secure shared drive) are highly secure platforms. The risks are minor and not beyond what occurs in daily clinical practice.

Minor social risks: There is a risk that your confidentiality or privacy could be breached. This would mean that someone other the research team or our collaborators may find out that you

were in the research or see your answers or medical information. However, we will take every precaution to make sure that this does not happen.

8. What are the potential benefits if I join this study?

Potential Benefits for Others: By participating in this study, you will be contributing to research that may improve therapy service accessibility and general outcomes for children with Learning Disabilities. We hope to use information we get from this study to benefit others children and teens who have Learning Disabilities, as well as clinicians delivering this service.

Potential Benefits for You: We do not expect this study to benefit you.

9. Voluntary Participation and Withdrawal

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to consent to being recorded, to stop participating, or to refuse to answer particular questions will not result in any negative consequences now, or in the future.

In the event you withdraw from the study, all associated data collected will be destroyed upon request, wherever possible. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

10. How would you keep my information confidential?

If you take part, we will make every effort to keep your information confidential. Confidentiality will be provided to the fullest extent possible.

We will not put your name on any research data. Instead, we will label your information with a study number. The master list that links a person's name to their study number is stored in a separate secure password protected file on a secure server.

How will data be collected?

- The data will be collected through the secure WebEx platform (recordings), and will be stored by the research team. Your data will be safely transferred and stored in a secure (non-cloud based) server and only the research team will have access to this information.
- This study will use the secure WebEx platform to collect data, which is an externally hosted cloud-based service. When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g., government agencies, hackers). Further, while York University researchers will not collect or use IP addresses or other information which could link your participation to your computer or electronic devices without informing you, there is a small risk with any platform such as this of data that is collected on external servers falling outside the control of the research team. If you are concerned about this, we would be happy to make alternative arrangements (where possible) for you to participate, perhaps via telephone. Please contact the researcher for further information.

How will data be securely stored?

- To ensure anonymity, all documents containing participant identifying information will be stored separately from any identifying information, anonymized and giving a coded ID number for matching purposes only.

- All electronic study data will be stored on an institutional local secure server – not cloud based service – that can only be accessed by members of the research team. All files, including recordings (audio/video), will be saved in a password protected file.
- Recordings (audio/video) will be saved in a password protected file to research team members' local computer, not the cloud-based service. Please note that it is the expectation that participants agree not to make any unauthorized recordings of the content of a meeting / data collection session.
- Any relevant data that is securely stored at CDI (e.g., clinical meeting notes, questionnaires) related to the study will be digitized and uploaded onto the secure server restricted for the research team only.

How long will data be collected and stored?

- Your electronic research data will be stored until January 2026 (3 years), at which time it will be destroyed.

Will data be destroyed? If so, how?

- Your research data will be destroyed. We will uninstall any applications and operating systems used, and "scrub"/"overwrite" the local disks, using software tools that will overwrite the disks' contents dozens of times, rendering the disk contents practically unrecoverable.

If results of this research are published, we would not use information that identifies you.

11. Would I be paid if I join this study?

You will not be paid to take part in this study.

12. Questions about the Research?

If you have questions about the research in general or about your role in the study, please feel free to contact me at bdiplock@yorku.ca or my supervisor, Dr. Debra Pepler at pepler@yorku.ca. You may also contact the Graduate Program in Psychology at gradpsyc@yorku.ca and/or 416-736-5290.
This research has received ethics review and approval by the Delegated Ethics Review Committee, which is delegated authority to review research ethics protocols by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca).

13. What would my signature on this form mean?

Your signature on this form would mean:

- The research study was explained to you.
- You had a chance to ask all the questions you have at this time. All your questions have been answered in a way that is clear.
- You understand that the persons listed on this form will answer any other questions you may have about the study or your rights as a research study participant.
- By signing this consent form, you do not give up any of your legal rights. The researcher(s) or sponsor(s) are not relieved of any liability they may have.

14. Legal Rights and Signatures

I _____, consent to participating in "A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic" conducted by Benjamin Diplock. In particular, I consent to:

☐ I consent to the recording (audio-video) of the one-on-one semi-structured interview session
☐ I consent to the recording (audio-video) of virtual Social ACES sessions of which I am facilitator for.

I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form.

My signature below indicates my consent to recording the indicated (marked; e.g., ✓, X, ■) recordings above.

Participant Name: _____

_____
Printed Name of Clinical Team Member

_____
Signature of Clinical Team Member

_____ _____
Date *Time*

15. Researcher's Signature

I have fully explained the research study described by this form. I have answered the participant and/or parent/guardians' questions and will answer any future questions to the best of my ability. I will tell the family and/or the person taking part in this research of any changes in the procedures or in the possible harms/possible benefits of the study that may affect their health or their willingness to stay in the study.

_____
Printed Name of Researcher Obtaining Informed Consent

_____
Signature of Researcher Obtaining Informed Consent

_____ _____
Date *Time*

Appendix E: Social ACES Youth (16+) Informed Consent Form

HRPC #:
Study Title: A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic
Principal Researcher: Benjamin Diplock, M.A.
Revision Date: November 30, 2021

Informed Consent Form

Consent Form: Ages 16 – 18
Substitute Informed Consent & Assent Form: Ages 13 – 15

Study Title: A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic

Principal Researcher: Benjamin Diplock, M.A., York University

The Research Team:

Name/Degree	E-mail
Benjamin Diplock, M.A. *Clinical Developmental Psychology, York University*	bdiplock@yorku.ca
Dr. Samantha Yamada, Ph.D., C.Psych *Director of Program Development, Research, and Quality Improvement, Child Development Institute*	syamada@childdevelop.ca
Dr. Debra Pepler, O.C., Ph.D., C.Psych *Distinguished Research Professor of Psychology, Clinical Psychologist, York University*	pepler@yorku.ca

1. Researchers' Statement:

You have the option of joining a research study. This is an informed consent form. It provides a summary of the information the research team may discuss with you. If you decide that you are interested in taking part in this study, you would sign this form to confirm your decision. If you sign this form, you will receive a signed copy for your records.

If you would prefer the research team to explain this study to you over the phone or by WebEx, you can email Benjamin Diplock, M.A. at bdiplock@yorku.ca requesting a verbal read through of the consent form. If you have additional questions or would like clarification regarding the consent form, you may also request a phone or video call with Benjamin Diplock.

2. What you should know about this study:

- This form explains what would happen if you join this research study.
- Please read it carefully. Take as much time as you need.
- Please ask the research team questions about anything that is not clear.
- You can ask questions about the study any time.
- If you choose not to be in the study, it will not affect your care at Child Development Institute (CDI).
- If you say 'Yes' now, you can still change your mind later.
- You can quit the study at any time.

- You would not be penalized if you decide not to take part in the study or quit the study later.

3. Purpose of the Research:

The goal of any research study is to answer questions. We (the research team listed on the front of this form) are doing this research study to answer three main questions:

- [First question] Is the Learning Disabilities and Mental Health (LDMH) virtual Social Awareness, Competence, Engagement, Skills (ACES) program accepted by participants and clinicians?
- [Second question] Are there some youth and clinicians for which the virtual Social ACES program is more efficacious?
- [Third question] Is there ways that the virtual Social ACES program can be improved?

4. Why do I have the option of joining the study?

You have the option to take part in this research study because you are taking part in an eight-week virtual Social ACES group at CDI and are between the age of 13 to 18.

5. How many people will take part in the study?

We think that about four to six people will take part in this research study.

6. What You Will Be Asked to Do in the Research?

If you join the study:

- You would be allowing the recording (audio-visual) of and research team members access to the recordings of your eight-week virtual Social ACES group sessions.
- You would be allowing the research team to have access to your LDMH Social ACES related health documentation/files (e.g., caregiver report, questionnaires, clinical notes, psychoeducation assessment).
- You would be agreeing to take part in a recorded one-on-one feedback interview that will be virtual (WebEx), following the completion of the eight-week group. This interview would be with a research team member and would be brief (five to 30 minute long).

Otherwise, this study does not ask you to do anything differently than the typical virtual Social ACES standard of care. No additional time commitment is required of participants to partake in this study.

7. Risks and Discomforts

Potential psychological and social risks are minor and unlikely for the current study.

Minor psychological risks: Distress/discomfort related to the awareness that the virtual Social ACES sessions and interview are being recorded and data is being accessed may occur. To manage this psychological risk, consent – to recording and/or data review – is an ongoing process which may be cancelled at any time. In addition, the data is only being reviewed by the research team, and all platforms utilized (e.g., WebEx, secure shared drive) are highly secure platforms. The risks are minor and not beyond what occurs in daily clinical practice.

Minor social risks: There is a risk that your confidentiality or privacy could be breached. This would mean that someone other the research team or our collaborators may find out that you were in the research or see your answers or medical information. However, we will take every precaution to make sure that this does not happen.

8. What are the potential benefits if I join this study?

Potential Benefits for Others: By participating in this study, you will be contributing to research that may improve therapy service accessibility and general outcomes for children with Learning Disabilities. We hope to use information we get from this study to benefit others children and teens who have Learning Disabilities.

Potential Benefits for You: We do not expect this study to benefit you.

9. Voluntary Participation and Withdrawal

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to consent to being recorded or sharing your data, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the Social ACES staff, or the nature of your relationship with the Social ACES team now, or in the future.

In the event you withdraw from the study, all associated data collected will be destroyed upon request, wherever possible. To ensure continued service provision, if you decide to withdraw consent after sessions have begun, the clinical team will reallocate you to one of the non-recorded Social ACES groups. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

10. How would you keep my information confidential?

If you take part, we will make every effort to keep your information confidential. Confidentiality will be provided to the fullest extent possible.

We will not put your name on any research data. Instead, we will label your information with a study number. The master list that links a person's name to their study number is stored in a separate secure password protected file on a secure server.

How will data be collected?

- The data will be collected through the secure WebEx platform (recordings), and Child Development Institution clinical data will be shared between CDI and the research team. Your data will be safely transferred and stored in a secure (non-cloud based) server and only the researcher team will have access to this information.
- This study will use the secure WebEx platform to collect data, which is an externally hosted cloud-based service. When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g., government agencies, hackers). Further, while York University researchers will not collect or use IP addresses or other information which could link your participation to your computer or electronic devices without informing you, there is a small risk with any platform such as this of data that is collected on external servers falling outside the control of the research team. If you are concerned about this, we would be happy to make alternative arrangements

(where possible) for you to participate, perhaps via telephone. Please contact the researcher for further information.

How will data be securely stored?

- To ensure anonymity, all documents containing participant identifying information will be stored separately from any identifying information, anonymized and giving a coded ID number for matching purposes only.
- All electronic study data will be stored on an institutional local secure server – not cloud based service – that can only be accessed by members of the research team. All files, including recordings (audio/video), will be saved in a password protected file.
- Recordings (audio/video) will be saved in a password protected file to research team members' local computer, not the cloud-based service. Please note that it is the expectation that participants agree not to make any unauthorized recordings of the content of a meeting / data collection session.
- Any relevant data that is securely stored at CDI (e.g., clinical meeting notes, questionnaires) related to the study will be digitized and uploaded onto the secure server restricted for the research team only.

How long will data be collected and stored?

- Your electronic research data will be stored until January 2026 (3 years), at which time it will be destroyed.

Will data be destroyed? If so, how?

- Your research data will be destroyed. We will uninstall any applications and operating systems used, and "scrub"/"overwrite" the local disks, using software tools that will overwrite the disks' contents dozens of times, rendering the disk contents practically unrecoverable.

If results of this research are published, we would not use information that identifies you.

11. Would I be paid if I join this study?

You will not be paid to take part in this study.

12. Questions about the Research?

If you have questions about the research in general or about your role in the study, please feel free to contact me at bdiplock@yorku.ca or my supervisor, Dr. Debra Pepler at pepler@yorku.ca. You may also contact the Graduate Program in Psychology at gradpsyc@yorku.ca and/or 416-736-5290.
This research has received ethics review and approval by the Delegated Ethics Review Committee, which is delegated authority to review research ethics protocols by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca).

13. What would my signature on this form mean?

Your signature on this form would mean:

- The research study was explained to you.

- You had a chance to ask all the questions you have at this time. All your questions have been answered in a way that is clear.
- You understand that the persons listed on this form will answer any other questions you may have about the study or your rights as a research study participant.
- By signing this consent form, you do not give up any of your legal rights. The researcher(s) or sponsor(s) are not relieved of any liability they may have.

14. Legal Rights and Signatures

I _____, consent to participate in "A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic" conducted by Benjamin Diplock. I have understood the nature of this project and wish to participate. I am aware that I am not waiving any of my legal rights by signing this form.

Audio and video recording

☐ I consent to the recording (audio-video) of my virtual Social ACES sessions.
☐ I consent to the recording (audio-video) of the one-on-one semi-structured interview session

My signature below indicates my consent.

Participant Name: _____

_____
Printed Name of Consenting Youth Participant

_____
Signature of Consenting Youth Participant

_____ _____
Date *Time*

15. Researcher's Signature

I have fully explained the research study described by this form. I have answered the participant and/or parent/guardians' questions and will answer any future questions to the best of my ability. I will tell the family and/or the person taking part in this research of any changes in the procedures or in the possible harms/possible benefits of the study that may affect their health or their willingness to stay in the study.

_____
Printed Name of Researcher Obtaining Informed Consent

_____
Signature of Researcher Obtaining Informed Consent

_____ _____
Date *Time*

Appendix F: Social ACES Substitute Decision Maker Informed Consent Form

Substitute Consent Form

Consent Form: Ages 16 – 18
Substitute Informed Consent & Assent Form: Ages 13 – 15

Study Title: A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic

Principal Researcher: Benjamin Diplock, M.A., York University

The Research Team:

Name/Degree	E-mail
Benjamin Diplock, M.A. *Clinical Developmental Psychology, York University*	bdiplock@yorku.ca
Dr. Samantha Yamada, Ph.D., C.Psych *Director of Program Development, Research, and Quality Improvement, Child Development Institute*	syamada@childdevelop.ca
Dr. Debra Pepler, O.C., Ph.D., C.Psych *Distinguished Research Professor of Psychology, Clinical Psychologist, York University*	pepler@yorku.ca

1. Researchers' Statement:

The word **"you"** in this form refers to your child/teen.

You have the option of having your child or teen join a research study. This is a parental permission form. It provides a summary of the information the research team may discuss with you. If you decide that your child can take part in this study, you would sign this form to confirm your decision. If you sign this form, you will receive a signed copy for your records.

If you would prefer the research team to explain this study to you over the phone or by WebEx, you can email Benjamin Diplock, M.A. at bdiplock@yorku.ca requesting a verbal read through of the consent form. If you have additional questions or would like clarification regarding the consent form, you may also request a phone or video call with Benjamin Diplock.

2. What you should know about this study:

- This form explains what would happen if you join this research study.
- Please read it carefully. Take as much time as you need.
- Please ask the research team questions about anything that is not clear.
- You can ask questions about the study any time.

- If you choose not to be in the study, it will not affect your care at Child Development Institute (CDI).
- If you say 'Yes' now, you can still change your mind later.
- You can quit the study at any time.
- You would not be penalized if you decide not to take part in the study or quit the study later.

3. Purpose of the Research:

The goal of any research study is to answer questions. We (the research team listed on the front of this form) are doing this research study to answer three main questions:

- [First question] Is the Learning Disabilities and Mental Health (LDMH) virtual Social Awareness, Competence, Engagement, Skills (ACES) program accepted by participants and clinicians?
- [Second question] Are there some youth and clinicians for which the virtual Social ACES program is more efficacious?
- [Third question] Is there ways that the virtual Social ACES program can be improved?

4. Why do I have the option of joining the study?

You have the option to take part in this research study because your child is taking part in an eight-week virtual Social ACES group at CDI and is between the age of 13 to 18.

5. How many people will take part in the study?

We think that about four to six people will take part in this research study.

6. What You Will Be Asked to Do in the Research?

If you join the study:

- You would be allowing the recording (audio-visual) of and research team members access to the recordings of your eight-week virtual Social ACES group sessions.
- You would be allowing the research team to have access to your LDMH Social ACES related health documentation/files (e.g., caregiver report, questionnaires, clinical notes, psychoeducation assessment).
- You would be agreeing to take part in a recorded one-on-one feedback interview that will be virtual (WebEx), following the completion of the eight-week group. This interview would be with a research team member and would be brief (five to 30 minute long).

Otherwise, this study does not ask you to do anything differently than the typical virtual Social ACES standard of care. No additional time commitment is required of participants to partake in this study.

7. Risks and Discomforts

Potential psychological and social risks are minor and unlikely for the current study:

Minor psychological risks: Distress/discomfort related to the awareness that the LDMH Social ACES sessions and interview are being recorded and data is being accessed may occur. To

manage this psychological risk, consent – to recording and/or data review – is an ongoing process which may be revoked at any time. In addition, the data is only being reviewed by the research team, and all platforms utilized (e.g., WebEx, secure shared drive) being highly secure platforms. The risks are minor and not beyond what occurs in daily clinical practice at CDI.

Minor social risks: There is a risk that your confidentiality or privacy could be breached. This would mean that someone other the research team or our collaborators may find out that you were in the research or see your answers or medical information. However, we will take every precaution to make sure that this does not happen.

8. What are the potential benefits if I join this study?

Potential Benefits for Others: By participating in this study, you will be contributing to research that may improve therapy service accessibility and general outcomes for children with Learning Disabilities. We hope to use information we get from this study to benefit others children and teens who have Learning Disabilities.

Potential Benefits for You: We do not expect this study to benefit you.

9. Voluntary Participation and Withdrawal

Your participation in the study is completely voluntary and you or they may choose to stop participating at any time. The decision not to consent to being recorded or sharing their data, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the Social ACES staff, or the nature of your relationship with the Social ACES team now, or in the future.

In the event you withdraw from the study, all associated data collected will be destroyed upon request, wherever possible. To ensure continued service provision, if you decide to withdraw consent after sessions have begun, the clinical team will reallocate you to one of the non-recorded Social ACES groups. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

10. How would you keep my information confidential?

If you take part, we will make every effort to keep your information confidential. Confidentiality will be provided to the fullest extent possible.

We will not put your name on any research data. Instead, we will label your information with a study number. The master list that links a person's name to their study number is stored in a separate secure password protected file on a secure server.

How will data be collected?

- The data will be collected through the secure WebEx platform (recordings), and Child Development Institution clinical data will be shared between CDI and the research team. Your data will be safely transferred and stored in a secure (non-cloud based) server and only the researcher team will have access to this information.
- This study will use the secure WebEx platform to collect data, which is an externally hosted cloud-based service. When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g., government agencies, hackers). Further, while York University researchers will not collect or use IP addresses or other information which could link your participation to your computer or

electronic devices without informing you, there is a small risk with any platform such as this of data that is collected on external servers falling outside the control of the research team. If you are concerned about this, we would be happy to make alternative arrangements (where possible) for you to participate, perhaps via telephone. Please contact the researcher for further information.

How will data be securely stored?

- To ensure anonymity, all documents containing participant identifying information will be stored separately from any identifying information, anonymized and giving a coded ID number for matching purposes only.
- All electronic study data will be stored on an institutional local secure server – not cloud based service – that can only be accessed by members of the research team. All files, including recordings (audio/video), will be saved in a password protected file.
- Recordings (audio/video) will be saved in a password protected file to research team members' local computer, not the cloud-based service. Please note that it is the expectation that participants agree not to make any unauthorized recordings of the content of a meeting / data collection session.
- Any relevant data that is securely stored at CDI (e.g., clinical meeting notes, questionnaires) related to the study will be digitized and uploaded onto the secure server restricted for the research team only.

How long will data be collected and stored?

- Your electronic research data will be stored until January 2026 (3 years), at which time it will be destroyed.

Will data be destroyed? If so, how?

- Your research data will be destroyed. We will uninstall any applications and operating systems used, and "scrub"/"overwrite" the local disks, using software tools that will overwrite the disks' contents dozens of times, rendering the disk contents practically unrecoverable.

If results of this research are published, we would not use information that identifies you.

11. Would I be paid if I join this study?

You will not be paid to take part in this study.

12. Questions about the Research?

If you have questions about the research in general or about your role in the study, please feel free to contact me at bdiplock@yorku.ca or my supervisor, Dr. Debra Pepler at pepler@yorku.ca. You may also contact the Graduate Program in Psychology at gradpsyc@yorku.ca and/or 416-736-5290.
This research has received ethics review and approval by the Delegated Ethics Review Committee, which is delegated authority to review research ethics protocols by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca).

13. What would my signature on this form mean?

Your signature on this form would mean:

- The research study was explained to you.
- You had a chance to ask all the questions you have at this time. All your questions have been answered in a way that is clear.
- You understand that the persons listed on this form will answer any other questions you may have about the study or your rights as a research study participant.
- By signing this consent form, you do not give up any of your legal rights. The researcher(s) or sponsor(s) are not relieved of any liability they may have.
- If the person reading this form is a parent/guardian, you agree to have your child take part in this research study.

Please Note: If the person taking part in this research study is a foster child or a ward of the state, then please tell the researcher or their staff.

14. Legal Rights and Signatures

I _____, consent to my

child/teen _____
participating in "A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic" conducted by Benjamin Diplock.

I have understood the nature of this project and wish for my child to participate. I am aware that I am not waiving any of my legal rights by signing this form.

Audio and video recording

☐ I consent to the recording (audio-video) of my child/teens' virtual Social ACES sessions.
☐ I consent to the recording (audio-video) of my child/teens' one-on-one semi-structured interview session.

My signature below indicates my consent.

Participant Name: _____

_____
Printed Name of Parent or Legal Guardian

_____
Signature of Parent or Legal Guardian

_____ _____

Date *Time*

15. Researcher's Signature

I have fully explained the research study described by this form. I have answered the participant and/or parent/guardians' questions and will answer any future questions to the best of my ability. I will tell the family and/or the person taking part in this research of any changes in the procedures or in the possible harms/possible benefits of the study that may affect their health or their willingness to stay in the study.

_____

Printed Name of Researcher Obtaining Parental/Guardian Permission/Consent

_____

Signature of Researcher Obtaining Parental/Guardian Permission/Consent

_____ _____

Date *Time*

Appendix G: Social ACES Youth (13-15) Assent Form

HRPC #:
Study Title: A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic
Principal Researcher: Benjamin Diplock, M.A.
Revision Date: November 10, 2021

Research Assent Form

What is a research study?

Research studies help us learn new things. We can test new ideas. First, we ask a question. Then we try to find the answer.

This paper talks about our research and the choice that you have to take part in it. We want you to ask us any questions that you have. You can ask questions any time.

If it is easier for you to have someone read this form with you, you can email one of the researchers, Benjamin Diplock at bdiplock@yorku.ca, and ask for a time for him and you to read the form together over the phone or over video.

Important things to know…

- You get to decide if you want to take part.
- You can say 'No' or you can say 'Yes'.
- No one will be upset if you say 'No'.
- If you say 'Yes', you can always say 'No' later.
- You can say 'No' at any time.
- We would still take good care of you no matter what you decide.

Why are we doing this research?

We are doing this research to find out more about what kids think about the new Integra Learning Disabilities and Mental Health (LDMH) Social Awareness, Competence, Engagement, Skills (ACES) virtual program.

What would happen if I join this research?

If you decide to be in the research, we would ask you to do the following:

- Video recording: Let your facilitator on the LDMH Social ACES team video record your online group eight sessions and one-on-one interview with a researcher, and share these videos with one person on the research team who can also watch and hear the recordings after.
- Health information: Let a person on the research team look and use the notes and documents from Centre for Child Development that you, your parents and the LDMH Social ACES staff members filled out. These documents are all about your health at the Child Development Institute (CDI) before, during and after the virtual Social ACES group.
- Be part of a recorded interview after the group: After you are done the Social ACES group, you and a researcher will chat by video or phone. The researcher will have some questions about your experience in the group, and you can share what you thought about the virtual Social ACES sessions.

Could bad things happen if I join this research study?

Having your LDMH Social ACES group sessions and interview recorded and knowing that a researcher will be looking at documents about you might make you feel uncomfortable. We will make sure that these video recordings and documents are kept private – only one researcher – to sure that you feel as comfortable.

You can say 'no' to having your session recordings watched, having your documents reviewed, or doing chatting virtually with the research after the group, at any time.

Could the research help me?

While the virtual LDMH Social ACES group that you will be in could help you, this research – video recording, one-on-one interview and document review – will not help you. We do hope to learn something from this research though. And someday we hope it will help other kids with Learning Disabilities, who take part in the virtual Social ACES groups.

What else should I know about this research?

If you don't want to be in the study, you don't have to be.

It is also OK to say yes and change your mind later. You can stop being in the research at any time. If you want to stop, please tell the researcher or your Social ACES facilitator. If you don't want to be part of the study but still want to do the virtual Social

ACES sessions, you would be switched to another virtual Social ACES group that is not being recorded. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

You would not be paid to be in the study.

You can ask questions any time. You or your parent/caregiver/guardian can connect with Benjamin Diplock (Student Researcher on this study) by emailing him at bdiplock@yorku.ca. Ask us any questions you have. Benjamin will be happy to answer questions by email, or by phone. Take the time you need to make your choice.

Is there anything else?

If you want to be in the research after you have read and understand what taking part in the research means, please write your name below. We will write our name too. This shows that you read about the research and that you want to take part.

Name of Participant _____
(To be written by child/adolescent)

Printed Name of Researcher

_____

Signature of Researcher

_____

_____ _____

Date ***Time***

Copies to:
Parents/Guardians/Caregiver

Appendix H: Community Research Agreement

MEMORANDUM OF AGREEMENT

THIS AGREEMENT (the "**Agreement**") is made on January 11, 2022

BETWEEN

YORK UNIVERSITY

(hereinafter called "***York University***")
AND

CHILD DEVELOPMENT INSTITUTE
(hereinafter called "**CDI**")

(collectively, *YORK UNIVERSITY* and CDI are hereinafter referred to as "**Party**" or the "**Parties**")

WHEREAS *York University* and CDI have mutually agreed to enter into a research collaboration project (the "Research Project") between them, the terms of which are as set forth in Schedule "A" attached to this Agreement.

NOW THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. PURPOSE OF THE AGREEMENT: The purpose of this agreement is to set forth the expectations and requirements regarding the research collaboration of *York University* and CDI. It is the intention of the parties that the collaboration described by this agreement be guided by the following principles:
    i. Maintain mutual respect and accountability between the parties;
    ii. Recognize the expertise and responsibilities of each party;
    iii. Respect the individual privacy rights of CDI clients; and,
    iv. Recognize the knowledge, time, and funding contributed by both parties.

2. TERM: The term of this Agreement shall be for *5* years, commencing on *December 31, 2021* and shall end on *December 31, 2026*, with the option of renewal based on mutual agreement and consent of both parties. Such renewal must be made and agreed to in writing by both parties before the expiry of the term of this Agreement.

3. INTELLECTUAL PROPERTY
    3.1. The parties acknowledge that this Research Project is or may be based on the use of existing intellectual property owned by the parties. Nothing herein should be construed as transferring any ownership rights of such existing intellectual property of the parties.
    3.2. The parties agree that any <u>new</u> intellectual property created or discovered as a result of the *York University*'s research pursuant to this Agreement shall be owned by *York University*. The parties further agree that CDI shall, in perpetuity and without limitation, have the right and license to use, reproduce, distribute, and otherwise rely on the evidence, information, findings, summaries, conclusions, opinions, results and reports delivered to it, from time to time, pursuant to this Agreement ("continued use") – including use of these findings to modify CDI's *Social ACES program*.

Such continued use shall, in no way and under no circumstance, constitute a breach of copyright in any way and no royalty fee or additional compensation shall be due or payable to *York University* by CDI or its affiliates and/or related entities or any subsequent owner of the Research Project for such use.

3.3. Given the pilot nature of the Research Project as described in Schedule A and the significant contribution made by the principal investigator ("PI") in terms of time, knowledge, and expense, *York University* has the sole right to complete the research using the evaluation framework developed as part of this agreement. As such, CDI agrees that CDI shall not independently complete this research using this research framework or partner with another researcher to complete this research without the permission of *York University*.

3.4. All documents, processes, technology, programs, designs, and interventions conceived of, completed or produced by CDI staff shall remain the intellectual property of CDI. For the purposes of this agreement and the stated Research Project, this includes *the Social ACES Theory of Change and Manual*. This information shall not be duplicated, summarized, or released without the permission of CDI's Chief Executive Officer or his/her/their designate. Leaders who are trained for research purposes shall not run/use *Social ACES* outside of the context of *Social ACES* research studies and shall not circulate or share information contained in the manuals or trainings, without written permission from CDI.

4. OWNERSHIP of EQUIPMENT: Any equipment or material purchased by *York University* as part of the Research Project shall remain the exclusive property of *York University*.

5. KNOWLEDGE DISSEMINATION

5.1. At the outset of the Research Project, and in an ongoing manner, *York University* is obligated to disclose all public dissemination activities attached to each Research Project, and keep CDI informed of any new developments or opportunities to present the work.

5.2. At least seven (7) days in advance of any proposed presentation or publication, *York University* shall submit to CDI an outline and associated abstract of any research results which it intends to present or publish. Within seven (7) days of receipt of the aforesaid notice, CDI shall response in writing with its approval or objections, if any. If CDI does not object in writing to such publication or presentation within seven (7) days of receipt thereof, CDI shall be deemed to have agreed to the disclosure.

5.3. *York University* is entitled to publish on results of the research. It is anticipated that the results shall be interpreted jointly by *York University* and CDI. If there are differences of opinion, CDI may include a disclaimer statement.

5.4. CDI may request that its identity and the identity of its program(s) be removed from any publication or presentation of the research results.

5.5. If a graduate student's thesis or major research paper contains subject matter that requires protection, *York University* retains the right to have graduate student thesis and major research papers reviewed and defended for the sole purpose of academic evaluation in accordance with *York University* 's established procedures.

6. AUTHORSHIP

6.1. At the outset of the collaboration, *York University* and CDI shall explicitly delineate as to how the parties shall use the data and anticipate outputs resulting from the Research Project. Authorship, including timelines for publication or presentation of data shall be discussed by the parties at the outset.

6.2. The determination of authorship and co-authorship is often a negotiated process between individuals involved in a research study, but is ultimately the responsibility of the Principal Investigator ("PI").

6.3. The following is intended to be a general guideline that shall be used for determining the authorship:
To be named as an author or co-author, an individual is generally expected to be able to defend the work publicly, and thus is required to have a thorough knowledge and understanding of the research question, the methods used, the data sources used, the results and the interpretation of those results. Staff members at CDI will be encouraged to contribute as co-investigators and will be acknowledged in any and all publications, reports, documents, or other written material from which this data is utilized (unless they indicate this is not their desire).

7. LIABILITY AND INDEMNITY

7.1. CDI shall indemnify and save harmless *York University* and its employees, officers and agents against all costs, suits or claims on account of injuries (including death) to persons participating in the Research Project or damage to property, caused by agents or personnel of CDI during the performance of this Agreement or resulting from the use by CDI or its affiliates, its customers or licensees of any deliverable or intellectual property developed by *York University* or CDI under this Agreement.

7.2. *York University* shall indemnify and save harmless CDI against all costs, suits or claims on account of injuries (including death) to persons participating in the Research Project or damage to CDI property, caused by the wilful or negligent act or omission of personnel of *York University* during the performance of this Agreement.

8. WARRANTY: *York University* shall not be responsible, and makes no warranty, expressed or implied, with respect to any actions taken by CDI in the use of research results. If CDI takes action based on any recommendations or designs developed by *York University* as part of the Research Project's statement of work, the implementation and results of the action shall be at the CDI's own risk and not the risk of *York University*.

9. PUBLICITY: CDI shall not use the name of *York University,* nor of any member of *York University*'s staff, in any advertising or publicity without the prior written approval of an authorized representative of *York University*. *York University* shall not use the name of CDI, nor any program of CDI, nor any employee of CDI, in any advertising or publicity without the prior written approval of CDI. However, both the CDI and *York University* may disclose some information regarding this Agreement, including and limited to, the name of the Principal Investigator; Principal Investigator's department; Collaborating Institution Organization name; Community Partner name; Title of Research Project; and duration of Research Project.

10. INDEPENDENCE OF PARTIES: CDI and *York University* are independent parties and nothing in this Agreement shall constitute either party as the employer, principal or partner of or joint venture with the other party. Neither the CDI nor *York University* has any authority to assume or create any obligation or liability, either express or implied, on behalf of the other.

11. MISCELLENEOUS

11.1. This Agreement may be amended from time to time as necessary with the concurrence of both parties.

11.2. This Agreement may be supplemented with individual Research Project addenda from time to time as necessary with the concurrence of both parties.

11.3. This Agreement shall be governed by and construed in accordance with the laws of Canada and the laws of the Province of Ontario applicable therein.

11.4. This Agreement embodies the entire agreement of the parties hereto and no change or modification shall be valid unless it is in writing and signed by both parties.

11.5. Neither party to this Agreement shall be liable to the other for any failure or delay in performance caused by circumstances beyond its reasonable control.

11.6. Articles 3 (Intellectual Property), 5 (Knowledge Dissemination), 7 (Liability and Indemnity), 8 (Warranty) and 9 (Publicity) shall survive the termination of this Agreement for any reason in addition to those articles surviving the operation of law.

11.7. In the event that CDI merges with another corporation/charitable foundation/agency (the "Successor"), this Agreement shall survive such merger. Further, any Successor shall be bound by the terms of this Agreement.

11.8. The parties shall make all reasonable efforts, including mediation, to resolve any dispute or disagreement concerning any matter arising from this Research Project and agreement through discussion and consultation. If settlement of the dispute is not possible, either Party may invoke arbitration. The Party wishing to initiate arbitration shall give thirty (30) days prior written notice to the other Party to be held exclusively in the City of Toronto. Such arbitration shall be the Parties' exclusive remedy. Costs will be borne equally by the parties. Arbitration shall be conducted in accordance with the Arbitration Act of Ontario. Pending resolution of settlement of any dispute, each Party shall proceed diligently with its performance under this Agreement in accordance with this Agreement.

11.9. This Agreement shall supersede all pre-documents or agreements, whether written or verbal, in respect of the subject matter thereof.

We have read this agreement and understand the nature of the Research Project and how it will be carried out. All our questions have been answered satisfactorily. The risks and benefits have been explained. We understand that the research may be stopped at any time on either party's request.

CHILD DEVELOPMENT INSTITUTE

Date: 11 January 2022

Lynn Ryan MacKenzie, PhD, CHE, CMQ/QE
Chief Executive Officer
Child Development Institute

Debra J Pepler

Date: 11 January 2022

Debra Pepler, O.C., PhD., C.Psych.
Distinguished Research Professor of Psychology
York University

Acknowledgement:

I, Benjamin Diplock , the Principal Investigator, having read this Agreement, hereby agree to act in accordance with all the terms and conditions herein and further agree to ensure that all *University* participants are informed of their obligations under such terms and conditions. I agree to ensure that I will be responsible for the activities to be conducted are completed according to the Agreement and consistent with all *York University* research policies.

Benjamin Diplok

Benjamin Diplock, PhD Candidate

Date: January 7, 2022

PROGRAM OF RESEARCH DESCRIPTION FOR *SOCIAL ACES*

Introduction

Learning Disabilities, Social-Emotional Difficulties and Related Therapies

Youth with Learning Disabilities (LDs) struggle with a deficit in one or more of the basic psychological processes involved in understanding or using spoken or written language and non-verbal abilities (i.e., visuospatial reasoning, visuospatial perception, psychomotor coordination) leading to difficulties with academic functioning (Cortiella, 2009; Panicker & Chelliah, 2016; Rourke, 2003; Shapiro & Gallico, 1993; Wright, 2004). Youth with LDs also experience difficulties with information processing (e.g., attention, executive functioning, language skills, theory of mind) and struggle with emotional reactivity, which is impacted by information processing. Their strong emotional responses often limit cognitive abilities (i.e., cognitive flexibility, impulse control, perspective taking, social skills) for these youth, since emotions have a significant influence on cognitive processes, learning and memory (Diamond, 2013; Milligan et al., 2016; Tyng et al., 2017; Zelazo & Lyons, 2012). Additionally, youth with LDs often experience notable difficulties with engaging independently in social interaction to successfully form and maintain friendships with 75% of students with LDs having lower levels of social competence than their same-aged peers, which comprises social skills, emotion and behaviour regulation, perspective-taking and understanding the social environment (Baumeister et al., 2008; Milligan et al., 2016).
Up to 10 percent of Canadian school–aged children and youth experience LDs, with academic difficulties negatively impacting psychosocial wellbeing (e.g., low self-worth, low self-esteem, loneliness, social rejection, social neglect, bullying by peers, self-doubt and failure) (Arthur, 2003; Baumeister et al., 2008; Ginieri-Coccossis et al., 2013; Kempe et al., 2011; Martínez & Semrud-Clikeman, 2004; Mishna, 2003, 2003; Mishna & Muskat, 2004; Parker & Asher, 1987; Public Health Agency of Canada, 2009; Wiener & Schneider, 2002). Teachers also perceive children with LDs as less cooperative, attentive, socially acceptable, and desirable as students (Karande et al., 2009; Katusic et al., 2001; Palmer et al., 1982; Panicker & Chelliah, 2016; Shaywitz, 1998). The stress associated with having an LD is often manifested through externalizing, academic, and social-emotional maladjustment, leading to further behavioural difficulties and increased risk for co-occurring mental health problems (Kempe et al., 2011; Lowe et al., 2007; Martínez & Semrud-Clikeman, 2004; Milligan et al., 2016).

Young people with LDs have a heightened risk for co-occurring emotion-regulation and mental health difficulties (e.g., anxiety, depression, stress, attention-deficit hyperactivity disorder, suicidality), with close to 50% meeting criteria for another mental health disorder (Barkley & Murphy, 2006, p.; Bryan et al., 2004; DuPaul et al., 2013; Elksnin & Elksnin, 2004; Maag & Reid, 2006; Margari et al., 2013; Nelson & Harwood, 2011). Mental illness is a major source of disease burden for young people in developed countries (Arnett et al., 2014). The co-occurrence of LDs and mental health difficulties (LDMH) is associated with further risk of adverse impacts on cognitive and academic performance, disrupting attentional capacities, further reducing working memory and information processing (Eysenck et al., 2007; Lopez & Disease Control Priorities Research Project, 2006; Nelson & Harwood, 2011; Patel et al., 2007). Academic, social, and mental health difficulties further burden youth with LDMH, leading to a negative cycle of increased setbacks and hopelessness (Erskine et al., 2015; Panicker & Chelliah, 2016). The current research study will explore the delivery and outcomes of a virtual social competence program for youth with LDMH.

Social Competence Interventions

In the past, social-emotional difficulties experienced by young people with LDMH have not been addressed, increasing the risk for further psychosocial sequelae (Rock et al., 1997). More recently, tailored, in-person group-based social competence programs for children and youth with LDMH have been identified as an optimal treatment for improving social-emotional capacities, information processing, social interactions, social competence, and peer relationships (Guli et al., 2013; Kavale & Forness, 1996; Stichter et al., 2012). These interventions are additionally associated with improved social skills, self-esteem, and reduced perceived isolation (Kavale & Mostert, 2004; Milligan et al., 2016). Social competence interventions have been developed for youth with a number of different neurodevelopmental disorders (e.g., attention deficit hyperactivity disorder, autism spectrum disorder) including for youth with LDMH (Milligan et al., 2016).

Social Awareness, Competence, Engagement, & Skills (ACES)

Program Description

An example of an evidence-informed, group-based social competence program is the LDMH Social Awareness, Competence, Engagement, and Skills (ACES) program. Social ACES is a "strength-based, client-centered, and experiential program intended to provide children and youth [age 8 to 18 with LDMH] … with a positive social experience and increase their social competence" (Milligan et al., 2017, p. 312). Different from other manualized social competence interventions, Social ACES provides tailored and flexible curricula and therapeutic stance, based on individual and group therapeutic goals as well as group matching (Milligan et al., 2017).

Through the comprehensive review of individual participants' learning profiles (i.e., psychoeducational assessment) and group matching, this program aims to deliver group activities that can support youths' neuropsychological processing difficulties (Integra Program, 2016; Milligan et al., 2017). The group matching is based on a multisource and comprehensive assessment (i.e., psychological assessment report, clinical observations during group assessment interaction, clinician/parent report), along with a review of individual learning profiles, clinical ratings of self-engagement, emotion-regulation skills, personal change motivation and social competence. To help ensure group fit, activities and goals are designed to be as homogenous as possible. Group matching includes further group profile delineation based on age and gender.

The Social ACES Theory of Change provides a comprehensive description and illustration of why and how the desired social competence changes are expected to occur for participants that partake in the program (See Appendix A). The Theory of Change illustrates why three major constructs of social competence change over eight sessions, including social awareness (e.g., conversation skills, responsive communication), social skills (e.g., prosocial behaviours, following rules, self-regulation), social engagement (e.g., corrective behaviour required, participation). The Theory of Change illustrates how the group matching process, the five possible group profiles (i.e.,, Low Social Competence/High Regulation, Medium Social Competence/Mixed Regulation, High Social Competence/Low Regulation, High Social Competence/High Regulation), the individual/group goals, the session plans (i.e., experiential group activities, didactic teaching, Research Project based learning, process-oriented discussion) the activities based on group goals (i.e., self-regulation, self-expression, conversation skills, nonverbal cues, rapport building, teamwork), and the three core facilitator principles (i.e., learning, fun, belonging) all influence change.

Objectives

The overall objective for the current research is to explore the delivery and outcomes of a virtual Social ACES (LDMH Social ACES Social Competence program) for youth with LDs. There is a need for mixed-methods research to explore the virtual adaptation of the Social ACES program during the COVID-19 pandemic (Teti et al., 2020). I will use a mixed-method design to describe the clinical processes and examine for whom the delivery of virtual Social ACES was and was not efficacious and developmentally attuned. For the current study, we define an efficacious and developmentally attuned program as one which promotes each individual participants optimal social-emotional, learning and cognitive needs.

Study A

Based on one-on-one semi-structured interviews (see Appendix B) with clinical team members, I will describe clinicians' perceptions of the process of pivoting from in-person services to delivery of a virtual adaptation since the beginning of the COVID-19 shutdown. More specifically, the objectives for Study A are as follows:

Objective 1: To investigate clinicians' perceptions of the clinical processes of pivoting from in-person services and adapting to the delivery of a virtual Social ACES.

Objective 2: To investigate the clinicians' perceptions of the key considerations (e.g., group dynamics, scaffolding, theory of change) and developmental attunement and efficacy of the adaptation and delivery of virtual Social ACES (see Appendix B).

Objective 3: I will investigate clinicians' perceptions about which participants were and were not able to engage with the virtual platform and why.

Study B

This study involves in-depth case studies of youth participating in a single virtual Social ACES group (N ~ 4-6) comprised of assenting participants with parental consent (if required) for the research. I will explore the youths' improvement through the program and examine for whom the delivery of virtual Social ACES was and was not efficacious and developmentally attuned. More specifically, the objectives for Study B are as follows:

Objective 1: To describe case study participants based on clinical file reviews of pre-treatment quantitative data of strengths, presenting problems, problem behaviours, and individual and group goals associated with the Theory of Change.

Objective 2: To assess improvements through treatment by observing the participants' behaviours over the eight weeks of Social ACES programming with specific coding of three different aspects of social competence identified in the Theory of Change: social awareness (e.g., conversation skills, responsive communication), social skills (e.g., prosocial behaviours, following rules, self-regulation), social engagement (e.g., corrective behaviour required, participation), and social speech. The Social ACES target capacities are expected top over the course of the program.

Objective 3: For the multiple case studies, I will investigate the patterns of the pre-post quantitative outcome measures recorded in the Social Skills Improvement System (SSIS), behavioural observations of the three different aspects social competence, and social speech during the virtual Social ACES sessions to elucidate case study outcomes and assess for whom the delivery of virtual Social ACES was and was not efficacious and developmentally attuned.

Objective 4: To investigate youth perceptions of the group based on brief one-on-one semi-structured interviews (see Appendix C) with case study participants following group completion.

Taken together, I will endeavour to describe the clinical processes, efficacy, and developmental attunement of virtual delivery for youth with LDMH, using a mixed-method approach.

Data Collection & Measurement

In Studies A and B, qualitative data collection will comprise semi-structured interviews, field notes, behavioural data, comprehensive clinical file reviews, and social speech. There will be additional quantitative data (i.e., pre-post SSIS rating scale) for Study B. The clinical staff and case study participant semi-structured interviews as well as the virtual Social ACES group will be recorded via WebEx, a HIPAA compliant virtual platform which CDI uses for virtual service delivery (Lobe et al., 2020). Semi-structured interviews, which offer rich, detailed first person accounts of experiences and phenomena, are the most common method of data collection in qualitative research. Semi-structured interviews provide a framework to record and assess CDI practices and standards (Johnson et al., 2007). The semi-structured interviews for the current study will include broad and open-ended questions (see Appendix B and C) to understand clinicians' clinical and case-study participants group experiences. The interviews for Study A will be from 30 to 60 minutes in duration, while the brief interviews for Study B will be 5 – 15 minutes. One-on-one semi-structured interviews will be accompanied by coding of moment-to-moment behaviours of case study participants (e.g., group observations, ethnography) and field notes. These data will provide important contextual information (e.g., observing and documenting the physical environment and interactions, reflecting on and identifying researcher bias, increasing rigor and validity). They will be integrated as supplementary/confirmatory research data (Phillippi & Lauderdale, 2018).

The outcomes to be measured quantitatively include Social Skills (i.e., cooperation, assertion, self-control) and Problem Behaviours (i.e., externalizing, internalizing, hyperactivity) measured with The Social Skills Improvement System (SSIS) Rating Scale (Parent-Form) (Elliott & Gresham, 2013). This questionnaire is standardly administered as part of the CDI admission process and will provide the "frequency and perceived importance of positive behaviours" and problem behaviours that may interfere with social skills and social competence (Elliott & Gresham, 2013). Parents respond on a four-item scale, ranging from "Never", "Sometimes", "Often" to "Always". The SSIS is completed by parents at both pre- and post-intervention and will provide an indication of youths' improvement. Norm-referenced standard scores for older youth (13-18 years of age) are provided for each of the social skills and problem behaviour scales. The SSIS has excellent internal consistency (Cronbach $\alpha = 0.95 - 0.96$), good test-retest reliability ($r = 0.84 - 0.87$) and moderate to moderately high validity indices ($r\ adj = 0.69 – 0.77$) for total scores (social skills and problem behavior scales, respectively) across a general population of secondary school-aged students (Gresham et al., 2011). Consenting participants' Social ACES (pre-treatment) assessment data and post-treatment data will be acquired through CDI, with the consent of participants or parents.

Research Projected Benefits and Application of Findings

This topical study will provide pertinent and timely information regarding the virtual adaptation and efficacy of mental health care for youth with LDMH during the COVID-19 pandemic. It will help to fill an important research and practical mental health services knowledge gap in this time of a rapid move to telepsychology services.

The research findings will be disseminated through CDI to influence institutional change, as well as through broader community mental health services to support community practitioners' best-practices, public health policies, and research. The findings will inform understanding of how to successfully adapt in-person social competence treatment programs and may inform future research into social competence intervention efficacy, with the goal of improving the mental health and wellbeing of youth with LDMH. A video summary of the findings will also be disseminated to the case study participants, to allow them to understand how they contributed to new knowledge and to provide insights and positive outcomes from the findings.

RESEARCH TEAM ROLES AND RESPONSIBILITIES

York University **Research Team**

This group includes the principal investigator, *Benjamin Diplock*, graduate student investigators, and any research assistants recruited to assist with the evaluation.

Roles and responsibilities:

In collaboration with CDI, the *York University* Research Team agrees to the following deliverables:

a) Obtain REB approval from *York University* and renew as required. Provide a copy of the REB application and approval letter to the Community Partner so that it may undergo expedited REB approval at CDI.
b) Complete all data collection, analyses, interpretation of results.
c) All data collection will take place as described in the methods section above. All review of documents regarding clients (e.g., attendance, file review etc...) will take place at CDI. Only de-identified information will be taken outside of CDI.
d) Prepare a summary report at the end of the Research Project, with interim reports on research findings as requested.
e) Prepare scholarly publications and conference presentations, as appropriate. A member of the community research team will always be included as a co-author to acknowledge the significant contribution to the Research Project. This member will be identified by the community research team, as per below.
f) Provide the community partners with adequate time to review all publications and presentations (i.e., 2 weeks) before submission. If this is not possible, this will be discussed with the community partner to determine if the submission can go forward.
g) Provide the community partner with any datasets created with clinical questionnaire data with a corresponding data dictionary upon completion of the Research Project.

CDI Research Team

This group includes community-based representatives who will assist the Academic Research Team in conducting the evaluation with the Community Partner. The Senior Manager of Research will serve as lead and will identify other relevant members.

Roles and Responsibilities:

In collaboration with the Academic Research Team, the Community Research Team agrees to the following deliverables:

a) Assist with participant recruitment for both treatment and waitlist control conditions (e.g., seek consent for the research team to contact, provide information about the research study, provide opportunities for the academic research team to present at orientations or workshops).
b) Provide information about program delivery as mutually agreed upon (e.g., leaders, changes to the manual/program delivery).
c) Provide information about participants as mutually agreed upon and set out in the study consent form (e.g., assessment scores, attendance).
d) Provide feedback on written report, presentations, and publications.
E) Identify at least one member of the community research team who has played a significant role in the clinical delivery of *Social ACES* and the completion of the Research Project to be author on presentations and publications.

Appendix I: External Institutional Permission Letter

External Institutional Permission Letter

December 2021

To whom it may concern,

Based on my review of the proposed research by Dr. Debra Pepler, O.C., Ph.D., C.Psych, Dr. Samantha Yamada, Ph.D., C.Psych and Benjamin Diplock, M.A., I give permission for them the to conduct the study entitled "A telepsychology-based social competence program for youth with learning disabilities and mental health difficulties during the COVID-19 pandemic" within Child Development Institute. This study has the potential to provide pertinent and timely information regarding the virtual adaptation and efficacy of a key mental health intervention for youth with LDMH during the COVID-19 pandemic. We see this research as assisting to fill a practical mental health services knowledge gap', and improve service provision, in this time of a rapid move to telepsychology services.

As part of this study, I give the researcher(s) permission to explore the delivery and outcomes of a virtual Social ACES (LDMH Social ACES Social Competence program) for youth with LDs. This will include the researcher(s) partaking in Social ACES clinical meetings, conducting recorded one-on-one semi-structured interviews with up to 10 virtual Social ACES clinical team members. It will also include the recruit of up to six virtual Social ACES case study participants through informed consent of youth, substitute decision makers and assent. The researcher(s) will be provided permissions to access and analyze case study participants session recordings and progress notes via OneDrive. The researcher(s) will also conduct brief recorded one-on-one semi-structured interviews with up to six virtual Social ACES case study participants following their virtual group. Individuals' participation will be voluntary and at their own discretion.

I understand that the research data collected will remain entirely confidential and may not be provided to anyone outside of the research team. This permission covers the time period of 2021 to 2023.

Sincerely,

J Liebster

SIGNATURE

CHILD DEVELOPMENT INSTITUTE

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