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# Peer influences on antisocial and prosocial behaviours in group home foster care: evidence of greater protections in better resourced homes and higher income neighborhoods

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# PEER INFLUENCES ON ANTISOCIAL AND PROSOCIAL BEHAVIOURS IN GROUP HOME FOSTER CARE: EVIDENCE OF GREATER PROTECTIONS IN BETTER RESOURCED HOMES AND HIGHER INCOME NEIGHBORHOODS

by

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## Author's Declaration of Originality

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Abstract

Youths in foster care are a vulnerable population at risk of experiencing diverse challenges, ranging from academic to socio-emotional and behavioural. Those in group home care can be at great risk of developing mental health and behavioural problems, sometimes severe, due to their experiences of childhood traumas, multiple placements and negative peer influences. Peer influences can also be quite positive and protective. The relative positive or negative influences of peers on youths' prosocial to antisocial behaviours are well-known in residential treatment contexts in the USA, much less so in such Canadian contexts; not at all in group homes in Canada. A recent overview of systematic reviews suggested that group home resources (e.g., smaller vs. larger homes) may be protective. And interdisciplinary research strongly suggested additional protections of neighborhood resources (e.g., more affluent vs. prevalently low-income). The study aimed to advance knowledge about associations between peer influences (positive or negative) and youths' behaviours (prosocial or antisocial) in Ontario group homes. Three central hypotheses were tested cross-sectionally among 875 youths 10 to 17 years of age who were surveyed in Ontario group homes in 2011-12. The 182 youths who remained in group home care three years later (2014-15) were longitudinally assessed again within a retrospective cohort design. Hypotheses were: Main effects (1) Positive (protective factor) and negative (risk factor) peer influences are significantly associated with youths' antisocial behaviours. Two-way interactions (2) Group home resources and (3) Neighborhood resources significantly moderate these peer-youth relationships such that better resourced homes and neighbourhoods are more protective. Potential additional effect modifications (3-way interactions) by gender were explored.

The Ontario Looking after Children (OnLAC) database was joined to the 2011 National Household Survey by residential postal codes providing census tract/neighbourhood-level measures of low-income status. Main effects and interactions were tested with logistic regression models. Their statistical and practical significance was assessed with odds ratios (OR) and 95% confidence intervals that were estimated from regression statistics. Central, hypothetically supportive, cross-sectional findings follow. First, very negative peers significantly increased the risk of youths' conduct problems (OR = 1.65). However, very positive peers were extraordinarily protective (OR = 0.05). Second, a significant positive peer influence by group home size interaction revealed larger such protections in larger homes with eight or more residents. An augmenting analysis found another positive peer-group home interaction highly predictive of prosocial behaviors among youths in smaller homes (OR = 4.49), but not in larger homes. Third, a negative peer-neighbourhood poverty interaction found that very negative peers greatly increased the risk of youths' antisocial behaviours (OR = 3.07) in relatively poor neighbourhoods where 20% or more of the households had incomes below Statistics Canada's low-income criterion, but not in more affluent ones. Longitudinally, smaller group homes (ORs of 4.55 vs. 5.26) and more affluent neighbourhoods (ORs of 3.88 vs 15.00) significantly diminished risks of youths' antisocial behaviours or conduct problems associated with having very negatively influential peers. In aggregate, study findings could be colloquially summarized as follows: Having positively influential peers, and residing in relatively small, better resourced group homes and in more affluent neighbourhoods all matter in the care of at risk youths. They all seem substantially protective. Practice and policy implications and future research needs are discussed.

# Dedication

This dissertation is dedicated to the memory of my late mother, Elizabeth A. Agbenyo.

May her soul rest in perfect peace.

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I would like to thank my supervisor, Kevin Gorey, for his unflinching support, direction and mentorship. Kevin went above and beyond the call of duty in providing long hours of teaching and learning to ensure that my dissertation was not only completed, but completed in the most thorough, sophisticated and valid way. I am sincerely grateful to him for making this research experience a classic one. I am also sincerely grateful to the other members of my dissertation committee without whose support and guidance the work could not have been accomplished. Their diverse expertise was of tremendous value in broadening my doctoral education and training. I would like to extend special thanks to Patricia Anderson of the Family Service Department, Windsor-Essex Children's Aid Society for supporting my decision to pursue the doctoral degree. Finally, I am very thankful for the unconditional love and support of my family along the way.

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# Chapter 1

## Introduction

Children need to be treated with special care so that they can grow to become dynamic, zealous and valuable members of society. Timely and adequate care and protection may help children to grow, develop and flourish. The role of biological and foster parents is paramount to proper protection and growth of children.

The practice of protecting children and youth from maltreatment has been longstanding in North America (Freundlich, 2006; Macintyre, 1993). Often, the focus is on children who are at risk of being physically, sexually or emotionally abused or neglected. Child abuse is an ongoing social problem that can have long-term negative social, economic and health implications for children, families and society (Goldstein, Faulkner, & Wekerle, 2013; Herrenkohl, Hong, Klika, Herrenkohl, & Russo, 2013). Although child protection in North America is backed by legislation and child abuse is against established laws the problem persists and children are abused on a daily basis (Macintyre, 1993; Ramsey-Irving, 2015; Wynd, 2013).

Children are sometimes removed from their parental homes by child protection agencies and brought to foster care when it is verified that their safety cannot be assured. Recent reports in Canada indicated that there was a total of 47, 885 children in foster care in 2011, 62% percent of whom were under 14 years of age (Statistics Canada, 2012a). The estimated number of children in Children's Aids Society's (CAS) care in Ontario in 2014–2015 was 14,539. Children come to care for varied reasons – either because of problems their parents' have, the children's own challenging and risky behaviours, use of physical force on the children by their parents, or as a result of other child-parent

conflicts (OACAS, 2016; Ramsay-Irving, 2015).

There are different types of foster care placements for children. These include treatment foster homes, family foster homes, kinship care and group home care. Children are brought to care for their needs, including safety needs, to be met timely and adequately. Foster care can be beneficial to children, yet care can be problematic, especially in group homes where youth with risky and challenging behaviours are often placed and may negatively influence each other to engage in antisocial behaviours. A recent review suggested that group home resources (e.g., smaller homes) may be protective (Osei, Gorey, & Hernandez Jozefowic, 2016). Also, interdisciplinary research strongly suggested additional protections of neighborhood resources (e.g., more affluent or less prevalently impoverished; Gorey, 1998). This dissertation aimed to observe associations between positive and negative peer influences and youths' prosocial and antisocial behaviours in group homes. It also observed how group home and neighbourhood resources moderate these peer-youth behaviour relationships in group homes in Ontario.

A recent report on children in Ontario foster care indicated that 82% are diagnosed with special needs and 46% are prescribed psychotropic medications (OACAS, 2011). The Ontario Incidence Study of Child Abuse and Neglect reported that 19% of abused children (potentially placed in foster/group care) have academic challenges, 19% have symptoms of anxiety or depression, 13% have a diagnosis of attention deficit hyperactive disorder, 12% have externalizing behaviours including aggression 10% have various other disabilities and less than 1% were placed in group homes (Fallon et al., 2015).

Youths removed from their parental homes, especially those identified as having delinquent behavioural concerns, are normally placed in group homes. Such youths are a vulnerable population at risk of experiencing diverse challenges, ranging from academic to socio-emotional and behavioural problems (Chamberlain, Leve, & Smith, 2006). They are at great risk of developing serious mental health and behavioural problems due to adversities they suffered in their childhood, multiple placements and negative peer influences. Peer influences can also be quite positive and protective. The relative positive or negative influences of peers on youths' prosocial to antisocial behaviours are well-known in residential treatment contexts in the USA, much less so in such Canadian contexts; not at all in group homes in Canada (Dishion, Spracklen, Andrews, & Patterson, 1996; Huefner & Ringle, 2012). This study investigated how youth influence each other negatively or positively in group homes in Ontario, Canada.

### 1.1 The Problem

Child advocates and researchers have contended that group homes, especially large ones housing seven to eight or more youth may not always be appropriate placements for at risk youths (Barth, 2002; Frensch & Cameron, 2002; Gharabaghi, Trocmé & Newman, 2016; Quay, 1986). Their risky to antisocial behaviours, ranging from internalizing or externalizing behaviours (e.g., misuse of alcohol or illicit drugs, being very angry and prone to having temper tantrums or to bully or fight with others) to serious conduct problems including delinquent or violent criminal acts, have been observed to increase significantly after group home placements (Pecora et al., 2013; Ramsey-Irving, 2015). Yet group home care has been the main placement for at risk youths in North America for generations. Despite persistent criticisms it remains the last

resort for such youths who cannot be placed in individual foster homes (James, 2011).

Significant proportions of the more than 500,000 young people in foster care in North America are youths in group homes (Statistics Canada, 2012a; US Department of Health and Human Services, 2013). For example, in Ontario, nearly 15% of young people in foster care are youths in group homes. They are quintessentially vulnerable with multiple developmental, socioemotional and behavioural needs, sometimes great, due to childhood traumas and consequent stressors such as multiple foster home placements. When not treated effectively such can burgeon into long-term challenges with deleterious consequences for them and society (DeGue & Widom, 2009; Hyde & Kammerer, 2009; Pires, Grimes, Allen, Gilmer, & Mahadevan, 2013; Ramsey-Irving, 2015).

Delinquency is defined as actions and or behaviours which contravene the generally acceptable societal dictates (norms, values, rules and laws) and which may potentially have detrimental or harmful outcomes for the individual and or community (Hirschi, 1969). Delinquency and youths' conduct problems in group homes are the main challenges in child welfare. About 4 of every 10 such youths have engaged in at least one delinquent act (Goldstein et al., 2013; Stott & Gustavsson, 2010). Increasingly risky to antisocial behaviours often ensue. Compared to otherwise similar youths in the public sector and foster homes, those in group homes are about two and half times more likely to be arrested for criminal activities (Ryan, Marshall, Herz, & Hernandez, 2008). In a vicious cycle, such behaviours often lead to further placement instabilities, academic failures, even criminal detentions (DeGue & Widom, 2009; Trout, Hagaman, Casey, Reid, & Epstein, 2008). Qualitatively, youths in group homes commonly view them as "gateways to jail." Their narratives include stories about how they first encountered the

criminal justice system after being placed in a group home (Finlay, 2003; OACAS, 2016).

Group homes have been criticized for failing to prevent delinquency and related developmental and conduct problems (Pecora et al., 2013; Ramsey-Irving, 2015). Bethany Lee and colleagues (2011) meta-analytically rated group home interventions as worse than any others in foster care. Negative peer influences have been suggested as possible causes of group home failures. Studies have demonstrated that when youth with similar behavioural challenges are brought together, intervention effects often diminish substantially or disappear. This negative peer influence hypothesis has been supported in diverse settings, including mental health clinics, schools and juvenile detention centres (Dishion & Tipsord, 2011; Dodge, Dishion, & Lansford, 2006; Mahoney, Stattin, & Magnusson, 2001). Primary and synthetic studies have also suggested positive peer influences, including in group homes (Huefner & Ringle, 2012; Lee & Thompson, 2009).

Little seems known about the *relative* influences of prosocial to more antisocial peers in any youth treatment contexts. And research on such peer influences, positive or negative, in Ontario group homes is nonexistent. In this study I investigated peer influences in group homes in Ontario. I observed the associations between positive and negative peer influences on youth's antisocial and prosocial behaviours. I also observed how positive peer influences may be even more protective in larger, less resourced group homes and in higher income neighbourhoods where needs may be greatest. Finally, I observed how negative peer influences may be less influential, that is, less risky in smaller, better resourced group homes and in higher income, more resourceful neighbourhoods.

## 1.2 Evolution of Group Homes in North America

The evolution of group home care in North America has a long and complex history rooted in European ideas and practices. The changing global trends in Europe in the 16th and 17th centuries influenced changing trends in social order in North America (Canada and US) and dictated how poor families and their children were treated. There developed a growing concern about children's welfare and the need for positive approaches to relieving the poor and their children from suffering. Subsequently, the process of institutionalizing needy and poor children, criminals and juvenile delinquents both in the US and Canada started albeit at different times (Rothman, 2002) and so was placing indigenous children in residential schools (Partridge, 2010; Royal Commission on Aboriginal People [RCAP], 1996). As discussed below, concerns and criticisms about institutionalization of children and placing indigenous children in residential schools led to the evolution and development of group and foster home care in the US and Canada.

### The Case of the United States of America

**The Colonial Era.** In the 1600s and 1700s there were no child protection or welfare services for children in the US. Children aged four and above were made to contribute to the work in the home. Social and psychological problems including insanity were treated communally; by each community and its members. Communities were autonomous, separate and hierarchically ordered and there was communal-coexistence (Hacsi, 1995; Rothman, 2002). Poor people and their children were not removed from their homes and placed elsewhere because of poverty. Instead, they were assisted (in their homes) by their community and family members. The poor, delinquents and the insane were not branded as undesirables who must be isolated from their family and or

community. Assisting one another was seen as the norm. Crime was not condoned -- deviants or criminals were either ostracized from the community or disgraced publicly. Children with risky and challenging behaviours were removed from their original homes and placed in different homes with either a relative or neighbor. It was incumbent on the family and the community to ensure that children and juveniles were law abiding and were redirected if they seemed to be deviating from the norms of the community. Crime, poverty, insanity and juvenile delinquency were not considered potential threats to the community (Hacsi, 1995).

**Early Institutional and Residential Placements.** The 1820s dealt a terrible blow to the structure described above and led to the erosion of communal system of existence. With more development and movement of people from rural communities to urban centres deviancy and crime increased and became a concern and potential threat to the American society. The old social order had to give way to new approaches to dealing with crime, delinquency, insanity, vagrancy and poverty (Rogers, 1998). As urbanization became more pronounced, communal living gave way to individualism. Society was blamed for societal ills such as crimes, delinquency and insanity. Consequently, it was decided that if society must get rid of such vices then those guilty of them must be removed and placed elsewhere to prevent them from further exposure to the same societal vices. Those removed must then be assisted to reform themselves and become assets to the community. This led to the creation of institutions, including penitentiaries, asylums, almshouses, orphanages and poor houses, where both young and old, hardened criminals and juvenile offenders were together kept. It was initially argued that creating such institutions where the poor, the orphaned, abandoned, neglected, the delinquent and

criminals were kept served a purpose of purging the American system of vices and helped the victims to reform (Hasci, 1995; Holden, 2009).

Almshouses were initially mainly for the poor, the penitentiaries were used to house criminals and then arose philanthropic organizations that organized orphanages, asylums for orphans and refuge houses for delinquent children. The first orphanage in the US was established in 1729 (Weisman, 1994). Institutionalization was seen as a means to prevent crime and probably control mental health problems in the system. Penitentiaries and asylums in the US were initially very popular and attracted tourists' attention from all over the world. Orphanages and asylums also multiplied quickly in number (Weisman, 1994). However, it was later discovered that the nature and operations of the institutions contravened the very nature of human existence, practices and behaviours. The institutions expected stringent order and discipline from inmates and eventually they became punitive instead of corrective. This limited the rights, freedom and mobility of individuals placed in any of the institution. It is contended that being raised in institutions denied children the ability to be empathetic, let alone sympathetic. Children raised in institutions lack general social skills and often have behaviour problems, even in adulthood. Institutions are, therefore, not the right places to keep and raise children (Rothman, 2002).

**Period of Reform.** The idea behind the establishment of institutions was to get rid of deviancy, dependency and crime, free the American system of antiquated and outdated colonial traditions and get rid of people considered unwanted members of the society. The belief was that by so doing the society would be made a better and more conducive place for those who were not criminals, insane or poor (Hasci, 1995). The

penitentiaries, for example, were created to help eradicate crime and deviancy, and help inmates to change. In their attempt to prevent crime, crime was rather created when youth and children were placed together with adult hardened criminals in the same institutions. The penitentiaries deviated from the original reformatory purpose for which they were established. There was moral degeneration, bribery and corruption in the prisons. As a matter of fact, the prisoners reformed the prisons instead of the prisons reforming them. Lawlessness in the prisons became commonplace during the civil war era making Rothman (2002, p. 251) to describe the penitentiaries as "seminaries of vice."

There arose more concerns and criticisms against institutionalization of children in mid-19$^{th}$ century. A common problem identified with all the prisons, for example, was over-population as they became "dumping ground" for all the unwanted elements of society, including the insane and criminals. Communities questioned the reform potentials of the institutions. The popularity of the institutions deteriorated as the once popular idea began to lack legitimacy. By the end of the 19th century institutions, especially the penitentiaries, were seen as lacking the ability to transform or reform individuals and the American society began to see no justification in institutionalizing anybody (Rothman, 2002).

The inhuman, immoral and unjust practices perpetrated against children in the institutions including orphanages were reportedly traumatic and destructive (McGowan, 2010). The American public reacted to these practices and demanded separate settings for delinquent youth. This led to the creation of reform schools where delinquent youth could be reformed and trained to acquire skills and become assets to themselves and their communities. Youth were subjected to hard labour in such schools. There were broad

daylight exploitation, corruption and cruel treatment of delinquent youth in the reform schools to a point where it became a subject of severe criticism (McGowan, 2010; Weisman, 1994). To check the excesses of the reform schools, a concept of adoption and boarding-out, harbingers of foster care, were initiated and reform schools and orphanages began to diminish. They were replaced by a congregate care system that included group care, children's homes and cottages. The New York City House of Refuge was established in 1824 as the first juvenile reformatory in the US for delinquent youth. Other states established similar facilities (McGowan, 2010; Schlossman, 1977). Later, juveniles were not to be confined to institutions where they stayed with adult criminals. They must be accommodated by their communities and or placed on probation (Rothman, 2002).

There were also movements in the mid-18$^{th}$ to early 19$^{th}$ centuries that championed the course of creating Half-Way Houses for juvenile delinquents and offenders. Unfortunately, children and youth so housed were still abused leading to further public outcry for better community alternatives where children and delinquent youth could be cared for (Schlossman, 1977). A leading member of the fight against poverty, abuse and institutionalization of children during this time was Jane Addams. Addams, a progressive social worker and reformer, built on the idea of Toynbee Hall learned in Great Britain and developed Hull House with Ellen Gates Starr in 1889 in Chicago (Wade, 1967). Adams believed that the root causes of poverty must be addressed (Davis, 1973; Polikoff, 1999; Westbrook, 1991). Among other supports, she set up a day-care center and kindergarten for children and boys' club for youth (Polikoff, 1999). Addams fought against child labour in Illinois and a bill was passed in 1893 making the exploitation of children illegal. Also the states started legalizing group homes and

residential facilities through policies and licensing. This marked the beginning of a more effective deinstitutionalization and potential protection for children in the US in the late 19th century into the 1950s (Polikoff, 1999; Wade, 1967).

**The Late 19th Century to 1950s.** There arose more serious concerns about placing children in institutions. Other forms of placement and care for children and youth including boarding out and adoption were encouraged (Hacsi, 1995). Many policies and legal reforms pushed for these alternatives instead of placing children in institutions. Orphanages became less popular and eventually defunct albeit temporarily (Weisman, 1994). The new alternative placements became problematic just like the earlier ones. There were varied forms of abuse including sexual abuse and the use of physical force on the children placed in these homes (Schlossman, 1977; Weisman, 1994). The failures in the evolving child welfare sector led to peoples' frustration and demand for return to orphanages or institutional system of care (Schlossman, 1977). Freundlich, Morris and Blair (2004) argued that people abhor placing children in institutions but if the emerging child welfare and foster care system do not have any meaningful future and permanency plans for children and youth then returning to orphanage system of care seems worthwhile as it may create more permanency for children.

A conference on children was held at the White House in 1909. It proposed that children should be placed in foster homes, including group homes, whenever possible, instead of sending them to institutions. Many states applauded the conference and enacted the Mothers' Pension Act providing financial support for single mothers with children at home, so they could keep their children in the family home. However, the financial support did not cover all women. It excluded women with so-called

questionable characters, for example, those considered sexually promiscuous (Cole, 1990). Placement of children in orphanages, almshouses and poorhouses continued for several years after the conference before decreasing precipitously between the Great Depression and the Second World War (Jones, 1993).

**Developments in the 1950s Onwards.** The issue of bringing back institutions in their original form into US child welfare policy with special reference to orphanages emerged again in the 1990s. In 1995 the Republican Party led by Newt Gingrich sought to reintroduce orphanages into US child welfare policy (McKenzie, 1999). The proposal was vehemently opposed by many Americans, religious leaders and child welfare agencies all over US. The Party was forced by public pressure and opinion to rescind the original proposition (McKenzie, 1999).

Organizations such as the Coalition for Residential Education (CORE) championed the same course and demanded making orphanages part of the child welfare and foster care system in the US (Freundlich, 2006). Some law making bodies and influential individuals such as Richard McKenzie vehemently argued in support of bringing back orphanages (McKenzie, 1999). The seeming general interest shown in "new orphanages" resulted in the reestablishment of such places. A case in point is Place of Hope established in Florida in 2001. Like traditional orphanages, Place of Hope was a faith based institution and its operations were based on the Christian faith**.** The idea of bringing orphanages back did not last long as many sectors in the US opposed it. However, Mary Joe Copeland, an individual, had similar idea of bringing back orphanages in their traditional form to accommodate orphaned children as young as four and to permanently keep youth who did not seem to have any chances of getting out of

foster care. While her propositions were embraced in some sectors other sectors opposed them. Her plans died at birth due to lack of financial support. Similar other attempts to reinstitute orphanages in the US faced many challenges and, therefore, failed (Freundlich et al., 2004).

Institutionalization of children was again reintroduced into US child welfare system in the 21st century. Evidence shows that some orphanages were re-established and being operated with characteristics and practices similar to orphanages of earlier centuries. Their nomenclature, as reported by Madelyn Freundlich, was changed from orphanages to either "children homes, group care facilities, residential treatment homes, residential charter schools, cottages, ranches [or] academies" (Freundlich, 2006, p. 2). Their operations did not, however, differ from what pertained in the past. For example, their care provision excluded any form of treatment for youngsters placed in the facilities and they isolated children from their families. This made individuals, societies and organizations to conclude that the facilities were orphanages in modern forms with different names (Freundlich et al., 2004). Examples of such placements include but not limited to Betheseda orphanages founded in 1740. This still exists under a different name of Betheseda Academy. Another one is the Florida Baptist Orphanage founded in 1904. It is currently called Florida Baptist Children's Home and continues to have the same mission statement it had over a century ago. St Mary's Training School founded in 1883 is another example. It is currently called Maryville Youth Academy (Freundlich, 2006).

Child protection agencies and the concept of free foster and group home care started to be formally established in the early 1950s. Dramatic changes in child protection practices were observed in subsequent years with more children placed in foster care,

rather than institutional care, in the 1960s (Hasci, 1995). By 1973 all states in the US were required by law to report child abuse and neglect to appropriate authorities. Orphanages came under severe criticism and most were closed. Those considered viable and supportive, such as Boys Town and Maryville, were transformed into group homes and are still in operation (Weisman, 1994).

## The Evolution of Group Home Care in Canada, and in the Province of Ontario

**The Case of Canada: A Brief Summary.** Group homes in Canada reportedly evolved through five notable stages (Charles & Gabor, 2006) as discussed briefly below. Also discussed here is the evolution of foster and group home care in the province of Ontario, Canada.

The first stage of foster and group home development in Canada occurred between 1700s and mid-1800s. During this stage society was seen as being morally responsible for assisting the poor and insane, the orphaned, abandoned, and neglected children to receive physical support by placing them in institutions and thereafter providing them with moral and spiritual direction and guidance to save their souls. Children were placed together with adults in institutions (Jennissen & Lundy, 2011; Smith, Balser & Johansson, 2014). It was believed that it is divinely ordained that the souls of children needed to be saved. This notion became the guiding principal of the first stage making the actual needs of the children a secondary concern. Religious, charity and philanthropic groups were solely responsible for caring for the concerned children and missionary schools were established for this purpose (Grellong, 1978).

The second stage started in the mid-19$^{th}$ century. Some characteristics of the first stage prevailed in the second stage. However, the purpose and focus was to ensure the

well-being of children and to save them from distraction. Child protection agencies and laws started developing but they were at their teething stages. This stage was criticized for being an era when the roles, responsibilities and the general involvement of parents in the lives of their children was ignored (Charles & Gabor, 2006).

The third stage evolved from the first and second stages. It was an era when youth in residential placements were being linked with specialized services. Some children were segregated from their families and placed in residential schools. Settlement movement and workers were becoming more prominent at this stage and more attention was directed at special needs of children. Children with special needs and disabilities were no longer seen as inferior to others, and distinction between the needs of children and adults were being made, although not very succinctly (Charles & Gabor, 2006; Smith et al, 2014).

The treatment and intervention era followed in the 1940s to 1950. The features of the previous stages were still prominent in this rather more developed stage. Its main and probably futuristic feature was its focus on treatment for children involved in the child welfare system. There were more professionals with more attention directed to the needs and effective development of children. Placement of children in foster and group homes was the key issue during this era and orphanages and other institutions changed to treatment facilities. Treatment facilities continued to evolve and develop into cottages and community-based group homes (Charles & Gabor, 2006; Smith et al, 2014).

From the 1950s onwards evaluation and research into treatment of children in placements were taken more seriously with the view of determining the pros and cons of treatment for children in the child welfare system. Youths' personal needs were the main

focus. There was a partnership approach to treatment and care provision, and families were included in the treatment needs of their children. There was also the development of advocacy groups that championed the interest and well-being of youth in foster/group homes (Charles & Gabor, 2006; Smith et al., 2014).

**The Case of the Province of Ontario.** The mid-1800s saw the development of industries in Canada and led to rural-urban migrations. The Canadian agrarian society was transformed into service and industrial society. The ripple effect was economic growth in different parts of the country including Ontario. While some families benefitted from the development others did not. Those who did not remained in poverty and neglected or abandoned their children as they were not able to adequately provide for them. Some families placed their children in apprenticeship. Other children worked at a young age selling newspapers in the street or they worked in factories to survive. These children learned vices in the streets and practiced them **(**Jennissen & Lundy, 2011; Smith et al., 2014). With time, the upper and the middle class families who benefitted from the economic growth became concerned about susceptibility of their own children to the negative influence of street children and the general implications for the future of communities. This compelled leaders to develop means and strategies to check delinquency, crime and other social vices by sending this category of children to institutions (Smith et al., 2014).

In Ontario, the responsibility of caring for the needy, abandoned, neglected, orphaned and poor children fell on philanthropic, charitable, voluntary and religious groups (Eekelaar, 1994; Mauruto, 2004). Such children were to be placed in almshouses, monasteries, orphanages, shelters or workhouses (Holden, 2009). Public safety took

precedence over the safety and needs of children. Children were removed from their family homes, kept away from the public and subjected to varied forms of unacceptable treatments (Holden, 2009). Some of such children were enrolled in apprenticeships and others were engaged in domestic labour. Children were maltreated by the very institutions expected to protect them. The provincial government created institutions such as reformatories and industrial schools, and supported orphanages run by churches or private organizations. An indenture system was also put in place where children were assigned to employers in exchange for accommodation. Children were placed in the same shelters and institutions with adults until they could be apprenticed or bound out to an individual or family. Juvenile offenders were later placed in reformatories to help transform their criminal behaviours. All these placements used punitive methods as ways of discipline (Holden, 2009).

By late 19th and mid-20th centuries the Canadian state and for that matter the province of Ontario strove to make distinction between those considered insane, criminal, morally bankrupt, unemployed, the poor, orphans and the homeless. They were then separated from each other in their placements, but were all isolated from the general public (Ainsworth & Fulcher, 1981). It is important to note that although this era saw some changes and improvement in child welfare it was deficient in many ways. For example, society still failed to accept responsibility for challenges children faced. Families were rather blamed for the woes of their children. However, service provision to children was considered somewhat important and separate facilities including reformatory and training schools were created to help reform the behaviours of delinquents and juvenile offenders/criminals (Charles & Gabor, 2006). It is estimated that

between 1869 and early 1900s more than 100,000 neglected and orphaned children were shipped from Britain to Canada. Seventy thousand were sent to Ontario alone where it was believed that Canadian families would assume their care. Due to draught, disease and economic depression many were quickly abandoned and became street children or were apprenticed and made to live under hazardous conditions. Many others were placed in orphanages or shelters and were then indentured at the ages of 12 or 13 (Eekelaar, 1994).

A House of Industry and Refuge was opened in December 1877 in the Wellington County, Ontario to accommodate the poor and homeless in the community. Both young and old were accommodated after which all their family ties were severed (Family and Children Services, 2018). For the welfare of children, the Society for the Protection of Women and Children was established in Toronto in 1881 and Kelso, who was initially exposed to the plight of the poor at Hull House in the US, established the first Children's Aid Society in Toronto in 1891. It was originally referred to as Toronto Humane Society but soon became a full fledge child protection agency. It initially served as a shelter (refuge), a trial and probation setting for juvenile delinquents (Jennissen & Lundy, 2011).With time more CASs developed in Ontario. The 1893 Act for Prevention of Cruelty to and Better Protection of Children was enacted in Ontario and it urged every town of 10,000 or more inhabitants to create shelter facilities that could temporarily accommodate needy and poor children removed from their homes until there was an alternative placement (Family and Children Services, 2018). As a result of the 70,000 children shipped from Britain to Ontario in earlier years, the majority of whom had become destitutes and vagrants, the Ontario government passed legislation in 1897 to regulate agencies that brought children to Ontario. Later, the idea of saving children

emerged and eventually led to the establishment of Industrial Schools and children under the age of 14 who were homeless, committed crimes or were neglected were sent to these schools to reform and learn skills. The schools were less punitive (Family and Children Services, 2018).

Placement of children in institutions, for instance, orphanages resurfaced in the 1900s and were seemingly disliked by almost everyone. The development of the notion of foster care led to its stoppage. Orphanages came back into existence during the Great Depression era. However, a growing concern about separating children from their parents led to the introduction of "temporary wardship" when it became obvious that many parents have the ability and skills to take care of their children and so must be allowed to do so. It was decided that children from such families should not be removed permanently from their family homes (Charles & Gabor, 2006; Smith et al., 2014).

Several Children's Aid Societies in Ontario came together in 1912 to form an association that would work in partnership with the provincial government and the community to develop an acceptable and probably workable child welfare system that could assist all young people in Ontario. By 1930 there were not less than 800 children in shelters in the whole of Ontario. By 1940 shelters were fading out and were replaced by group homes. This was the time when foster care became more prominent in Ontario. It was conceived that placement with alternative family could be more beneficial to troubled children than placement in institutions. Children may also be more positively influenced in foster care than in institutions (Family & Children Services, 2018; Weisman, 1994).

More advancement in Ontario's child welfare system started in the 1950s. Treatment facilities started to expand. Smaller cottages and community homes were used as placements for children. Orphanages changed to treatment centers. The concept at this time was that the placement itself must be a treatment and therapeutic milieu and it should not be necessary to always take children to a professional's office for treatment while they were still in placement (Grellong, 1978). Although the era saw trained professionals mainly running affairs, it was not very different from previous eras in terms of how children were controlled and limitations placed on their rights and freedom. The era was criticized for re-brandishing the previous eras in different forms and presenting it as though it was new (Fewster & Garfat, 1987). Support for foster parents and provision for needy children increased by the end of World War II. CASs started using their foster homes for emergency and short-term placement purposes by 1950s. The first group home in Ontario purposely for boys who were made crown wards and those identified as having risky and challenging behaviours and so did not fit for foster home placement officially opened in 1969 (Family and Children Services, 2018).

The Permanency Planning Movement started in the 1970s with its main focus on keeping children out of care and sending them back to their original families when possible. Middle class families were beginning to be involved in child protection cases and the number of children in care who had emotional and behavioural problems increased leading to the need for permanency plans that could retain them in foster or group homes if needed (Family and Children Services, 2018).

## Residential Schools, Child Welfare and Indigenous Communities in North America

**Before the advent of colonization.** Before the advent of European contact with indigenous people in North America, indigenous people had developed complex system of co-existence that was significantly different from what the Europeans brought with them. Families were closely knit. Child rearing was communal and the extended family including uncles, aunts and grandparents played crucial roles in child rearing (Mannes, 1995). Kinship ties were held in high esteem as it served as the defining identity and bond for members. Some of the indigenous groups, for example, the Tsimshian practiced matrilineal system of kinship while the Anishinaabe practiced patrilineal system. Some others, for example, the Miikmaq practiced both. The Inuit reportedly had a complex kingship system that worked perfectly well for its community members. Elders in the family were regarded as epitome of knowledge and were accorded unreserved respect (Bishop, 2008, McDonald, 2016, 1994). The Euro-American/Canadian domination of the indigenous people destroyed these unique structures and led to imposition of foreign cultural values and practices and the erosion of indigenous cultural practices and heritage.

**Residential Schools and Struggle for Liberation: An Overview.** The paternalistic mentality of Europeans (colonialists) in North America in the 19th century led to their attempt at assimilating indigenous people into white Euro-American/Canadian cultural practices. The colonialists believed that they were intrinsically superior to indigenous people and so the indigenous person must be subservient to their dictates and do what they do, including speaking their language (Fournier & Crey, 1997).

Although there was an established indigenous education system through which cultural and societal norms, rules and values were transmitted from one generation to

another before the coming of the Europeans, the colonialists glossed over this and sought to convert indigenous people into Christianity and teach them their ways of life. They created missionary schools in the 17th century for these purposes. In the 19th century the colonialists together with the Canadian and American governments turned attention towards educating indigenous children with a plea of civilizing them. Nicholas Flood recommended boarding school system for indigenous children in the late 1870s and by early 1890s missionary churches in the department of Indian Affairs started pre-teen full-fledged residential schools (Partridge, 2010; RCAP, 1996). By 1920 indigenous children aged 7 to 15 years were compelled to attend residential schools. The schools were built mostly on reserves. The number of the schools expanded in the 1950s and lasted for more than a century.

The notion behind residential schools was to institutionalize indigenous children and brainwash them through assimilation strategy, bring an end to the indigenous heritage and probably the entire indigenous race. The Civilization Fund Act of 1819 was established to help implement the colonialists' assimilation agenda (RCAP, 1996). By the 1930s there were not less than 75% of all First Nations children aged 7 to 15 in residential schools and so were Metis and Inuit children (Fourtier & Crey, 1997). Barkan (2003) estimated that close to 200,000 indigenous children in Canada were forced into residential schools. The practice of residential schooling was backed by established laws, which compelled children as young as three years to desert their families and communities to leave in these schools (RCAP, 1996). The schools were operated by Christian churches including the Roman Catholic Church. They brainwashed the children and made them to hate their heritage, culture, language, beliefs, values and practices

(Elias, Mignone, Hall, Hong, Hart, & Sareen, 2012; Friesen & Friesen, 2002). "Kid catching" was used to force parents to send their children to boarding schools. Many of these children died while in the residential schools. The whereabouts of many others were not known (Coolidge, 1977). To achieve their assimilation goals, indigenous children were sent to far away boarding schools and efforts were made to cut contact between them and their families. Families were robbed of parenthood while children were denied growing up in their family homes where they could be socialized into the culture, norms and values of their own people. The very social fabric of indigenous people's existence including cultural practices, beliefs and values were destroyed by Euro-American/Canadian assimilationists and "kid catching" strategists (Coolidge, 1977; Mannes, 1996).

Different forms of abuses prevailed in the residential schools, including physical and sexual abuse. Children were inadequately fed and many of them were malnourished with concomitant health concerns; some died as a result of mal-nourishment. Children fought and resisted these practices in different ways including stealing food, setting fire and refusal to fully cooperate. Other protests came from leaders and parents. This compelled the government to propose stopping the residential school practice. The Roman Catholic Church protested against government's decision with the argument that residential schools were best options for ingenuous children. Even some indigenous communities protested against the stoppage. Representatives of indigenous people both in Canada and the US fought until the practice of residential schools was abrogated as discussed below (Elias, Mignone, Hall, Hong, Hart, & Sareen, 2012).

**Protest against Residential Schools and Emergence of Indigenous Child Welfare: The American Approach.** A notable protest against indiscriminate removal of indigenous children from their homes and placing them anywhere including residential schools was staged in the US when members of the Devil Lake Sioux of North Dakota reacted to the practice because they became fed-up with removal of their children from their homes for no apparent reason and without their consent (Mannes, 1996).The protest spread to other jurisdictions, caught the attention of the US government and an investigation was initiated to find out details about the concern. A press conference was held in 1968 in New York City where representatives of the Association of American Indian Affairs (AAIA) made their concerns known. The AAIA developed different communication and protest strategies including circulation of newspapers to educate the public about the child removal and placement menace (Mannes, 1995, 1996).

The actions of the Devil Lake Sioux led to the establishment of a "tribal child welfare board" (Mannes, 1996, p. 263). After a number of discussions involving tribal leaders it was determined that establishing a proper child welfare system for American Indians would be worthwhile. It was believed that the establishment of a tribal government supported by tribal infrastructure may assist in the development of a solid child welfare system for indigenous families and their children. This idea only came to fruition when Wheeler-Howard Act (Indian Reorganization Act) was established and tribal governments started administering child and social welfare services in the 1960s. By the 1970s different services were extended to indigenous children and their families both on the reserves and in urban areas (Cohen, 1982).

A court order in 1970 directed that Social Rehabilitative Services (SRS) Agency, a federal agency, must ensure that the needs of indigenous families and their children including those on reserves were served timely and adequately. The dictates of the court were instantly flouted by American states (Mannes, 1996). Tribal governments could not deliver needed child welfare services as they were often subjected to federal government directives that undermined their authority. Disagreements led to lack of proper ways to deliver foster and group home care services to indigenous children. Those on reserves were, for example, completely ignored. Legal commotions about protection and welfare of indigenous children continued until the second session of 93rd congress in 1974. After a number of personal statements and testimonies in congress the attorney general recommended that Indian Child Welfare bill be promulgated. This was done and introduced to congress on August 27, 1976 as bill S1214 (Mannes, 1996). It was changed to Indian Child Welfare Act of 1976. However, the bill died shortly after its introduction. It was revived in April 1977 and reintroduced for public hearing. Different sectors including some Christian denominations opposed the bill as they thought it will eliminate placement of indigenous children in residential schools. After a number of debates the bill passed into law in November 1978 and affirmed the tribe authorities' legal right over indigenous children's custody and placement issues with emphasis on keeping/placing children in tribal homes (Mannes, 1996). Other states passed the same law in favour of indigenous children. The law encouraged placement prevention and culturally sensitive and appropriate placement for indigenous children.

**Evolution of Indigenous Child Welfare System in Canada.** According to Armitage (1993) indigenous child welfare in Canada evolved through three different

stages: 1. the colonialist/assimilationist stage (1867-1960), 2. The child welfare stage (1960-1980), and 3. 1980 onwards. The first stage is marked by colonial influence and domination. Policies were not in favour of indigenous families and their children. The second stage tried to bring together services that could support indigenous children and their families. The third phase deals with child protection/welfare services that are implemented in consultation with three-levels of government – federal, provincial and band/tribal council.

***The Assimilationist/Colonialist Period.*** During the colonial era, the main child welfare institution was the residential schools, which were based on the Indian Act (an Act of Parliament). They were operated by missionary churches and supported financially by the Canadian government. The schools tried to inculcate Christian doctrines, ethics and beliefs into indigenous children. As indicated earlier, the residential school system was a calculated effort by white colonialists to eliminate the indigenous race from North America. Students left the schools and failed to function well in any setting as they were not adequately prepared for it. The practice stopped in the 1990s (Armitage, 1993).

***Child Welfare Period.*** Child protection agencies' involvement with indigenous communities dated back in the 1940s but only became public in the 1960s. During the Second World War the role of government involvement in community issues increased and the role of social workers became more acceptable (Johnston, 1983). In 1947, the Canadian Association of Social Workers together with the Canadian Welfare Council submitted a memorandum to the House of Commons and a Senate committee, which were tasked to consider changes to the Indian Act. Among others, the memo was concerned about the way social services were delivered to indigenous families and their

children. It contended that the quality of the services delivered was arguably inferior to services received by other sectors of the Canadian population (Johnston, 1983). The memo also spoke about child protection concerns including adoption involving indigenous children and suggested that welfare, education and health services must be made available to the reserves as it may help improve the lives of families and children on the reserves. It was suggested that provincial governments must become responsible for these services rather than waiting for the federal sector to develop them. It is important to note that such recommendations, including even government's own recommendations were usually not followed (Armitage, 1993).

It has been argued that the child welfare system as it related to indigenous families and their children was similar, in all aspects, to the residential school system it was expected to have replaced (Armitage, 1993; McKenzie, 1985). Armitage (1993) observed that in majority of ways the child welfare system might have even been arguably more destructive to indigenous families and their children than the residential school system. Lack of funding or inadequate funding is one factor that militated against successful provision of equal services to indigenous families and their children by the child welfare system (Johnston, 1983). Some indigenous child welfare agencies only received funding from the federal government (Timpson, 1993), but this was even "inconsistent and often inequitable" (McDonald et al., 2000, p. 9). There were no funds available for preventative and/or support services for indigenous families. However, funds were made available for removal of indigenous children from their family homes. Child protection workers, therefore, focused more on removing indigenous children from their homes than any other protection concerns and services (Timpson, 1993). This

practice led to what has been called the "sixties scoop," to show how child welfare workers "would, quite literally, scoop children from reserves on the slightest pretext" without the consent of their families or bands (Johnston, 1983, p.23). Many indigenous children were placed in foster care (in white people's homes) from late 1950s until 1980s. The practice made many people to equate the child welfare system to the defunct residential school system (Bombay, Matheson, & Anisma, 2014).

***Development from 1980 Onwards: Toward Self-Autonomy*.** Indigenous people protested against removal of their children from their homes since the time of residential schools. However, the attempt to have self-autonomy and be able to form their own child welfare agencies started only in the mid-1970s (Johnston, 1983). The changes in the USA related to the enactment of the Indian Child Welfare Act of 1978 together with indigenous people getting fed-up with incessant removal of their children from their homes and lack of services for their children precipitated the push for change in the early to mid-1980s. Various bands in different provinces pushed for self-determination in relation to child welfare and protection issues involving indigenous children (McKenzie, 1989). A resolution by Band Chiefs in 1981 prohibited Ontario and Manitoba from removing indigenous children from their families. The Band also requested for the immediate return of children earlier removed from their biological homes. Further, the band proposed the promulgation of a law allowing indigenous people to form their own child protection/welfare services in conformity with indigenous culture and practices. The first joint child protection initiative between indigenous people and a CAS in Ontario took place in 1979. Thereafter, the first indigenous child protection workers were employed in two Native communities in Ontario. The intention was to foster provision of

necessary care to children in indigenous communities and to stop removing children from their homes. The initiative was later extended to every First Nations community in the province (Koster, Morrissette, & Roulette, 2000).

A new Child and Family Services Act was enacted in 1984 and it officially acknowledged the rights of indigenous people and their communities to create their own child protection agencies. The Act allowed a band or native community to designate any particular body or group as a native child and family service authority. The ministry responsible must fully support such a designated body in its child welfare undertakings. These initiatives together with many other ongoing ones notwithstanding, indigenous children are still overrepresented in the child welfare system in Ontario (Koster et al, 2000).

**The Impact of Residential Schools on Indigenous Communities, Individuals and Families: An Overview.** The abuse and trauma experienced by children who attended residential schools became intergenerational problem and challenge for the indigenous population/generation to date. First Nations Regional Longitudinal Survey showed that by the time children's whose family (mother and or father) were in residential school become teenagers they might have experienced several stresses and distresses culminating in youth suicide; 23% of youth might have already imagined suicide (First Nations Centre, 2005). Other symptoms include depression, drug and alcohol abuse (Bombay, Matheson, & Anisman, 2012). The negative impact of residential schools continues to be felt at individual, family and community levels among indigenous people to date as briefly discussed below.

***Individual Level.*** The residential school practices made individual indigenous person feel isolated or alienated on daily basis. There is also the feeling of shame, anger toward school and parents, self-hatred, internalized racism, fear of authority, low self-esteem, self-destructive behaviours, (substance abuse, gambling, alcoholism, suicidal behaviours) and being aggressive and sometimes violent (Bombay, Matheson, & Anisma, 2014; Elias et al., 2012).

***Family Level.*** The family unit continuous to suffer from unresolved grief, difficulty with parenting effectively, family violence, loss of traditions and loss of identity as a result of residential schools (Partridge, 2010).

***Community Level***. The negative impact of residential schools on indigenous communities include but not limited to loss of connectedness with languages, traditions and cultural history, togetherness and collective support, loss of support from elders, lack of control over land and resources, increased suicide rate, lack of communal raising of children, lack of initiative, dependency on others and communal violence. It is imperative to indicate that any attempt at placing indigenous children/youth in foster/group care in contemporary times must be conscious of the above and where possible such children must be placed in culturally sensitive and informed foster or group homes (Bombay, Matheson, & Anisma, 2014; Partridge, 2010).

Available historical evidence shows that there has been a persistent and ongoing quest to develop suitable and convenient foster care, including peer composition, for dependent and abused children. As noted in this study, group home care has experienced significant reforms and improvements over the years, however, challenges continue to date and deserve new investigation and intervention.

### 1.3 Contemporary Private and Public Group Homes: The Case of Ontario

Group home care in child welfare has evolved over the past century with ongoing challenges and criticisms. There are public and private group homes. Clear definitions of foster care options, including group home definition are lacking in the research literature so group home care is often confounded with other care options: residential treatment, specialized foster home, treatment foster home, family-based treatment and kinship care (Gharabaghi et al., 2016). Group homes are typically foster care placements for youths who have committed, at least initially, a less serious delinquent act. Originally all were publicly owned and operated, but private group homes using staff or parent models have proliferated in Ontario (Gharabaghi et al., 2016; see Table 1). The maximum number of residents allowed in a group home in Ontario by the Ministry of Children and Youth Services (MCYS) is between five and six in small homes and seven or 8 in large homes (Gharabaghi et al., 2016).

**Table 1 Ontario Foster and Group Homes, 2016**

| Type of Home | Number of Homes | Number of Beds |
|---|---|---|
| Public foster homes[a] | 6,286 | 9,728 |
| Private foster homes[b] | 1,165 | 2,291 |
| Private group homes[b] | 223 | 1,504 |
| Public group homes[a] | 207 | 1,731 |

[a] Operated by Children's Aid Societies. [b] Owned and operated by private service providers.

Preliminary evidence from Gharabaghi and colleagues (2016) suggests that regardless of the model and size, group homes in Ontario may not provide homey

therapeutic environments. A ministry-commissioned panel interviewed 264 youths who had lived or were living in group homes. Prevalent themes cross-validated with popular press-based anecdotes were: (1) group home workers were not empathetic, (2) workers were hostile, using physical restraints on youths or criminalizing them (e.g., calling police for trivial incidents), (3) youths were denied activities such as use of the internet and cell phones and (4) group home discipline emphasized punishment rather than positive reinforcement.

The behaviour of youths in group homes, and perhaps the influence of their peers, may be impacted by the quality of care they receive. Good quality of care proxies seem the workers' academic credentials and experience. In fact, preliminary study of youths in care in Ontario observed protective associations of both professional credentials and years of experience with youths' externalizing behaviours and delinquency (Cheung, Goodman, Leckie, & Jenkins, 2011; Ryan, Garnier, Zphur, & Zhai, 2006). The influence of such resources and their interactions with the influence of peers has not yet been studied among youths in Ontario group homes. This dissertation seems the first one.

As of 2008, there were 90 private organizations operating group homes in Ontario (Gharabaghi, 2009). Private group homes do not have direct funding from the provincial or federal government. They are paid per diem by the Children's Aid Societies that placed children in such homes. They also receive additional payments for children with developmental challenges (OACAS, 2016). The per diem rate is controlled by the Ministry of Youth and Child Services. Rate structures can produce financial challenges for private group home operators and compel them to make decisions that are not child welfare directed (Gharabaghi, 2009; OACAS, 2016). While public group homes pay

competitive salaries and wages to employees, private group homes do not. As a result, working in the private sector is less attractive to prospective employees making staffing an ongoing challenge (Gharabaghi et al., 2016; OACAS, 2016). It is a matter of contention if public group homes provide better care than private ones. I am unaware of any previous empirical investigation of this question.

Congregating delinquent youths in group homes, public or private, without high quality therapeutic milieus could provide potential grounds for negative peer influences (Dishion & Tipsord, 2011). How youths influence each other in Ontario group homes and how group home resources may moderate these influences have not been investigated until this study. A potential sentinel of group home quality—home size—was suggested by a synthesis of controlled studies. That overview of systematic reviews found that smaller (fewer youths per home), probably better resourced group homes have greater preventive impacts than larger, less resourced homes (Osei et al., 2016). Their meta-analysis suggested that smaller homes prevented a third of the delinquent or criminal acts that might otherwise have been perpetrated had youths been living in larger homes. This synthesis of exclusively USA findings also suggested that negative peer influences are smaller (prevent antisocial behaviours) and positive peer influences larger (promote prosocial behaviours) in group homes with fewer residents (Osei et al., 2016). All such review-generated findings are probably best thought of as hypotheses. I tested these hypotheses in the Canadian child welfare system, specifically in Ontario group homes.

### 1.4 Group Homes and their Locations: Does Neighbourhood Matter?

Analogous to group home resources, it stands to reason that neighbourhood resources may interact with peer influences to potentiate the protections and lessen the

risks of youths living in group homes. Albert Shostack (1987) in his book, *Group Homes for Teenagers*, noted that a home's location is critical to its ability to provide quality care as neighborhoods have well known influences, pro and con, on youths. He strongly suggested avoiding locating group homes in neighbourhoods noted for crime and poverty.

Neighbourhood poverty (i.e., prevalent low-income households) is among the strongest predictors of diverse personal and social health problems, ranging from dropping out of high school and becoming pregnant as a teenager to delinquency and crime (DuMont, Widom, & Czaja, 2007; Garbarino, 1998, 2005). Moreover, treatments for myriad consequent mental health problems such as drug addiction are less effective in poor neighborhoods than they are in affluent neighborhoods (Leventhal, Anderson & Dupere, 2011; Yabiku et al., 2007). Alternatively, more economically resourceful neighborhoods tend to have more human resources (e. g; adult role models) as well as social and behavioural opportunities (friendships and community involvement) to which youth may be exposed to on an ongoing basis. And these are in turn inversely associated with delinquency, but as importantly, they are directly associated with prosocial behaviours such as sharing with and helping others (Caughy, Nettles, & O'Campo, 2008; Lenzi et al., 2012). Furthermore, there is a strong association between negative peer influences of prevalent gang members and delinquent behaviours in predominantly poor neighborhoods so it stands to reason that such characteristics might affect group homes and the influence that peers have on their residents (Beyers, Bates, Pettit, & Dodge, 2003; Garbarino, 1998). No study in Ontario has yet investigated the associations of neighbourhood poverty with key health outcomes and behaviours, prosocial or antisocial, among children in care. So, in addition to testing this study's relevant interactions—

neighbourhood poverty by peer influences, positive and negative, among youths in group homes—the study will also allow for the extension of knowledge about the transaction of poverty with Ontario's child welfare system and its affects upon youths in group homes.

### 1.5 Rationale for the Study

Negative peer influences and how they lead to youths' delinquent or even more serious antisocial behaviours have been the prevalent focus of psychological and sociological research for years (Saven-Williams & Berndt, 1990). Peer influences increase during the teen years and can have important consequences for youths' development and behaviours. Although peer influences have been extensively studied in the fields of child health and welfare, no previous empirical study has ever assessed how peer influence, positive and negative, affect the prosocial and antisocial behaviours of youths placed in group homes in Canada. Thorough reviews of interrelated theoretical and empirical research provided very strong suggestions that certain peer influences are protective (Huefner & Ringle, 2012; Lee & Thompson, 2009). Furthermore, these research syntheses also very strongly suggested the protectively moderating influences of organizational and neighbourhood resources (Gorey, Holowaty, Laukkanen, Fehringer, & Richter, 1998; Hou & Chen, 2003; Lemstra, Neudorf, & Opondo, 2006; Rehkopf & Buka, 2006). These, though, have never been studied among youths in group homes. This dissertation study in Ontario group homes does so. It tested positive and negative influences on youths' prosocial and antisocial behaviours in interacting contexts: peer group, group homes and neighborhoods

### 1.6 Theoretical Framework: The Ecological Theory

When the family home or another residence does not offer youth the resources and supports necessary to feel safe and develop they may resort to delinquent and antisocial behaviours (Ryan et al., 2008). Studies show that contextual influences are some of the most robust influences on youth behaviour and development (Beyers et al., 2003; Dodge et al., 2006; Bronfenbrenner, 1979). A group home's inadequate support may lead to youths' lack of self-esteem or hope, anxiety or depression, academic or conduct problems, ranging from risky internalizing behaviours such as illicit drug use to externalizing behaviours such as bullying (Barth, 2005). In such an unsupportive environment, negative peer influences may strongly, perhaps even overwhelmingly, predict youths' delinquent to antisocial behaviours. There is no known specific theoretical framework through which peer influence has been studied. However, Dishion and Dodge (2005) suggested that an ecological framework can be useful in integrating developmental and intervention research to advance knowledge about peer influences, their effects and conditions that strengthen or diminish them .

This study uses Bronfenbrenner's (1979, 1986) ecological model as a theoretical framework. It informs how youth may positively or negatively influence each other in group home care and how different contexts (e. g., group homes and neighborhoods) may moderate such influences. A theoretical analysis of youths in group home placement suggests that when their development is disturbed or not effectively supported it can lead to frustrations that may result in vulnerable youths being negatively influenced by their peers with conduct problems. The ecological model suggests that the developmental lack of a cohesive-self can lead to youths being quite susceptible to negative peer influences in

their environment (Bronfenbrenner, 1979).

Bronfenbrenner (1979) used socio-contextual factors in his ecological model to underscore the fact that the environment (contexts or settings) where children/youth live play crucial roles in their development and ultimately, behaviour. Parental and peer contextual factors are some of the most important factors affecting the course of children's growth and behaviour (Bronfenbrenner, 1986; Dishion & Dodge, 2005). Human development and behaviour, according to Bronfenbrenner (1979), are always influenced by contextual factors. Children grow and develop in multiple contexts and there are interconnections between the influences of immediate contexts (e.g., family home or group home) and the influences of larger contexts such as neighbourhoods (Bronfenbrenner, 1979; Germain, 1991). In effect, a perturbation (or its relief) in the home or neighbourhood can have direct impacts, sometimes synergizing, on a youth's behaviour. Proper care and familial and neighbourhood supports are, therefore, vital to the growth and development of children, whether they live in a foster home, a group home or are in the care of their parents.

Bronfenbrenner (1979) recommended that researchers using ecological theory as a framework consider interactions of all systems in which people (youth) live, not only the immediate setting in which they are situated. He added that having comprehensive knowledge about human (youth) development and behaviour requires a thorough investigation not only of their immediate environment but also of other interconnected environments (Bronfenbrenner, 1979). Therefore, to thoroughly understand a youth's microsystem (peer context, group home context) it is necessary to investigate his/her mesosystem (neighborhood) as well. This study observed negative and positive

influences on youth's behaviour in diverse interacting contexts (peers, group homes and neighborhoods).

The ecological model uses environmental determinism to explain human development where the context is seen as playing a major role in the development of the individual human being. Bronfenbrenner (1979, p. 27) defines human development as a "process through which the growing person acquires a more extended differentiated and valid conception of the ecological environment, and becomes motivated and able to engage in activities..." The model helps us to understand the part context plays in the development and growth of children and youths. It sees human development as part and parcel of the contexts where the individual resides. It argues that the developmental influences on an individual are not limited to a specific context. The interplay of different contexts, beyond ones immediate context, interact with and impact the growth, development and ultimately, the behaviours of children and youth (Bronfenbrenner, 1979). Where care is directly provided, for example, in a group or family home, is the major contexts affecting children's development and behaviour. Germain (1991, p.16) argued that there is a relationship between people and their environments and this relationship is characterized by "reciprocal exchange or transactions in which people and their environments influence and shape and sometimes change each other." In effect the peer context in group homes can potentially influence youths positively or negatively. Kandel (1986) observed that certain peer group memberships are often precursors to negative peer influences and antisocial behaviours, including criminal behaviours. Peer influence can have "powerful effects on the development of children and youths," some

leading to antisocial behaviours, others to reductions in antisocial behaviours (Bronfenbrenner, 1986).

Bronfenbrenner (1979) initially conceptualized these environments as microsystem, mesosystem, macrosystem and exosystem, but later added the chronosystem (Bronfenbrenner, 1986). He defined these different environments as follows.

The microsystem: It includes such places as the family home, day care center, peer group and playground among others. It impacts and it is impacted by its elements. Interactions within this system can influence behaviour change.

The mesosystem: It is comprised of the interrelationships between different microsystems in which children/youth participate (Bronfenbrenner, 1979). Their school, neighbourhood and extended peer networks are some examples. A mesosystem is, therefore, a combination of microsystems. When the growing individual moves into a new system a mesosystem may be formed. Hence, when a youth is placed in a group home due to challenges in his or her microsystem the group home becomes a part of his/her mesosystem. Any perturbation (or supports) in this system impacts all within the system (Bronfenbrenner, 1979).

The exosystem: The developing person is described as a passive participant in this system. This notwithstanding, things that happen in the exosystem affect or are affected by what occurs within the micro- and mesosystems. Parent's place of work and parent's network of friends are examples of exosystems that can impact children.

The macrosystem: These are the beliefs, attitudes, traditions, ideologies and practices of a particular culture. Bronfenbrenner (1979, p. 26) described this system as

"consistencies in the form and content of lower-order systems…along with any belief systems or ideologies underlying such consistencies." In such a system individuals respond to each other differently depending upon their socio-economic status, ethnicity religion and cultural background.

The chronosystem: It is comprised of changes that occur throughout a child's life. Elements of this system include all of the experiences, events and transitions experienced by a growing child. As children grow older they may react differently to occurrences in this environment and may be increasingly able to determine how changes influence them (Bronfenbrenner & Morris, 2006). The ecological model considers processes by which, for example, neighborhood, teachers (mesosystem), parental or group homes and their workers (microsystem) as well as other adults (macrosystem) and the external world (exosystem) influence the development and behaviour of children/youths. It places youths in a complex, ever-changing, interactive network of environments. Youths' component of the model can be further conceptualized as their personal experiences, including abuses they suffered within their biological families (microsystem) and placements in different foster and kinship homes (meso/microsystems) before being finally placed in a group home where they can be said to be in the center of developmental network with varied contextual influences in nested environments referred to as micro, meso, exo and macro systems. These environments merge to influence youths' development and behaviour (Bronfenbrenner, 1979, 1986). This study seeks to examine how the peer-youth environment negatively or positively influences youths in group home care and how group home (microsystem) and neighbourhood (mesosystem) resources differentially impact (moderate) negative and positive peer influences. In an

update to his earlier model, Bronfenbrenner (1979) directed special attention to what he called "developmentally instigative characteristics" which he argued people (youth) possess. These are characteristics that can potentiate or prevent reactions and so may promote positive or negative influences depending upon the availability of resources.

Dishion and Dodge (2005) elaborated on Bronfenbrenner's ecological model and noted that individuals' descriptive and personality traits can affect placement and treatment outcomes. Such traits include age, gender and temperament. These and related characteristics of youths may moderate peer influences and so affect the outcomes of program interventions (Dishion & Dodge, 2005). How youths relate to others in program settings (e.g., social workers, other professionals, peers and neighbours [mesosystem]) play important roles in intervention processes and outcomes. Youths' success in an intervention program, therefore, probably depends upon them, their relationships with others within the intervention milieu and characteristics of the setting itself. So intervention programs targeting youths' conduct problems need to assess and attend to three ecological aspects of people within contexts: (1) the youths themselves, (2) the setting (e.g., group homes and their surrounding neighbourhoods) and (3) other intervention participants (e.g., peers, social workers and allied professionals, family members and neighbours; Palareti & Berti, 2009). Youths with less severe behavioural, mental health and related challenges tend to do quite well in diverse intervention programs and contexts including child welfare programs. Youth with the most severe and chronic conduct problems and related, virulent antisocial behaviours and mental health challenges tend not to have as much success. In fact, they sometimes get worse and can even so negatively influence their peers (Palareti & Berti 2009; Wilmshurst, 2002). It has

been recommended that broad comprehensive investigations across intersecting contexts (group homes, peers, families and neighbourhoods) are needed to most effectively care for and support youths in child welfare or related placements (Leon, Lawrence, Molina, & Toole, 2008). Thus, the current study investigates how youths' peer environment influences their behaviour negatively or positively and how their microsystem and or mesosystem (group home and their neighborhoods) moderate these peer-youth relationships.

The ecological framework is relevant to this study as it provides a contextualizing theoretical framework through which to examine youth-peer relationships within their peer context, peer context influences on youths, youths influences within the context and how their microsystems and mesosystems (group home and its neighborhood) moderate these relationships. It assists in better understanding relationships between youths, their peers, resources and their moderating influences.

### 1.7 Study Questions

In keeping with the tenets of the ecological framework, the overall research question for this study is: Are positive (protective) and negative (risk) peer influences significantly associated with antisocial behaviours of youths in group homes? This question is addressed by examining two more specific questions 1. Do group home resources significantly moderate these peer-youth relationships? 2. Does neighbourhood resourcefulness significantly moderate these peer-youth relationships? Each of these questions may help contribute to a better knowledge and understanding of youth-peer behaviour relationship in group homes care and how this is moderated by group home and neighborhood resources.

*Note*. The same three questions were posed and systematically replicated for youths' prosocial behaviors. Analyses revealed these findings to be near exact replicates, though mirror images, of those for antisocial behaviours. For ease of presentation, questions and findings related to antisocial behaviors, with an emphasis on their prevention, will be presented in the dissertation text. Findings related to prosocial behaviors, with an emphasis on their facilitation, were presented in appendices.

The potential confounding, main predictive and moderating effects of gender were explored. Within certain power constraints, I also attempted to explore the effects of ethnicity, specifically for African Canadian and Indigenous youths.

### 1.8 Study Hypotheses

**Main effects or predictive associations**

1a. Positive peer influences protectively predict youths' antisocial behaviours.

1b. Negative peer influences predict increased risks of youths' antisocial behaviours.

**2-way interactions**

2a. Positive peer protections are potentiated in lesser resourced group homes.

2b. Better resourced group homes buffer negative peer influence risks.

3a. Positive peer protections are potentiated in less resourceful neighbourhoods.

3b. More resourceful neighborhoods buffer negative peer influence risks.

*Note*. The potential confounding, main predicting and moderating (3-way interactions) effects of gender were also explored. As protective or preventive effects are suggested, this study's findings are expected to have important practical—clinical and policy—implications.

## 1.9 Synopsis of Chapters

This study is presented in five chapters. Chapter 1 is the introduction, including the problem definition, study questions and hypotheses. Chapter 2 reviews key conceptual/theoretical and empirical research literatures. Study methods and results are, respectively, presented in chapters 3 and 4. Chapter 5 is the discussion section. Here the study findings are summarized and interpreted. The study's limitations are also presented along with future research needs.

# Chapter 2

## Review of the Literature

Both qualitative and quantitative studies support the notion that youth in care, especially those in group homes, more often engage in delinquent and antisocial behaviours than otherwise similar youths who are not in care (Chamberlain et al., 2006; DeGue & Widom, 2009). In their qualitative analysis of youths in foster care, Stott and Gustavsson (2010) found that nearly half of all youths placed in group homes and half of those who had moved into independent living had had at least one contact with the juvenile justice system for a criminal charge. One potentially potent risk factor seems to be the negative influences of delinquent peers (Ryan et al., 2008). However, no extant study has yet observed this important peer-youth relationship in Canadian group homes. The group care field needs to develop confident knowledge about such peer influences with rigorous research designs. This secondary analytic study with cross-sectional survey and longitudinal panel features may be thought of as a starting point in that venture. It is contextualized by this narrative and systematic synthesis of the relevant extant research.

### 2.1 Children and Development of Delinquent to Antisocial Behaviours

Developmental studies have focused on social settings or contexts where children interact and how contexts may influence their growth and behaviours. Dishion and Skaggs (2000) studied contextual factors impacting adolescents' development and behaviour, and recommended that treatment programs for behaviourally challenged youths must focus, first and foremost, on the peer context. In his social control/bond theory Hirschi (1969) suggested that having friends who are delinquents can lead to negative peer influences and ultimately, to delinquent or antisocial behaviours, but

prosocial friends may influence each other positively. Hirschi explained how a youth may become delinquent or be easily influenced negatively by peers to become a delinquent or to behave antisocially. He argued that each person is born with some criminal tendencies and that human beings by their very nature are self-centered with aggressive tendencies.

Hirschi posited that any youth can become delinquent as it is a tendency inherent in people. Many, however, do not become delinquent because they develop prosocial beliefs and values through associations with friends and/or family members who have prosocial characteristics and tendencies. They may also be attached to institutions such as schools and churches that teach them positive behaviours. All these may help to shape prosocial behaviours and prevent antisocial ones, including delinquent acts and crimes. Hirschi (1969) alluded to how positive parenting and adult direction, supervision and monitoring can prevent children from becoming delinquents. Children who are connected to prosocial activities on a regular basis and are committed to such doings are less likely to engage in delinquent and antisocial behaviours. It was contended that prosocial perceptions and beliefs often direct and stop people from engaging in risky, delinquent or conduct disordered behaviours. The opposite will probably be true if youths' beliefs and perceptions are more antisocial in nature. For instance, if teenagers believe that illicit drug use is wrong they may not use them, but if they see nothing immoral with such drug misuse or abuse they are much more likely to use them (Hirschi, 1969).

Youths get committed to things they are interpersonally connected to. The social development school of thought posits that youths' delinquent or criminal acts result from their earlier exposure to similar, though perhaps less virulent, behaviours in childhood (Catalano & Hawkins, 1996). Social development theorists argue that a socializing agent,

positive or negative, has untold potential to influence the child's later development. Groups in which children or youth find themselves have values, norms, rules and behavioural dictates. To remain in the group, members must conform to such dictates and these can become the basis of a child's and ultimately, a youth's or adult's behaviour (Catalano & Hawkins, 1996).

## 2.2 Parental Upbringing, Childhood Abuse and Development of Delinquent to Antisocial Behaviours: Overview

Hirschi (1969) was criticized for assuming that if a child's parents or friends are delinquent or antisocial that child has the grave potential of becoming delinquent or antisocial. While clearly this assumption does not apply to all children, much research corroborates negative peer influence-delinquent youth associations (Dodge et al., 2006). Also, laissez faire and poor parenting are often cited as conditions that may make youths vulnerable to negative peer influences (Durbin, Darling, Steinberg, & Brown, 1993).

There are two competing views about the association between parenting and the development of delinquent to antisocial behaviours in children and youth. Some have argued that the type of parenting, parenting style essentially, does not have anything to do with the emergence of delinquent behaviours or conduct problems (Harris, 2009). Ferguson and Lynskey (1997) and Horrenkohl, Egolti, and Horrenkohl (1997) disagreed, not so much on parenting style, but behaviours, and suggested that such parental behaviours are critical. They argued that when parents abuse their children in any way it is highly probable that those children will be prone to developing many problems including delinquency and criminality. Analyzing a survey of more than 3,400 teenagers between the ages of 14 and 17 in the USA and Europe, Durbin and colleagues (1993)

concluded that parenting style was associated with both teens' choices of peer groups and their behaviours. Teenagers who qualified their parents as "uninvolved" were consistently observed to engage in more delinquent to antisocial behaviours. However, those having "authoritative" parents (parents who are always responsive to their children's needs) were more likely to engage in prosocial behaviours. Not surprisingly, a child's development and ultimately behaviours seem much contingent upon parental factors. And such positive parental and family influences may help children develop assets, that is, strengths, resiliencies and talents that could serve as protections against negative peer influences (Masten, 2007). Perhaps such positive "familial" influences also apply to group home foster parents, staff and peers.

Parenting style and socioeconomic status notwithstanding, child abuse and neglect can occur in any parenting environment (Maas, Todd, & Sousa, 2008). Associations between childhood abuses and later delinquent behaviours have been extensively documented (Ferguson & Lynskey, 1997; Herrenkohl et al., 1997; Smith & Thornberry, 1995). Though a methodologically challenging field, its most powerful and best controlled longitudinal investigations have consistently affirmed these associations (Crooks, Scott, Wolfe, Chiodo, & Killip, 2007; Loeber et al., 2005; Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; Widom & Maxfield, 1996). For example, Widom and Maxfield (1996) found a strong association between childhood abuse and delinquency and criminal behaviours in their prospective study of more than 900 youths. Among another large sample of 1,000 abused children in care, Smith and Thornberry (1995) stunningly found that 70% of them were arrested for various juvenile crimes, versus 56% of youths who had not been abused as children. And this was cross-validated with

another large, well-controlled prospective study (Crooks et al., 2007). The long-term consequences of being abused or neglected in childhood include delinquency, internalizing and externalizing behaviours, juvenile crimes and other antisocial behaviours (Lee & Whiting, 2007). Abused children may show short and or long-term challenges such as learning problems, substance abuse and "be unable to trust people" (Lee & Whiting, 2007). Importantly, children with any of these behavioural challenges tend to be much more vulnerable to negative peer influences (Müller & Minger, 2013).

### 2.3 Children in Foster Care: Earlier Experiences of Abuses and Adversities: Later Development of Resiliencies

Ecological factors have influences on children's ability to develop resilient skills. A conducive micro, meso, macro and exo systems made of consistent support and positive interaction between children and their caregivers, supported by adequate and needed resources, including good policies, may encourage development of resilient skills (Rutter, 2007; Ungar, 2011). Children can face adversities when perturbations occur within their life space contexts (home, school and neighbourhood). Children who experience such childhood adversities over an extended period of time are at high-risk of developing low self-esteem, depression, suicidality and conduct problems (Masten, 2007). Preliminary studies show that with time some abused children in foster care adjust to those earlier adversities and traumas, develop positive temperaments, good academic skills and positive personality traits, are optimistic about life and have self-control. These characteristics make such children resilient in the face of life's challenges, including negative peer influences (Luthar & Cicchetti, 2000).

Resilience simply connotes children's ability to survive developmental inhibitors

and to still grow, even thrive, becoming useful to themselves and their communities despite their challenges. Resilient children's behavior, on average, becomes more acceptable compared to their peers who suffered similar maltreatment in childhood but failed to develop resilient skills (Masten, 2007). Resilient assets may be protective in future potentially adverse contexts such as placement in large group homes. Masten (2007) identified a number of factors that may support the development of resiliency among traumatized children: Positive adult and peer role models bolstered by caring others in their neighbourhoods, schools and elsewhere. Proper and adequate supervision with consistent discipline and positively reinforcing communication between caregivers and children across contexts also seem to facilitate the development of resilient skills (Masten, 2007). Werner and Smith (1992) longitudinally studied high risk youths with coping problems and found that the majority of them overcame those problems by their thirties. Environmental supports potentiated these transformations. And the lack of such resilient transformation was largely attributed to the lack of environmental supports in transaction with mental illness, academic and or behavioural challenges (Masten, 2007).

A disorganized and unstable family home (microsystem) where children cannot be offered the necessary resources to assure them of safe and nurturing environment is the most destructive force to a child's development. If relationships in the microsystem break down, children may potentially not have the required tools to explore other parts of their environment. Children look for affirmations from their microsystem and when they cannot find it they seek attention in inappropriate places where they develop challenging behaviours including anti-social behaviors, lack of self-discipline and inability to provide self-direction. These behaviours become eminent in teen ages with lack of any resilient

skills or characteristics. However, when a good or strong caregiver responds positively to a child's needs and expectations the child's inherent capacities are preserved and he/she grows to become resilient and respond well to frustrations (Bronfenbrenner, 1979; Rutter, 2005).

Majority of youth in group homes fail to develop cohesive self because of challenging situations in their microsystems during childhood. Consequently, they become less resilient and cannot accommodate frustrations they suffer in other environments. Such youth yield easily to negative peer influence (Müller & Minger, 2013; Rutter, 2007). Children in foster care, including group home care, face prevalent psychosocial and behavioural challenges, making it imperative that foster parents, social workers and allied professionals facilitate their development of resilient skills. Timely and quality care, together with secure attachments to trustworthy caregivers (e.g., foster parents), have been suggested as main protective factors that facilitate such development. Others include good mental health and school and community or neighbourhood connections (DuMont et al., 2007; Legault, Anawati, & Flynn, 2006). Masten (2007) also identified secure attachment to a positive and authoritative caregiver and having a positive adult role model as protective factors in overcoming adversities. Youths in foster care with lower levels of anxiety are more prosocial, have more self-esteem and are generally more resilient and can withstand negative peer influences better than their peers with higher levels of anxiety (Legault et al., 2006). Clearly, these potential protections all have implications for group home resourcing. Theoretically, better resourced homes and communities ought to support more resilient youths and prevent negative peer influence.

## 2.4 Peer Influences

In group homes as elsewhere peers undoubtedly influence each other. It is the relative weight though of the opposing interpersonal forces of their positive and negative influences that remain little known in many contexts and not well known at all in group homes (Dishion et al., 2005). The number of delinquent or otherwise behaviourally challenged youths in a group determines, in part, the probability of interpersonal interactions and so the possibilities of peers influencing each other, positively or negatively (Dodge et al., 2006). Group constellation probably also matters. For example, a group with a number of delinquent youths versus only one would more likely negatively affect the other non-delinquent, better behaved group member (Dodge et al., 2006). Handwerk, Field and Friman (2000) believed that concerns about negative peer influences in group care are exaggerated as there was no solid empirical evidence to support the claim. They argued that in many instances there were positive changes in youths' delinquent behaviours after they were placed. Alternatively, Lee and Thompson (2009) found that less than 1 of every 10 such youths' delinquent behaviour decreased after they had been placed in residential care. Peer influence phenomena, positive versus negative have yet to be coherently studied in child welfare, group home contexts. However, theorists and researchers have written extensively about such effects in various other group treatment or programmatic settings for youths.

**Negative Peer Influence: Process of Occurrence.** Negative peer influence connotes processes whereby risky to antisocial behaviours are modeled for and ultimately instilled in vulnerable youths by their risk-taking, delinquent to criminally antisocial peers. It often occurs in natural settings where teenagers are grouped. The risky to

antisocial behaviour of peers can influence well-behaved youth to smoke cigarettes, use drugs, abuse alcohol, be aggressive, become mean, even violent, and commit crimes, even violent ones (Dishion & Tipsord, 2011; Kornienko, Dishion, & Ha, 2018; Warren, Schoppelrey, Moberg, & McDonald, 2005). Negative peer influence may occur during or after a vulnerable youth have contact and interaction with antisocial behaviour peers (see Figure 1).

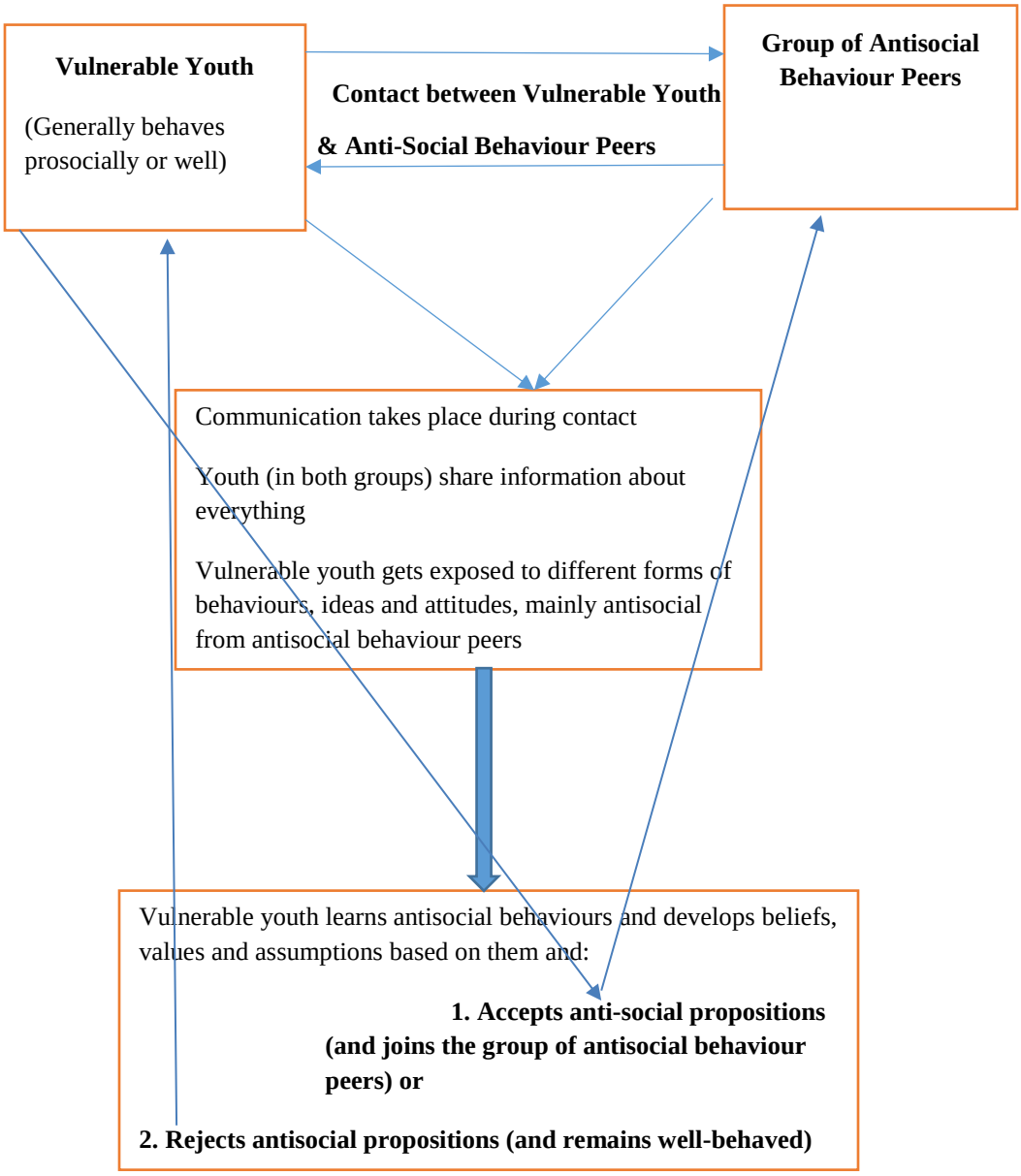


**Figure 1 Processes through which Peer Influence Occurs**

Placing behaviour challenged youth together in a group has been observed to course negative peer influence effects where youth may engage in risky and anti-social behaviours such as stealing, substance and weapon use and other serious criminal acts (Gottfredson, 1987; Feldman, Caplinger, & Wodarski, 1983). Vulnerable youth who are placed or associate with risk taking peers can potentially experience negative peer influence faster than those who do not. Younger teens are more susceptible to negative peer influence. The level of maturity and or the sex of a youth may determine the nature and the process of the influence (Dishion & Tipsord, 2011). Elliot and Menard (1996) argued that the intensity of exposure or association with risk taking friends before the insurgence of peer influence vary across groups and settings.

Inference from available studies point to the fact that peer influence is a process that starts with contact among youth when they are placed in groups for treatment or intervention purposes, alternative education programs or when in a group for any other social activity. Communication or 'peer talk' takes place among them during such contacts. Youth (both vulnerable and antisocial/risk taking) share information about everything, especially antisocial ideas. They get exposed to different forms of behaviours, ideas, attitudes and practices (mainly antisocial) from each other. Youth especially the vulnerable ones, learn and respond (accept or reject) antisocial behaviour propositions from their risk taking peers and develop beliefs, values, assumptions and biases based on them. Negative peer influence does not occur accidently. Vulnerable youth willingly accept negative peer influences, join the group of antisocial behaviour peers (Figure 1) and behave antisocially. Or they may reject negative peer influence, remain vulnerable (well-behaved) and continue to act prosocially. Arguably, vulnerable youth have options

either to accept or refuse negative propositions from peers. Youth who have developed resilient characteristics and are bonded with prosocial activities are better equipped to ward off negative peer influences.

The flip side of negative peer influence is positive peer influence where well-behaved youth may try to influence their antisocial peers to behave in a manner that is more positive, socially acceptable and promotes friendliness. The prosocial behaviour of youth can potentially influence their peers to be mindful of the feelings of others, be considerate, honest, empathetic and helpful. Prosocial behavior by youth in or outside their group home can have a significant impact on peers' motivation for good behavior and positively contributing to the home, neighborhood and the larger community. As with negative peer influence, diverse personal and social-systemic factors including culture, gender, social location, religiosity and the media potentially determine and or moderate positive peer influence-prosocial behavior relationships (Myers, 1996; Spinrad et al., 2006).

**Negative peer influences and antisocial behaviours: An overview.** Though peer influences can be either negative or positive, the literature has focused more on negative influences. Dishion and Tipsord (2011, p. 190) defined negative peer influence as "a mutual influence process that occurs between an individual and a peer and includes behaviours and emotions that potentially undermine one's own development or cause harm to others." Antisocial behaviour is any type of conduct that may cause discomfort or distress to another person(s) or breach someone's rights. It may include but not limited to behaviours such as fighting, stubbornness, bullying, bad temperament, rejecting or being cruel to others (Calkins & Keane, 2009). Many teens do not perform their first antisocial

act until after they have had contact with a delinquent friend (Mottif, 1993). Positive peer influences tend to be alluded to, but negative peer influences, that is, the transferring of antisocial behaviour between peers, dominate the research (Dishion, McCord, & Poulin, 1999; Gecas & Seff, 1990). Negative peer influences are often portrayed as infectious diseases, vulnerable youths who come into contact with delinquent youths, for example, can be at risk of becoming infected with delinquency and or conduct disorders (Müller & Minger, 2013).

There is developing evidence about specific conditions and circumstances that may potentiate negative peer influences. Deviancy training has been identified as a main channel through which negative peer influences occur in group settings. Deviancy training occurs when such teens advertently support, encourage and reinforce the antisocial behaviours of their peers in the group (Dishion et al., 1996; Gifford-Smith, Dodge, Dishion, & McCord, 2005). The intensity of exposure to delinquent friends seems the best predictor of deviance transmission to previously non-delinquent, better behaved youths (Elliot & Menard, 1996; Gifford-Smith et al., 2005). It is also important to note that negative peer influence can occur without any coercion by the influencer (Dishion & Tipsord, 2011; Warren et al., 2005). Group socialization theorists have noted that youths most typically, willingly follow group dictates (Lightfoot, 1992). Again, these potential risks have implications for group home resourcing. However, much is known about the risks of negative peer influences in group contexts such as detention centres, alternative education programs, mental health clinics, and boot or wilderness camps, but much less in child welfare contexts and little to nothing in Canadian foster care, including group home care (Dishion & Tipsord, 2011; Dodge et al., 2006).

An early example was observed while the Cambridge-Somerville youth program was being experimentally evaluated (McCord, 1992). The large in-house treatment program's main objective was to prevent future delinquent acts among delinquent youths. After five years boys in the treatment group, who were intensely exposed to other delinquent boys, were much more likely to be delinquent and to have experienced related adverse behavioural or mental health effects than were those in the control group. After 20 years McCord (2003) found that such adverse treatment reactions—criminal and other antisocial behaviours—among the now men who had been in the treatment group were robustly maintained. This randomized controlled trial suffered several methodological limitations. Notwithstanding its exclusive focus on boys/men, its assignments seemed to be largely non-blinded and selective attrition was not effectively ruled-out. Still, the study provided a heuristic exemplar of the possible potency of such negative peer influences, especially in the lives of already at risk youths.

McCord's longitudinal findings do not seem, however, to have been mere methodological artifacts as they have since been systematically replicated in numerous congregate/group treatment contexts. Examples began to abound. An observational cohort of nearly 500 adolescent boys in Sweden found that pre-delinquent boys who participated in a social-recreation program (designed to prevent delinquency), committed more delinquent and criminal acts than nonparticipants. In fact, the most frequent program attendees had the highest incidents of juvenile crimes and reoffences (Mahoney et al., 2001). Though again restricted to boys/men and being quasi-experimental at best, Mahoney and colleagues' study probably left several potential personal and familial confounds unaccounted for. It and other replicates across contexts, designs and

investigators, however, were consistent with the emerging negative peer influence-antisocial behavior theory.

Even specialized academic programs, designed to help challenged youths, can fall prey to unintended, counter-hypothetical and counterproductive, probable effects of similarly challenged peers. When schools aggregate and place students labelled as high-risk, academically or behaviourally, in homogenized special education classrooms, such concentrated exposure to other high-risk peers tends to produce null results at best; at worst academic performance diminishes further with concomitant increases in alcohol and drug problems and related behavioural problems, including delinquency and criminal activity (Duncan, Boisjoly, Kremer, Levy, & Eccles, 2005; Warren et al., 2005). All of these studies can claim at least one methodological strength, that is, matching on a potential confound. And because they were not experimental they each necessarily had their limitations. In aggregate though they seemed to confidently converge on the notion that concentrating similarly challenged youths into treatment programs ought to be undertaken only with much forethought and probably only with ample resources.

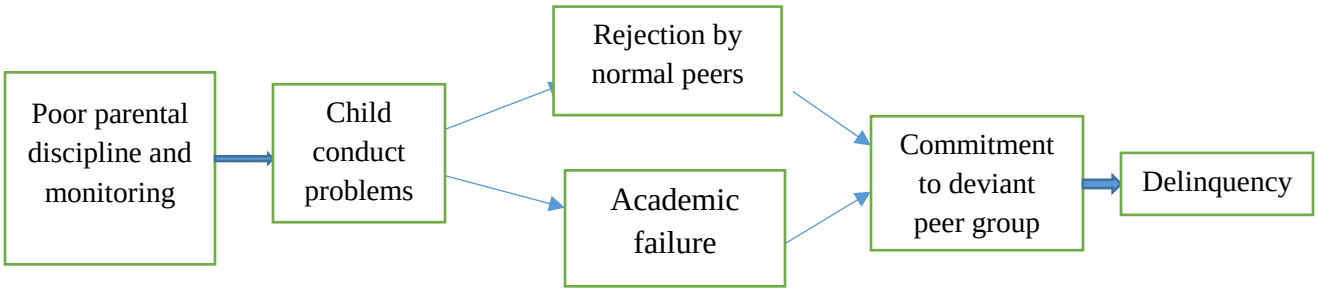


**Figure 2 Evolution of delinquent behaviours: Parenting factors**
**Source: Patterson, DeBaryshe, & Ramsey, (1989)**

Prevalent antisocial behaviours among delinquent youths include being aggressive or violent, bullying or fighting, using tobacco, alcohol or illicit drugs, and or engaging in any of a continuum of delinquent to criminal acts involving property destruction to

violence. Such behaviours hurt others, the youth and the community. Furthermore, their great potential to disrupt any therapeutic milieu is clear (Acker, 2007). Patterson, DeBaryshe and Ramsey's (1989) model made observations relevant to this study.

The phenomenon outlined in Figure 2 seems quite relevant to the group home, foster care context, though I am not aware of any such extant study. The model originated by Patterson and colleagues (1989) and substantiated by Jean Twenge and her colleagues (2007) identified factors that influence family relationships and may play vital roles in the development of delinquent behaviours and related conduct problems among children and youth. Such processes may be analogous in group homes, the roles of parents (foster parents or staff/workers) and siblings (peers) perhaps being even more vital. The model contends that children's conduct is primarily a function of their caregivers. In group homes these translate into foster parent or worker factors, ranging from positive and supportive to, inconsistent and punitive; and into peer factors exemplified by prosocial to relatively antisocial behaviours. Such are central tenets of this dissertation that to the best of my knowledge have not yet been studied in Canadian group homes.

**Potential moderators of negative peer influences: Review.** Müller and Minger (2013) argued that if intervention strategies such as group home care programs are to be effective then identifying possible moderators of negative peer influences may be critical. Youth susceptibility to negative peer influence depends upon "personal and social-contextual conditions" and developing adequate knowledge about such potential moderators would be an important step toward prevention (Müller & Minger, 2013, p. 2).

It has been suggested that adolescents typically have similar behavioural traits as their friends and are most often attracted to peers they think are like them (Brechwald &

Prinstein, 2011; Kornienko et al., 2018). This observation of a "selection or socialization effect" is well supported by extant research (Brechwald & Prinstein, 2011, p. 166). During their development youths typically experiment with various groups and activities. They often start with non-delinquent groups and deviate along the way to delinquent or even more deviant, crime-committing groups (Dishion, Veronneau, & Myers, 2010; Gifford-Smith et al., 2005). Since moderations of such effects, buffering or potentiating, may result from interactions with personal and or social-structural factors (Dishion & Dodge, 2005; Müller & Minger, 2013) evidence in support of them, or lack thereof, is presented and discussed below.

***Characteristics of youths*.** Elmer, Reicher, and Ross, (1987) in their investigation into delinquent conduct among young people found that girls may be more susceptible to negative peer influences than boys. Age also seems a factor to consider in any such analysis. Early to mid-adolescence is a time when boys and girls become more susceptible to negative peer influences (Dishion et al., 2010; Kornienko et al., 2018; Müller & Minger, 2013). Research shows that aggressive behaviours are prevalent among groups of children aged 6 to 13, while drug and alcohol use, sexual promiscuity and delinquency are more prevalent among older teens (Adams, Bukowski, & Bagwell, 2005). Also, youths seem more negatively influenced by peers who are slightly older (Adams et al., 2005; Dodge et al., 2006). Certainly youths' family characteristics can also be important. Using data from the USA Study of Adolescence, Haynie and Osgood (2005) longitudinally studied such factors. They found evidence in support of the notion that the negative influences of delinquent or troubled peers are highest among groups of youths who are not adequately supervised by adults. Positive or negative parental

influences certainly seem germane. Elliot and Menard's (1996) earlier National Youth Survey-based analysis reached a similar conclusion.

Finally, consistent with colloquial theories of teenagers' behavior, that natural yearning to be recognized as "cool" or popular increases the chances of being influenced by delinquent peers who have already popularized themselves through their risky, deviant or antisocial behaviours (Cillessen & Rose, 2005). Consistent with social learning theory, teens seem to easily concede to normative social influences of popular peers as they yearn for popularity (Cillessen & Rose, 2005; Cohen & Prinstein, 2006; Dijkstra, Cillenssen, Lindenberg, & Veenstra, 2010). Child welfare practitioners will see the potential utility of this notion, especially in group homes. One can envision, for example, using life space interventions to minimize the influence of popular antisocial peers while maximizing the influence of popular prosocial peers.

***Characteristics of youths' friends***. Boys seem more easily influenced by fellow delinquent boys, while girls may be more readily influenced by peers of the opposite sex (Warr, 1996). Not surprisingly, like youth's age, peer's age is probably also important (Steinberg & Monahan, 2007). Peer influences can be short to long-term, with their impacts generally being greater the longer the peer-youth exposure. This means that in group residential contexts, the younger the peers and youths are when placed the greater will be their respective influences (Dishion & Tipsord, 2011; Nelson & Dishion, 2004). In their study of school girls, Hanish, Martin, Fabes, and Herzog (2005) found those who associated with aggressive peers when younger were the most aggressive when older.

***Institutional/group home care characteristics and case mix*.** The number of youths in an institution or group home and their composition, that is, whether they are a

homogeneous delinquent group or a mixed group (delinquent and non- delinquent) as well as overall program endowment (availability of resources or lack thereof) probably largely determine the extent to which peers negatively or positively influence other youths in institutional and or residential settings (Duncan et al., 2005; Feldman, Caplinger, & Wodarski, 1983; Gottfredson, 1987). Randomized controlled studies of school and community-based programs have convergently replicated this phenomenon (Feldman et al., 1983; Gottfredson, 1987). Deviant group members consistently had the most influence in programs where they were in the majority and relatively much better behaved youths were in the distinct minority. Though little studied in group homes, never in Canada, such factors seem critical for group home providers to better understand.

**Positive peer influences and prosocial behaviours: Developing perspective.** Prosocial behaviours, sometimes referred to as "voluntary behaviours," tend to give people a sense of satisfaction or joy as they express interest in or help others. They involve sharing with or assisting others and voluntarily engaging in activities to benefit them. Prosocial behaviours are informed by honesty, empathy and a commitment to helping (Myers, 1996; Spinrad et al., 2006). And as with negative peer influences, diverse personal and social-structural factors probably determine and or moderate the positive peer influence-prosocial behavior relationship.

Preliminary studies have demonstrated the protective effects of positive peer influences among groups of vulnerable youths (Knorth, Harder, Zandberg, & Kendrick, 2008; Lee & Thompson, 2009; Robst, Armstrong, Dollard, & Rohrer 2011). Over the past decade evidence on their stimulation of prosocial interactions among adolescents has accumulated (Knorth et al., 2008; Lee & Thompson, 2009; Robst et al., 2011). A meta-

analysis of nearly 400 group and community-based intervention studies of delinquent youth did not find consistent support for the negative peer influence hypothesis (Lipsey, 2006). Lipsey's synthesis, however, did estimate a "modest, though practically significant, effect of positive peers on recidivism." Interestingly, his analysis also suggested that key resources like group leaders' experience were directly associated with the size of programs' effects. Such resources may operate to diminish negative peer influences while potentiating positive ones. Furthermore, Lipsey's germinal synthesis clarified that we still know little about the moderating effects of other program characteristics. This dissertation study will closely examine the effects of program and related community resources, aggregate proxies of overall program endowments.

Studies have begun to systematically replicate the notions that peers in groups, even in residential treatment programs, can be positively influential and that treatment program resourcefulness probably moderates/potentiates such positive influences. This was observed, for example, in an archival study of residential treatment of nearly 1,500 youths with conduct disorder or oppositional defiant disorder (Huefner & Ringle, 2012). Though limited to one USA agency, it provocatively found little evidence of negative peer influences along with ample evidence of positive peer influences as well as their potentiation by experienced workers.

Prosocial youths share with others, are mindful of their feelings, considerate, empathetic and helpful. These are global prosocial behaviours, this field's most commonly assessed, as opposed to situation-specific ones (Green, Shirk, Hanze & Wanstrath, 1994). It is easy to imagine how such behaviours might facilitate any therapeutic milieu, but especially that established in a group home where any number of

at risk youths reside. It also makes sense that having close friends modeling prosocial behaviours would tend to positively influence youths to similarly engage in them. Positive parenting, exemplified by empathetic understanding, also contributes to the development of prosocial behaviours in children (Carlo Crockett, Randall, & Roesch, 2007; Carlo & Randall, 2002). Similar, but not yet tested, relationships are naturally hypothesized for foster parents, social workers and youths in group homes.

High quality friendships directly, significantly and substantially influence prosocial behaviour development. Barry and Wentzel's (2006) longitudinal study of more than 200 youths found that the closer and more frequent were peers' positive interactions the more they influenced each other's prosocial behaviours. Another analysis of rural youths found this same, essentially confidant or very close friendship-prosocial behavior relation to be particularly true for girls (Carlo et al., 2007). Finally, Amélie Nantel-Vivier and her colleagues' (2009) synthesis of longitudinal studies in Canada and Italy observed slight diminishments in prosocial behaviors with age. Most studies in this field, it seems, have not adequately assessed the effect of gender, probably as an effect modifier, nor of age, probably as a confound. The effects of age and gender on peer influence relationships among youths in group homes in Ontario were tested in the current study. Not much research has been done on the determinants of prosocial behaviours among youths, especially those in group homes. Some, potentially key determinants, including geographic context, culture and gender are reviewed below.

***Contextual determinants: Rural-urban debate.*** Geographic location may be an important determinant of prosocial behaviours. Some studies observed that people in large cities are much less likely to practically help each other than are people in small

rural communities (Kortex & Ayvalioglu, 1981; Krupat & Guild, 1980). This seemingly contentious observation has been empirically confirmed by some, but refuted by others (Amato, 1981, House & Wolf, 1978; Steblay, 1987). It may be that the urban-rural dichotomy is too simplistic, perhaps leaving out other important elements of place. For example, community or neighbourhood-level socioeconomic factors such as their relative concentrations of the poor or well to do are probably critically important. This is one of this dissertation's central theses.

***Peer rejection or labelling.*** Youths who feel rejected or labelled (as bad or delinquent) are less likely to behave prosocially. A preliminary study by Twenge and colleagues (2007) tested this "peer rejection" hypothesis and found that when participants in a series of experiments were manipulated to believe that they would eventually be rejected by their peers, their hitherto prosocial behaviours diminished rapidly. Such has been consistently observed over the years across study contexts and designs (Balliet & Ferris, 2013; Gest, Graham-Bermann, & Hartup, 2001; Twenge et al., 2007). While prosocial behaviours are strongly associated with acceptance, peer rejection is strongly associated with the cessation of prosocial behaviours. Clearly, such has important implications for the group care of all youths.

***Race, ethnicity and culture*.** Culture potentially determines, in part, a person's tendency to behave prosocially. Israeli children, for example, were observed to be more helpful and cooperative than North American or European children (Levine, Norenzayan, & Philbrick, 2001). It has also been argued that children from capitalist societies behave less prosocially than children from more socialist societies (Miller, Bersoff, & Harwood, 1990). Another study in the US suggested that newly arrived Latino youths behave more

prosocially than their native counterparts. It, however, also observed that such prosocial behaviours atrophied as they became acculturated (Knight and Kagan, 1982). I am unaware of any such relevant study in Canada.

***Gender.*** There seem to be gender differences on prosocial behaviours among youths. Some research has suggested that girls and young women attach more importance to some prosocial behaviours and actions than do boys and young men (Beutel & Johnson, 2004; Eisenberg & Fabes, 1998). One preliminary study found that Hispanic boys behaved less prosocially than others, and older boys attached less importance to prosocial behaviours than did younger boys. Also, white boys seemed to attach less importance to prosocial ideas and behaviours than white girls or black boys or girls (Eisenberg & Fabes, 1998). Some have contended that both boys and girls tend to behave in prosocial manners except the generally accepted definition of prosocial behaviour may be biased toward what girls more typically do (Eagly, 2009). Essentially nothing is yet known about any such gender divides in child welfare practice generally or in group home care specifically. This dissertation will explore them.

***Parenting and socialization.*** Parents are the first to socialize their children on morals, ethics, on the importance of helping others and of contributing to society. In short, they are the first teachers of prosocial behaviours (Carlo, Crockett, Wolff, Beal, 2012; Eisenberg & Fabes, 1998). Also, numerous studies have observed close associations between youths' prosocial behaviours and the developmental opportunities that they were provided with by their parents, including opportunities for a high-quality education and consequently to develop diverse talents and to enjoy sound mental health (Bar-Tal, 1982; Wentzel & McNamara, 1999). Such parent-related opportunities could be

confounded by their socioeconomic statuses. Such household-level socioeconomic factors are probably also critically important and will be addressed in this dissertation.

***Religiousity/spirituality.*** There is a strong association between religious affiliations and prosocial behaviours. People with religious beliefs and activities are more likely to be honest or truthful, kind and helpful (Bonner, Koven, & Patrick, 2003; Norenzayan & Shariff, 2008). While Grossman and Parrett (2011) did not find any evidence supporting the religiosity and prosocial behaviour hypothesis in a field experiment, Hardy and Carlo (2005) found religiosity to be significantly associated with responsibility and altruistic behaviours in another. They argued that such spiritual emphases and religious teachings promote kindness and service. And people who are religious may then be more fulfilled and satisfied with their lives. Little is known about the operation of these factors among youths let alone youths in group home care. But as in other practice domains the potential usefulness of incorporating spirituality into social work practices seems intriguing.

***The media.*** The electronic media can negatively or positively influence children and youth. This is contingent upon what they watch on TV. For example, some programming can ignite emotional problems such as anxiety and or aggressive externalizing behaviours (Wilson, 2008). However, more positive informational and educational programs can positively impact children, facilitating their prosocial skill development. Some have suggested that the altruistic nature of some channels (e.g., Disney Channel) inculcate prosocial values and behaviours in children (Ostrov, Gentile, Crick, 2006; Wilson, 2008). A two year longitudinal study of media influences on preschoolers' observed that positive electronic media on either television or the internet

significantly predicted prosocial behaviours among boys and girls (Ostrov et al., 2006). Such has clear implications for 'the operation' of any home including a group home.

***Treatment/intervention models.*** Positive Peer Culture was initiated in the 1970s by Vorrath as a treatment model for delinquent youth. It has since then become a popular treatment model in North America and some European countries. The model is used to assist in addressing negative peer influences (Vorrath & Brendtro, 1985). It targets youth in care and focuses on groups of 6 to 8 youths per group. The model's main premise is that natural settings play vital roles in youth's psychological and behavioural development and actions. It attempts to challenge and change negative peer influences to positive ones (James, 2011; Laursen, 2010). The model uses a number of methods including pro-social attitude development to inculcate positive behaviour skills in youth. It is assumed that changing the psycho-social mentality of youth can help them transform negative behaviours to positive ones. The model has been tested and found to substantially inculcate positive behaviours (Ryan et al., 2006). Another well researched model designed to bring positive behaviour changes to at risk youths is the Teaching Family Model (TFM). It has been used in group homes and considered one of the most effective interventions to assist delinquent youths in changing their behaviours in group settings (Bedlington, Braukmann, Ramp, & Wolf, 1988; Lee & Thompson, 2009). Bedlington and colleagues (1988) compared the gains made by youths placed in TFM homes versus those placed in non-teaching family model homes. They found that youths in TFM placements made significantly more positive behavioural gains including, more positive communications and interactions between the youths and adults. Larzelere, Daly, Davis, Chmelka and Handwerk (2004) affirmed the model's positive effects, noting it

tremendously reduced delinquency rates and increased discharge rates among 400 youths placed in TFM-based care. Another similar study observed TFM's similarly positive effects on youths' relationships with their families and their reduced crime rate (Slot, Jagers, & Dangel, 1992). The model, however, has been tested primarily by the same people who developed it (Kingsley, 2006). Though promising, independent and better controlled studies are needed to substantiate this observation. Programs such as Peer Coping Skills training, Boys and Girls Clubs, Big Sisters Big Brothers, Alcoholics Anonymous and similar self-help or peer support groups may also serve as augmenting interventions to assist people with behavioural change. These programs can clearly affect positive peer influences and may instill more prosocial behaviours in youths (Allen, Chango, Szwedo, Schad & Marston, 2012; Bierman, 2003; Matz, 2014; Müller & Minger, 2013). Little is known, however, about the transactions of such diverse interventions with the diverse characteristics of youths in care, particularly group home care. Their potential though to facilitate more prosocial home environments seems clear.

### 2.5 Peer Influences in Other Treatment Contexts

**Group interventions.** Dodge and colleagues (2006, p. 3) noted that when a normal teenager is placed in a "group setting with deviant peers" there is a high probability that the teenager's behaviour will change for worse and when a deviant youth associates with other deviant peers what results is a worse form of antisocial behaviour. The writers qualified the phenomenon as negative peer influence and argued that it pervades all sectors where teenagers are grouped, including treatment settings, training schools, alternative education programs or reform schools, mental health clinics, detention centres or jails as well as boot or wilderness camps (Dishion & Tipsord, 2011;

Dodge et al., 2006). Consistent with group socialization theory, persistent exposures of youths to the most problematic delinquent and virulent antisocial behaviours lead predictably to the transmission of those behaviours through negative peer influences (Dishion, Nelson, & Bullock**,** 2004; Dishion & Tipsord, 2011; Dodge et al., 2006; Dozier et al., 2014; Harris, 2009). Group socialization theorists conclude that teenagers voluntarily bond for various purposes, ranging from academic (prosocial) to problematic (antisocial [e.g., illicit drug use]; Harris, 2009). Their relative direction then, prosocial or antisocial, may be affected by the way group programs, including group homes, are designed. The lack of effective adult monitoring is probably a prevalent compounding risk factor in all of these systems, but especially in the criminal justice systems. It is largely associated with recidivism and such recidivism and the aggregate amount of time youths spend in detention or jail is significantly associated with drug abuse and criminal activity in adulthood (Florsheim, Behling, South, Fowles, & DeWin, 2004; Harrington et al., 2005; Osgood & Briddle, 2006). The grave problems that attend lacks of effective supervision in juvenile detention centres probably also apply to group homes.

**Community-based programs.** Community based-programs; social-recreational programs such as midnight basketball leagues and related education and training programs have the grave potential to produce negative peer influences (Mahoney et al., 2001). Dodge and colleagues (2006) contended that such community programs meant to assist teenagers in behavioural change can be as unhelpful as they are helpful as they can be natural reservoirs of negative peer influences. The programs listed on Table 2 are examples of organized youth programs that can inadvertently encourage negative peer influences and engender antisocial behaviours among their participants. Such represents

an obvious challenge to any congregate youth intervention. The advancement

**Table 2 Community, Educational, Juvenile and Mental Health Group Programs that Aggregate Youths and Produced Negative Peer Influences**

| |
|---|
| 1. Group treatment programs with more deviants than non-deviants |
| 2. Group treatment programs with leaders who lack experience and have poor skills |
| 3. Group therapy programs that give open time to youth with less or no supervision |
| 4. Group homes or residential placements |
| 5. Tracking and grouping students performing academically poorly in school |
| 6. Forced grade retention for disruptive teenagers |
| 7. Aggregating high risk behaviour students into special education classrooms |
| 8. Group counselling solely for deviant youth |
| 9. Alternative school program for delinquent teenagers |
| 10. Boot or brat camp |
| 11. Juvenile offenders put together in prison |
| 12. Scared Straight |
| 14. Recreational programs for youths not adequately supervised or monitored |

of knowledge to maximize positive effects while minimizing the potential negative effects of such programs in group homes is a central objective of this dissertation.

### 2.6 Positive and Negative Peer Influences: Influencer-Influenced Perspectives

Processes by which delinquent peers influence other youths negatively are well documented, yet how positive peer influences occur is not. In influencing vulnerable youths delinquent youths expect them to respond positively. Such a positive response results in a negative influence and subsequent delinquent to antisocial behaviours (Figure 1). Brown, Bakken, Ameringer and Mahon (2008) described such peer influence processes as transactional with reciprocal influence exchanges. However, extant literature more typically depicts peer influence processes as linear and unidirectional, where only vulnerable youths are influenced, most often negatively. It seems, however, that two processes and outcomes may happen simultaneously when delinquent peers attempt to influence youths. At risk youths may get influenced negatively and the delinquent peer

may get influenced positively. The latter has generally not been studied and so is not well documented. Anecdotally, youth sometimes "react" and consciously reject all delinquent propositions of their peers (Frager, 1970; Silvia, 2005). The occurrence of one, the other or both outcomes depends upon how youths respond to their peers, and such responses seem related to a constellation of personal, familial and social-structural factors (foci of the preceding sections' reviews). This dissertation essentially hypothesizes that resources matter. That is, social-structural factors related to resourcefulness or program endowments (group home and associated neighbourhood resources) will principally determine the relative precedence of prosocial or antisocial outcomes in group homes.

Contact and communication facilitate peer influences, pro and con (Figure 1). And it is clear, especially in group home contexts, that preventing such peer contacts and communication is not only impossible, but undesirable. So given that the prevention of peer influences in group homes is not possible, the challenge becomes one of facilitating the social-structural predictors of positive peer influences while impeding or eliminating the social-structural predictors of negative influences. Advancing better understandings of such social-structural, socioeconomic and program endowment-related factors—this dissertation's central goal—will be needed to do this effectively.

### 2.7 Peer Influences: Summary Critique of the Literature

Greater methodological rigour is called for in peer influence studies. First, Lipsey's (2006) synthesis of this field found it to be largely underpowered, sampling error possibly accounting for many study findings. Larger studies are needed. Second, much of the peer influence research has relied on third-party or archival measures, measures that may be more speculative, biased and or unreliable and less valid than

primary source measures (Brown et al., 2008). Such validated measures, based on the reports of youths ought to take precedence, being cross-validated with the reports of parents, foster parents or staff, when possible. Third, longitudinal cohorts have tended to be retrospective, accounting for few potential confounds, while randomized trials in this field have been all but nonexistent. Rather, trials have tended to be non-random and non-blinded (Osei et al., 2016). Fourth, studies have generally not considered how racialized ethnic minority group statuses may influence peer influences. Given how important cultural backgrounds are in understanding group processes among youths (Frager, 1970; Fukutake, 1962), future studies ought to study them. Fifth and central, like the past generation of social work research, this interdisciplinary field has primarily posed reduced questions about main effects. More complex questions about the interactions of multiple factors have been rare. Richer details about the interactions of people in environments (youths in group homes) that focus on important social structures that could be changed through administrative decisions or social policies have been called for by social workers, feminist and intersectionality theorists and researchers (Bowleg, 2012; de Smidt & Gorey 1997; Hulko, 2009; Leon et al., 2008; Lundahl, Yaffe, & Hobson, 2009; Videka-Sherman 1988). They are needed in this field as well. This dissertation cannot respond to all of these research strengthening calls. But it will to the most compelling ones from social work's perspective, posing questions about interactions involving key structures of the child welfare system, answering them with ample power and confidence.

Chapter 3

# Methods

## 3.1 Background, Cohort Establishment and Data Collection

The study used the Ontario Looking after Children (OnLAC) database. The OnLAC project was initiated in 2000 by Robert Flynn in the University of Ottawa's School of Psychology and his research team at the Centre for Research on Education and Community Services (Flynn et al., 2004). OnLAC is a longitudinal panel study of children, youth and young adults in the care of the Ontario child welfare system between birth and 21years of age. The project's objective was to develop and implement an annual province-wide, valid and practically useful, multidimensional assessment process to facilitate the best treatment of children and youth in care. Initially supported in part by grants from the Social Sciences and Humanities Research Council of Canada, it has since been supported by the following organizations: the Ontario Association of Children's Aid Societies, the Ontario Ministry of Community and Social Services, and the Ontario Ministry of Child and Youth Services.

Several institutional and scholarly steps have been taken to protect participants' privacy and, otherwise, ensure OnLAC's ethics as a clinical assessment and research tool. First, the Ontario Association of Children's Aid Societies engaged legal counsel to review OnLAC's interview procedures, measures and data management processes. They were found to be well within Ontario Human Rights Codes and satisfactorily conformed to anonymity and confidentiality rules **(**Flynn & Ghazal, 2001). Second, a unique and permanent provincial identification number is provided for each child upon system entry. It protects the identity of children and youths in related administrative processes or

research projects. Third, over its nearly 20-year life this database has been used often for secondary analytic research and has produced 25 dissertations, theses or peer-reviewed articles in professional or scientific journals of which I am aware. OnLAC research has, thus far, been cleared by 10 independent institutional or research ethics boards (REB) at community agencies or universities, including the University of Windsor.

Broad assessments across sociodemographic; familial and social; health and mental health, socioemotional development and academic; conduct and behavioural domains, ranging from prosocial to risky or antisocial were originally adapted from the Assessment Action Record (AAR) developed for child welfare use in the UK (Parker, Ward, Jackson, Aldgate, & Wedge, 1991; Ward, 1995). To facilitate use in Canada and to aid general Canadian population comparability most of the AAR's individual items and summary scales are exact replicates or close adaptations of those used in the National Longitudinal Survey of Children and Youth (NLSCY) or of the Ontario Child Health Study (OCHS; Byles, Byrne, Boyle, & Offord, 1988; Statistics Canada & Human Resources Development Canada, 1999). In 2006 all 53 of Ontario's Children's Aid Societies were mandated by the Ministry of Children and Youth Services to collect data for OnLAC using the AAR for all children less than 18 years of age. And based on 10 years of practice and research experience the second Canadian edition of the Assessment Action Record (AAR-C2), a more reliable, valid and practically useful version was launched in 2010 (Flynn, Miller, Desjardins, Ghazal, & Legault, 2010; Flynn, Vincent, & Miller, 2011). In group home contexts the AAR-C2 is administered annually to youths who are 10 years of age or older and to their foster parents and/or group home workers. It is administered by specially trained child welfare workers in one to four face-to-face

interviews that can be supplemented with telephone calls if needed (Flynn & Ghazal, 2001). Youths' interviews take, on average, one and a half hours, while the aggregate interview of all sources takes slightly less than three hours (Miller & Flynn, 2015).

### 3.2 3-Year Historical Cohort of Youths in Group Home Care, 2011-12 to 2014-15

To maximize comprehensiveness and validity this study's retrospective cohort baseline was established in 2011-12. You will note that a 2010-11 baseline was originally planned, but I later learned that that year was not geocoded so it could not be joined to the National Household Survey database, a critical element of this study's design. Gecoding of the OnLAC database began in 2011-12 so it was selected as the cohort's baseline. The baseline sample of 875 was a virtual provincial census of youths in group home care between the ages of 10 and 17 as that year's participation rate was 90.0% (Flynn et al., 2011; R. J. Flynn & M. Miller, personal communication, March 17, 2017).

The last year for which OnLAC data collection was completed and available was 2014-15. To maximize the accumulation of criterion end-points (e.g., antisocial behaviours) while maintaining enough power, the cohort was followed for three years until the end of 2014-15 (Table 3). I experimented and performed systematic replications for 1 and 2-year follow-up periods, but found 3-year follow-up to be better. Its seemingly modest sample of 182 youths who remained in group home care still provided adequate statistical power (see the proceeding power analysis section). Data collection and cleaning will be complete for year 2015-16 soon and could be used to construct a 4-year cohort, but it would not be adequately powered so I decided not to wait for its release. Finally, and perhaps not surprisingly as youths in group homes are a captive audience of sorts, nearly all of them (96.2%) were followed successfully for three years.

**Table 3 Longitudinal Follow-up Rates among the Initial Sample of 749 Fully Participating Respondents[a] at the Cohort's Baseline in 2011-2012**

| Follow-Up Year | Cohort Members Remaining in Care[b] | Cohort Members Assessed | Follow-up Rate (%) |
|---|---|---|---|
| 1 year, 2012-2013 | 430 | 390 | 90.7 |
| 2 year, 2013-2014 | 281 | 257 | 91.5 |
| 3 year, 2014-2015 | 182 | 175 | 96.2 |

[a] Youths with valid data on all analytic variables.
[b] Youths not discharged for any reason or transferred to independent living.

**Table 4 Placement of Group Home Cohort 875 Youths 3-Year Follow-up**

| Placement or Disposition | Sample Size | Valid Percent |
|---|---|---|
| Group home care | 182 | 20.8 |
| Aged out of group home[a] | 542 | 61.9 |
| Foster or kinship care | 72 | 8.2 |
| Independent living | 35 | 4.0 |
| Mental health residence or psychiatric facility | 18 | 2.1 |
| Detention centre | 10 | 1.1 |
| Birth family | 7 | 0.8 |
| Shelter | 2 | 0.2 |
| Unknown or unapproved | 7 | 0.8 |

[a] Most typically placed in independent living.

At 3-year follow-up the originally 10 to 17-year old sample was 13 to 20 years of age. Their placements or dispositions at that point are displayed in Table 4. Clearly, the vast majority of the original sample aged out of group homes (i.e., became 18 to 20) over the 3-year cohort's timeframe, and so was lost to this analysis. Nearly all of them were

probably transferred to independent living. Recalling that OnLAC collects data from a less than 10% sample of independent living youths, they were excluded from follow-up analyses. One may legitimately wonder about the large group of youths who seemed to have dropped out. In fact, they aged-out and were probably placed in independent living or transferred to other placements, most typically, foster or kinship homes. The OnLAC project simply does not follow most youths who age out or otherwise leave care. So those observed follow-up losses were not evidence of purposeful or selective attritions. They were simply no longer among OnLACs accessible population of youths 10 to 17 years of age in group home care. In fact, OnLAC processes lost very few (3.8%) of the youths actually eligible for 3-year follow-up.

### 3.3 Measures

The codebook of OnLAC measures potentially relevant to this study's outcomes, predictors and moderators are displayed in Appendix A (Tables A1 to A16), but also briefly discussed in this chapter. As central of these are connected to previous national and provincial measurement validations (NLSCY and OCHS) information about each measure's reliability and validity had been noted. When available, specific information about a measure's reliability and validity in the Ontario child welfare context was noted. Generally, common, hypothetically central, standardized multi-item measures have internal reliability coefficients in the good to excellent range (Cronbach $\alpha$s mostly between .80 and .90). Also, there seemed to be ample evidence of their construct validity (significantly associated as expected with theoretically relevant constructs). But the reliability or validity of certain single-item measures such as the frequency with which youths lost their temper or bullied another over the past year, were not knowable in a

psychometric sense. In those instances, *prima facie* or face validity was claimed. The appendix displays all of the potentially relevant study variables. The most hypothetically relevant and valid variables that were the central focus of this dissertation are presented below.

**Demographic/Background Information.** The AAR includes questions regarding youths' gender, age, and ethnicity, general health status, academic challenges and number of years youth has been staying in foster care and reasons for entry. Youth, males and females, aged 10-17 were also asked to complete sections concerning mental health services they access. Some of the demographic questions were responded to by the child welfare workers and others were rated by the youth. The gender variable was selected based on studies that have found different patterns of risk factors and developmental assets associated with gender of youth (Scales, 1999). Age as a variable is selected based on studies showing that age can be positively or negatively associated with antisocial behaviours (Dishion & Tipsord, 2011; Nantel-Vivier et al., 2009). The Emotional Symptom Scale, though not diagnostic, was used as a confound throughout the analysis. It is a subscale of the Strength and Difficulty Question (SDQ) Scale, a 5-item similarly scaled behaviour measure rated by foster parents. It has 3 possible response options – 0 (not true), 1(somewhat true) and 2 (true).

**Outcome variables.** Potential outcomes were antisocial or prosocial variables. As noted previously, antisocial behaviours would be emphasized to streamline the dissertation's text and to put the analytic focus on prevention. There were two scales for measuring antisocial behaviours: the Conduct Problems Scale and the Drug, Alcohol and Cigarette Use Scale. The Conduct Problems Scale has the most face and criterion validity

of the two and so was used as the study's central outcome measure. It is a subscale of the SDQ, rated by foster parents on a 5-item scale with three possible response options of 0 (not true), 1 (somewhat true), 2 (true). The conduct problem scale has a theoretical score range of 0 to 10 and its internal consistency has been demonstrated to be good to very good. Chronbach's αs ranged from .77 to .87 among children and youth in care in Ontario (Bell et al., 2013; 2015; Tessier et al., 2018). As for criterion/construct validity, it has been significantly associated with diagnoses of conduct disorders as well as with poor parenting practices and poor academic performance (Bell et al., 2015; Goodman et al., 2000; 2003; He et al., 2013; Tessier et al., 2018). Replications were performed with two of the Conduct Problem Scale's individual items: "often loses temper" and "fights with other youths or bullies them." These were prevalent and seemed the most face valid proxies of within group home interpersonal relationships.

Prosocial behaviours were measured using the following scales as well as six other individual items from the Developmental Assets Scale: the Prosocial Behaviour Scale, the Hope Scale, the Positive Mental Health Scale, the Academic Performance Scale, the Self-Esteem Scale and the Positive Coping Strategies Scale. The Prosocial Behaviour Scale, a subscale of the SDQ Scale and a 5-item similarly-scaled behavioural measure was the most and amply face and criterion validated (Table A3). It was rated by foster parents and has three possible response options of 0 (not true), 1 (somewhat true) and 2 (True) (Flynn et al., 2006). Analyses using the Prosocial Behaviour Scale largely mirrored Antisocial Behaviour Scale-based analyses. They will be considered systematic replicates and appendicized.

**Predictor variables**. This study's key predictors were the Negative Peer Influence Scale, rated by youth and the Positive Peer Influence Scale, rated by child welfare worker. The most negative peers smoke, drink, use illicit drugs, including marijuana and otherwise break the law. The most positive peers do not bully others, are sociable and likable, have a confidant and generally get along with other youths. Both of these clearly face valid 5-item measures are of more modest, but adequate reliability (Chronbach αs were .67 or 0.68; Bell et al., 2013; Flynn et al., 2004; 2006). Among this study sample its α was .73. Also, both have been used routinely in national and provincial surveys generally affirming their criterion/construct validities through their associations with other of this field's constructs in predicable ways. For example, the Negative and Positive Peer Influence Scales were observed to be, respectively, directly and inversely associated with aggression and delinquency among Canadian youths (Flynn et al., 2006; Latimer et al., 2003; Statistics Canada & Human Resources Development Canada, 1999).

**Moderator variables.** These were hypothesized moderators (or modifiers) of the effects of predictors. They were used in interaction terms (predictor by moderator).

***Group home resources.*** A recent research overview and meta-analysis, suggested the probably important moderating influence of group home size (Osei et al., 2016). This simple variable—number of group home residents—will be advanced as an elegant and face valid proxy for group home resourcefulness, therefore, this study's central measure of group home resourcefulness. The fewer the number of youths living in a group home the more resourceful it probably is in terms of its youth to foster parent/staff ratio and the consequent amount of time, personal or professional that may be spent with each youth

(Friman, Jones, Smith, Daly, & Larzelere, 1997). Estimates of under-resourced residences that are too large have ranged from seven to eight or more (Frensch, & Cameron, 2002; Gharabaghi et al., 2016). But these were made across diverse mental health, child welfare and juvenile justice contexts. None applied directly to group home foster care in Canada. This study will identify the group home size threshold with the empirically largest moderating effect, that is, that makes the biggest difference in the lives of youthful residents. Group home size identification has also been informed by extant research and by predictive validity of the selected size; categorized as small and large homes (Gharabaghi, 2016, 2009; Osei et al, 2016). Theoretical and empirical literature on group home occupancy is replete with inconsistencies. The size of group home occupancy in Ontario varies "from a low of six to a high of 10, but can at times be as low as four and as high as 12." The MCYS allows group home "occupancy to range from a low of 3 to a high of 20" in Ontario (Gharabaghi, 2016, p. 40).

***Neighbourhood resources.*** This study's key neighbourhood resource measure involved joining the OnLAC database with census data, to construct neighborhood-level measures of relative poverty or affluence. OnLAC records at the cohort's baseline (2011-12) were initially join-attempted with the 2011 Canadian census. Unfortunately, that was the year that Canada discontinued the census' long-form collection of detailed socioeconomic data. It was replaced with the National Household Survey that year (NHS, Statistics Canada, 2013). OnLAC began to be geocoded that year (residential postal codes included in the database) so specific census tracts where each youth's group home was located were identified. Census tract proxies for neighborhood-level measures of poverty or relative resourcefulness were then extracted from the NHS and joined with the OnLAC

database (census tract prevalence of "low-income" households and median household income). Neighbourhood prevalence of low-income or relatively poor households was by far the most predictively valid measure so it was the focus of this study. This analysis had two methodological limits. First, the non-mandatory NHS's response rate was slightly less than 70% (Statistics Canada, 2013). The potential for bias is clear as people with lower incomes are well known to have lower survey response rates. It ought to also be noted here though that any such bias is not likely to fatally confound these analyses. Because it is clear that any bias that does intrude will operate such that this study's estimates of neighbourhood poverty are most likely to be underestimates of the truth. Furthermore, only two-thirds (67.6%) of the OnLAC database was geocoded. Consequently, the neighbourhood resource-based analyses ought to be thought of as more limited and secondary to the group home resource-based analyses.

Statistics Canada's low-income criterion is market basket-based (Cotton, 2001; Osberg, 2000; Statistics Canada, 2007; 2017)). Households spending 20% more than the typical household in that area on food, shelter and clothing are defined as low-income or poor. There is a wealth of evidence of the validity of such neighborhood poverty measures in the USA. The most typically studied are neighbourhoods where 30% to 40% of households have incomes below the poverty line. Across definitions, 4 to 12 of every 100 US residents live in high poverty neighborhoods. Described as places of prevalent demographic vulnerability, they have high concentrations of young people without a high school diploma, people of colour, recent immigrants, the unemployed, part-time service workers and social assistance recipients (Jargowsky, 1997; Wilson, 2012). Poor neighbourhoods in the USA are additionally distressed for their lack of other types of

social and economic capital such as adequate health insurance (Gorey, 2009; Gorey et al., 2012; Kawachi, 1999). High poverty neighborhoods have been less validated in Canada, perhaps not surprisingly as they are less prevalent here (Chen, Myles, & Picot, 2012). Still, they do exist. In fact, 2 to 6 of every 100 Canadian live in extremely low-income neighborhoods where 20% to 30% or more of the people spend two-thirds or more of their incomes on life's necessities (Gorey, 1998; Statistics Canada, 2012b). Evidence on the predictive and construct validity of neighbourhood poverty measures in Canada have been developing coincident with institution of OnLAC. Quite like those in the USA, these vulnerable Canadian places are associated with an array of health problems, ranging from depression to cancer (Gorey et al., 1998; Hou & Chen, 2003; Lemstra et al., 2006; Mustard, Derksen, Berthelot, & Wolfson, 1999; Rehkopf & Buka, 2006).

Note:

Group home size and neighborhood income were not significantly associated with each other in this study. They were not hypothesized to interact with each other. A bivariate relationship test of group home size and neighborhood poverty did not find any relationship between the two. There was no significant overlap, hence poor neighborhoods have large and small group homes and so does affluent neighborhoods.

Also, the neighborhood-based low-income variable was constituted by only two clusters. Germinal literature concurs that multi-level models should not be estimated with data consisting of fewer than 10 clusters. There has been some debate about the exact criterion of too few, but sensitivity analyses have demonstrated that two is too few (Austin, 2010; Gorey et al., 2015; Snijder & Boskers, 2012).

### 3.4 Analytic Plan

**Cross-sectional analyses, 2011-12.** First, to guide external validity assessments and to aid analytic decision making all study variables, discrete (ranges, medians and categorical percentages) and continuous (ranges, means, standard deviations, and skewness and kurtosis along with their standard errors [*SE*]) were fully described. Second, to further aid analytic diagnoses and interpretations the bivariate relationships of all youths' descriptors (sociodemographic and health, including mental health) with predictors (including moderators) and outcomes were tested with standard nonparametric and parametric statistics depending upon their levels of measurement ($\chi^2$, *t*-test or Pearson's *r*). Any descriptor that was significantly associated with a predictor and with an outcome was identified as a potential confound and treated as such in further analyses. Third, hypotheses were tested with logistic regression models (Harrell, 2015; Hosmer, Lemeshow, & Sturdivant, 2013; Kleinbaum & Klein, 2010; Vittinghoff, Shiboski, Glidden, & McCulloch, 2012). Fourth, odds ratios (OR) and 95% confidence intervals (CIs), calculated from regression statistics ($\beta$ and *SE*s), estimated the statistical significance ($p < .05$) and the practical significance or strength of predictor-outcome variable relationships (OR = $e^{\beta}$ and 95% CI = $e^{\beta \pm 1.96\,(SE)}$). Fifth, significant interactions were practically described, that is, ORs were reported within key strata. The Statistical Package for the Social Sciences (SPSS) version 24 was used for all analyses (IBM Corporation, 2016).

Logistic regressions were preferred and used for the following reasons. First, many of the key criterion concepts, antisocial and prosocial, were discrete, binary behavioural and or diagnostic concepts (i.e., loses temper, bullies others, is antisocial and

or conduct disordered). Second, measures that were not, tended to have been computed from relatively few items, so outlying responses could be expected to have relatively large effects in linear, parametric models. They were recoded into the most clinical or policy meaningful dichotomous variables based on previous research and practice wisdom. Third, in this child welfare context, skewed socioeconomic, health and behavioural distributions were anticipated. Fourth and finally, these patterns have been clearly affirmed in the 20 or more OnLAC-based studies referenced previously (Vincent, Flynn, & Miller, 2016).

Full cross-sectional regression models for the prediction of both antisocial and prosocial behaviours were built with data collected in 2011-12. First, analytic confounds (sociodemographic and health characteristics) significantly associated with the outcome variable and a predictor or moderator variable were entered. Then predictors and moderators were entered as main effects, followed by predictor-moderator interactions. Working backwards from interactions to main effects and confounds, all non-statistically significant and practically insignificant variables were removed. Missing data that was generally modest did not significantly confound any regression analysis as missing data was found to be completely at random in each (MCAR $\chi^2$ tests; Little, 1988). All except two key study variables had less than 10% missing data, most within the 2% to 6% range. Prevalent missing data for the geocoded neighbourhood resources variable (one-third missing) has already been described. The other variable with fairly prevalent missing data was the Negative Peer Influence Scale (22.6% missing). This is perhaps not surprising though as youths here were essentially asked to "rat out" their peers, to report their illicit drug use and other illegal behaviors.

**Longitudinal analyses, 2011-12 to 2014-15.** Logistic regression modeling for the longitudinal (retrospective cohort) analyses was very similar to the cross-sectional (survey)-based analyses with two exceptions. First, behavioural criterion or outcome variables, antisocial and prosocial behaviours, were measured at 3-year follow-up. All of the other variables were still assessed at the cohort's baseline in 2011-12. Accounting for directionality, these longitudinal analyses modelled predictive associations with outcomes three years in the future. The second difference to be aware of was that the longitudinal analyses were of much smaller samples than the cross-sectional ones. In fact, the longitudinal samples were only one-fifth to one-quarter the size of the cross-sectional samples. But the longitudinal analyses were not necessarily less powerful as their observed effects (ORs) were consistently larger than the cross-sectional ones.

### 3.5 Power Analyses

Given certain available samples to answer this secondary study's central research questions, *post hoc* statistical power calculations were accomplished. Classic criteria were used with methodological updates for logistic regression analyses (Cohen, 1988; Demidenko, 2007; 2008; Fleiss, Levin, & Paik, 2003; Hsieh, Bloch, & Larsen, 1998). The actual calculations were assisted by G*Power software (Faul, Erdfelder, Buchner, & Lang, 2009; 2013; Faul, Erdfelder, Lang, & Buchner, 2007). Commensurate with the reporting of 95% CIs around OR point estimates, the statistical significance criterion was set at a 2-tailed $\alpha$ of 0.05. The *post hoc* aim then was for minimum analytic power of at least 0.80 or 80%. Such translates into very little chance of making a type I error (< 5%) and little chance of making a type II error (< 20%). In other words, such would provide

much confidence in "significant" and confidence in "non-significant" or null results. The outcomes of these power calculations are displayed in the far right column of Table 5.

**Table 5 Power Calculations for Exemplary[a] Logistic Regression Analyses**

| Design | Moderators and Predictors | Analytic Sample[b] | Effect to Detect Odds Ratio[c] | Power (%)[d] |
|---|---|---|---|---|
| Survey | Group home size<br>Positive peer influences | 750 | 1.50 | 97.9 |
| Survey | Group home size<br>Negative peer influences | 600 | 1.50 | 94.1 |
| Survey | Group home size<br>Negative & positive peer influences | 595 | 1.50 | 93.9 |
| 1-Year Cohort | Full model[e] | 280 | 2.50 | 92.9 |
| 2-Year Cohort | Full model[e] | 170 | 3.50 | 96.2 |
| 3-Year Cohort | Full model[e] | 105 | 5.00 | 95.5 |
| Survey | Neighbourhood poverty<br>Negative & positive peer influences | 355 | 2.00 | 81.4 |
| 3-Year Cohort | Full model[f] | 110 | 5.00 | 96.5 |
| 4-Year Cohort[g] | Full model[f] | 50 | 5.00 | 63.9 |

*Note*. Five predictors, this study's most typical logistic model, were applied in all calculations.
[a] Prediction of antisocial behaviours (Conduct Problem Scale).
[b] Youths with missing data on any variable were excluded.
[c] ORs are here all displayed as risk ratios (> 1.00). But preventive fractions (< 1.00) were similarly estimated (e.g., ORs of 5.00 and 0.20 represent equivalent effect sizes). [d] Power = 1 - β.
[e] Full model includes group home size, negative and positive peer influences and covariates.
[f] Full model includes neighbourhood poverty, negative and positive peer influences and covariates.
[g] This is a hypothetical power calculation.

Starting at the top of Table 5 one can see that the baseline survey-analyses involving group home size were all amply powered to detect rather modest effects (i.e., ORs of 1.50), their powers ranging from 93.9% to 97.9%, all much greater than the power goal of

80%. In fact, these power calculations were probably conservative as the estimated effect to detect was toward the low end of this field's typically observed effects at that time. Next, moving down the table, one notices that the related 1 to 3-year longitudinal analyses, despite having progressively smaller analytic samples, were still amply powered. This can be understood by the fact that these progressively longer cohorts had correspondingly larger typical effects to detect (respective ORs of 2.50, 3.50 and 5.00). Continuing down the table one can see that even the cross-sectional analyses involving neighbourhood poverty with substantially smaller samples due to missing residential postal codes used for geocoding, remained adequately powered (81.4%). Finally, in defense of the decision to limit follow-up analyses to three years, at the bottom one sees an estimate of hypothetical 4-year cohort analyses. For those power would have dropped to an unacceptable level (63.9%) so these were not accomplished.

### 3.6 Logistic Regression Modeling and Interpretations

Final methodological annotations concern more the art than the science of building mathematical models of human behaviour in diverse environments. There are any number of decisions to be made in the process and some of these may be discipline specific with, for the most part, no "golden rules" to follow in making them. In social work and allied fields of inquiry like women's and gender studies, for example, we are primarily concerned with the identification of groups of people, groups who may be oppressed or privileged, at relative risk or relatively protected. These analytic pursuits that ultimately involve categorical definitions of distinct, clinically interesting and or policy important groups are a much better fit with logistic, specifically binary regressions, than they are with linear ones. Intersectionality and feminist theorists also

remind us of the importance of advancing more complex understandings across our fields of practice. In the realm of quantitative inquiry that means that we always ought to at least consider entering theoretically and practically important interactions into such logistic models. But, many would argue that the analytic goal of advancing complex understandings needs to be balanced with the legitimate goal of parsimony. Finally, we are very much interested in the implications of our findings for real people, rather than for statistical constructions. Such has clear implications for our treatment of missing data. Principles of logistic model building that were followed in this study as well as their consequent interpretations follow.

1. Given modest amounts of missing data that was not confounding (missing completely at random) and sufficient analytic power despite this, missing data was deleted list wise, rather than imputed. Such analyses of those with complete data avoid confounding real people with statistical constructs. In other words, each unique analytic run/logistic regression was a complete case analysis, including only those study participants with valid data on all of its variables: confounds, predictors, moderators and outcome.

2. Logistic regression requires binary criterion, outcome or dependent variables. Continuous outcomes were recoded/dichotomized with the rare disease/outcome assumption in mind (Rothman, Greenland, & Lash, 2008). That is, the rarer the outcome, the closer will the OR estimate the relative risk (RR). Though there is no commonly accepted definition of "rare," a median break of such an outcome at the $50^{th}$ percentile, for example, would be the clear (most common) worst choice. After experimenting with various quantile recodes ranging from tertiles to quintiles and balancing this concern with

statistical power (having enough end-points in the consequent subsample), the key outcome, the Conduct Problem Scale, was recoded into tertiles or thirds and then dichotomized, comparing the upper third who scored high on the scale with the combined lower two-thirds who scored lower.

3. Predictor and moderator recodes were handled similarly except for those for which clinical wisdom or previous research guided specific recodes (e.g., group home size).

4. There were no continuous variables in any regression models so there were no concerns with linearity, including multicollinearity. For example, the two most "correlated" predictor or independent variables were negative and positive peer influences. Their inverse categorical relationship in the most central analysis was highly significant ($\chi^2$ [$df$ = 1, $N$ = 595] = 89.62, p < .001), but converting to another measure of association only suggested a modest relationship ($r = [\chi^2 / N]^{½}$ = - 0.39; Cooper, 2017). The corresponding coefficient of determination ($r^2$) was .15, meaning that only 15% of their variance was overlapping. Clearly, multicollinearity is a nonissue here.

5. As for order of entry, first separate, models explored the unadjusted associations of each predictor, moderator and any potential confounds with the outcome. Then a model was run in which all of these main effects were adjusted for each other. Then interactions were entered.

6. Significant 2 or 3-way interactions remained in their respective models. When any interaction term was not significant, it was removed from that model in the interest of parsimony.

7. Any significant interaction was depicted to better demonstrate its meaning. For example, if a significant negative peer influence by group home size interaction on

youths' antisocial behaviours was observed, the effect of negative peers would be reported within each group home strata, for example: larger homes (e.g., OR = 4.00) and smaller homes (e.g., OR = 2.00). This would clearly demonstrate that the risk associated with negative peers was much less in smaller homes.

8. The main predictive, moderating or confounding influences of gender were considered in all complex models. When none of these gender effects was significant it was removed from that model in the interest of parsimony.

9. ORs were keyed so that those greater than 1.00 indicated increased risks (relative risk) while those less than one indicated increased protections (preventive fractions).

10. Even under circumstances where ORs are not perfectly valid estimators of RRs, their relative sizes remain interpretable. That is, an OR of 5.00 indicates a much stronger association or much larger effect than an OR of 2.50.

11. "Odds" may be more clearly described as "chances." For example, an OR of 1.50 corresponding to the negative peer influence-antisocial behaviour hypothesis could be interpreted as follows: The odds or chances of youths who scored relatively high on the Negative Peer Influence Scale (NPIS) scoring high on the Conduct Problem Scale were 50% greater than youths who scored lower on the NPIS (increased risk). Alternatively, an OR of 0.50 corresponding to the positive peer influence-antisocial behaviour hypothesis would mean that the chances of youths who scored relatively high on the Positive Peer Influence Scale (PPIS) scoring high on the Conduct Problem Scale were 50% less than youths who scored lower on the PPIS (enhanced protection).

12. A 95% CI that does not include the null value of 1.00 indicated that the observed between-group difference was statistically significant ($p < 0.05$).

13. Effects that approached statistical significance ($p < .10$), that is, whose 90% CIs did not include the null value, were indicated.

14. I tested race variables (Black, White, Hispanic and Indigenous) and none was significant and so did not confound the analysis. After the main hypothesized variables entered the regression models, I tested the variables again and found that they were not independent predictors. Therefore, they did not enter any of the models. All races will be exposed to the same risks and protection.

**Systematic replications**

1. The potential confounding, main predicting and moderating (3-way interactions) effects of gender were explored.

[Similar explorations even of the largest racialized ethnic minority subsamples (African Canadian or Indigenous youths) were not feasible as they were grossly underpowered.]

2. After all of the hypotheses were tested on the Conduct Problem Scale they were systematically replicated on two of its single-item behavioural measures: "Often loses temper" and "fights with or bullies others."

3. After all of the hypotheses were tested on the Conduct Problem Scale exemplary systematic replications used the Prosocial Behaviour Scale outcome.

4. After all of the hypotheses were tested at cross-sectional baseline (2011-12) they were systematically replicated longitudinally (2011-12 to 2014-15).

# Chapter 4

## Results

The study hypotheses mentioned below were tested using logistic regression analysis. Findings support the hypotheses.

### 4.1 Methodologically Enriched Study Hypotheses

**Main effects or predictive associations**

1a. Positive peer influences (Positive Peer Influence Scale) protectively predict youths' antisocial behaviours (scored high on the Conduct Problem Scale).

1b. Negative peer influences (Negative Peer Influence Scale) predict increased risks of youths' antisocial behaviours (scored high on the Conduct Problem Scale).

**2-way interactions**

2a. Lesser resourced group homes ($\geq$ 8 youths) potentiate positive peer protections.

2b. Better resourced group homes (< 8 youths) buffer negative peer influence risks.

3a. Less resourceful neighbourhoods ($\geq$ 20% poor) potentiate positive peer protections.

3b. More resourceful neighborhoods (< 20% poor) buffer negative peer influence risks.

### 4.2 Description of the Sample at Baseline

In order to better understand this study's sample of youths their descriptive characteristics are presented. Background information about the participants included: demographic, health status, mental health and academic challenges, and placement experiences. Demographic characteristics of the 875 youths in Ontario group homes in 2011-12 are displayed in Table 6. By definition they ranged in age from 10 to 17, but most of them were between the ages of 13 and 17, most typically 15. Two-thirds of the sample was boys and non-Hispanic white youths. And respective African Canadian and

**Table 6 Demographic Characteristics of 875 Youths in Ontario Group Homes**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Age | | |
| 10 to 12 | 133 | 15.2 |
| 13 to 15 | 375 | 42.9 |
| 16 or 17 | 367 | 41.9 |
| *Mdn* = 15.00, *M* = 14.71, *SD* = 1.87, Skewness = - 0.74, *SE* = 0.67, Kurtosis = - 0.29, *SE* = 0.17 | | |
| Gender | | |
| Male | 577 | 65.9 |
| Female | 298 | 34.1 |
| Ethnicity[a] | | |
| Non-Hispanic white | 571 | 65.3 |
| African Canadian | 202 | 23.1 |
| Indigenous People[b] | 144 | 16.5 |
| Asian Canadian | 53 | 6.1 |
| Hispanic or Latina/o | 15 | 1.7 |
| Other | 55 | 6.3 |

[a] The sum of category percentages is greater than 100% as there can be multiple ethnicities.
[b] First Nations, Inuit or Métis People.

**Table 7 Youths' Self-Reported General Health Status**

| Health Status Categories | Sample Size | Valid Percent |
|---|---|---|
| Excellent | 246 | 31.1 |
| Very good | 312 | 39.4 |
| Good | 191 | 24.1 |
| Fair | 36 | 4.6 |
| Poor | 6 | 0.8 |
| Missing data | 84 | 9.6 |

Indigenous proportions of 23.1% and 16.5% seemed indicative of their gross overrepresentation. Nearly all described their physical health as good to excellent (Table 7), but many of them clearly had emotional or mental health challenges.

The Emotional Symptom Scale, though not diagnostic, provided insights into the prevalence of anxious and depressive symptoms among these youth from their caregivers' perspectives (Table 8). As for anxiety, about two-thirds of them had many and or frequent worries, and nervousness and fears were similarly prevalent. Also and not surprisingly given their typically traumatic histories as well as their current challenges, four of every 10 of them seem to have some depressive symptoms of unhappiness. Somatic symptoms also commonly occur concomitantly with anxiety and depression, and about a third of the sample also seemed to have these. The Emotional Symptom Scale has a theoretical score range of 0 to 10 and the most typical youths were reported to have three or four such symptoms of anxiety and or depression. Again, about a third of these youths scored in what seems a very concerning range of five to nine such symptoms. One hopes that they are receiving professional help and it seems that they are (see Table 9). More than half of these youths met with a psychiatrist during the past year, two-thirds or more with a psychologist and or other counselor. Similarly, two-thirds of them are taking psychotropic medication (Table 9). This seems the picture of a group of vulnerable youths at much greater risk of mental illness than the norm.

**Table 8 Emotional Symptom Scale: Item and Summary Scores**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Often complains of headaches, stomach aches or sickness | | |
| Not true | 522 | 62.5 |
| Somewhat true | 203 | 24.3 |
| True | 110 | 13.2 |
| Missing data | 40 | 4.6 |
| Many worries or often seems worried | | |
| Not true | 310 | 37.0 |
| Somewhat true | 365 | 43.6 |
| True | 162 | 19.4 |
| Missing data | 38 | 4.3 |
| Often unhappy, depressed or tearful | | |
| Not true | 481 | 57.1 |
| Somewhat true | 283 | 33.6 |
| True | 78 | 9.3 |
| Missing data | 33 | 3.8 |
| Nervous in new situations, easily loses confidence | | |
| Not true | 221 | 26.3 |
| Somewhat true | 353 | 42.0 |
| True | 266 | 31.7 |
| Missing data | 36 | 4.1 |
| Many fears, easily scared | | |
| Not true | 341 | 40.5 |
| Somewhat true | 403 | 42.8 |
| True | 99 | 11.7 |
| Missing data | 32 | 3.7 |
| Emotional Symptom Scale (0-10) | | |
| 0 to 2 | 266 | 32.4 |
| 3 to 4 | 298 | 36.2 |
| 5 to 9 | 258 | 31.5 |
| Missing data | 53 | 6.1 |

*Mdn* = 3.00, *M* = 3.63, *SD* = 2.02, Skewness = 0.42, *SE* = 0.08, Kurtosis = - 0.41, *SE* = 0.17

**Table 9 Youths' Mental Health Service Use during the Past Year**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Met with a Psychiatrist | 468 | 57.6 |
| Missing data | 62 | 7.1 |
| Met with a Psychologist or Counselor | 514 | 64.3 |
| Missing data | 75 | 8.6 |
| Met with another Mental Health Provider | 214 | 28.2 |
| Missing data | 116 | 13.3 |
| Received Psychotropic Medication Prescription | 573 | 66.6 |
| Missing data | 14 | 1.6 |

The vast majority of the youths (78.5%) had some form of learning difficulty (Table 10). In fact, eight of every 10 of them may have had a serious disability that could gravely affect their academic performance. These included attention deficit hyperactivity disorder, fetal alcohol spectrum disorders and other diverse learning disabilities. Most it seems were identified and had an Individual Education Plan (IEP). Perhaps most symptomatic of these academic challenges and a potential sentinel of other behavioural challenges was youths' absenteeism during the past year. More than a quarter of them missed school for a month or more (more than 20 school days). Another quarter of them recorded between one and three weeks absence from school over the past academic year. It is easy to imagine how such academic challenges could compound other challenges that these youths may have experienced. Other indicators of vulnerability among these youths are their placement histories (Table 11). First, their child welfare placements began because of prevalent neglect (46.5%) and abuse: emotional (31.1%), physical

(27.9) or sexual (10.4%). Also, about one of every five of them experienced family violence and or were abandoned by their parents. Consequently, it's of no surprise that nearly half of these youths were troubled with behavioural challenges (46.2%). Moreover, it can be seen in the top of Table 11 that many of these youths have been in care since they were very young children.

**Table 10 Youths' Academic Challenges**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Assessed for Attention Deficit Hyperactivity Disorder, Learning Disability, Unsatisfactory Progress or Fetal Alcohol Spectrum Disorder | | |
| Yes | 680 | 77.7 |
| No | 149 | 17.5 |
| On waitlist | 24 | 2.8 |
| Missing data | 22 | 2.5 |
| Has Individual Education Plan | | |
| Yes | 657 | 75.7 |
| No | 189 | 22.3 |
| Missing data | 29 | 3.3 |
| Has Learning Difficulty | | |
| Yes | 640 | 78.5 |
| No | 175 | 21.5 |
| Missing data | 60 | 6.9 |
| Number of Days Absent from School | | |
| More than 20 days | 237 | 27.9 |
| 11 to 20 days | 109 | 12.8 |
| 7 to 10 days | 124 | 14.6 |
| 4 to 6 days | 150 | 17.7 |
| 1 to 3 days | 180 | 21.2 |
| None | 35 | 4.1 |
| Not in school during the last 12 months | 14 | 1.6 |
| Missing data | 26 | 3.0 |

**Table 11 Youths' Placement Experiences**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Age First Placed in Out of Home Care | | |
| < 1 to 5 | 209 | 26.1 |
| 6 to 9 | 264 | 33.0 |
| 10 to 18 | 328 | 40.9 |
| Missing data | 74 | 8.5 |
| *Mdn* = 8.00, *M* = 8.49, *SD* = 4.16, Skewness = - 0.05, *SE* = 0.09, Kurtosis = - 1.04, *SE* = 0.17 | | |
| Number of Placement Changes | | |
| 0 to 2 | 81 | 10.1 |
| 3 to 5 | 271 | 33.7 |
| 6 to 9 | 267 | 33.2 |
| 10 or more | 185 | 23.0 |
| Missing data | 71 | 8.1 |
| *Mdn* = 6.00, *M* = 7.03, *SD* = 5.08, Skewness = 3.23, *SE* = 0.09, Kurtosis = 19.28, *SE* = 0.17 | | |
| Primary Reason(s) for Current Placement[a] | | |
| Neglect | 407 | 46.5 |
| Behavior challenges | 404 | 46.2 |
| Emotional abuse | 272 | 31.1 |
| Physical abuse | 244 | 27.9 |
| Abandoned | 189 | 21.6 |
| Domestic violence | 154 | 17.6 |
| Sexual abuse | 91 | 10.4 |
| Other reasons | 102 | 11.7 |
| Current Placement | | |
| Public group home | 160 | 18.3 |
| Private group home | 715 | 81.7 |
| Group Home Model | | |
| Parent model | 100 | 11.8 |
| Staff model | 738 | 87.2 |
| Other | 8 | .9 |
| Missing data | 29 | 3.3 |
| Classification of Workers under Staff Model Approach | | |
| A team of group home workers | 423 | 53.7 |
| Key group home worker | 307 | 39.0 |
| Not applicable | 58 | 7.4 |
| Missing data | 87 | 9.9 |

[a] The sum of category percentages is greater than 100% as there can be comorbid reasons for placement.

About a quarter of them were first placed at least five to 10 or more years ago when they were infants or very young children less than five years of age. Again very indicative of potential challenges because of a lack of continuity, the typical youth has already had six foster care placements, a quarter of them having had 10 or more. Currently, the vast majority of this study's participants live in private (81.7%), staff-run (87.2%) group homes. As for nuclear family support, seven of ten of the youths have such contact at least once a month (data not shown). The others seemed to have, for the most part, lost touch with their biological families of origin.

Next, key variables in the central analysis are described. Item and summary scores of the key antisocial outcome, the Conduct Problem Scale, are displayed in Table 12. It is comprised of behavioural items that are probably very symptomatic of interpersonal problems in the group home, in the neighbourhood and elsewhere. For example, the two most face valid proxies for interpersonal challenges seem to be if the youth is prone to losing his/her temper and that s/he tends to fight with or bully other youths. Foster parents or staff reported, astoundingly, that about three-quarters of their foster youths or residents were at least somewhat prone to losing their tempers (74.5%) and more than half tended to fight or bully (56.0%). Other behaviours, clearly early symptoms of delinquency or criminality were similarly prevalent: dishonesty (59.3%) and stealing (69.1%). The Conduct Problem Scale has a theoretical score range of 0 to 10 and the most typical youth scored four. Their range of scores was quite wide and evenly distributed. Such diversity ought to greatly empower these analyses. Other measures of antisocial and prosocial behaviours are displayed in Appendix B (Tables B1 to B9).

**Table 12 Conduct Problem Scale: Item and Summary Scores**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Often loses temper | | |
| True | 250 | 29.7 |
| Somewhat true | 378 | 44.8 |
| Not true | 215 | 25.5 |
| Missing data | 32 | 3.7 |
| Generally well behaved (reverse coded) | | |
| True | 300 | 35.6 |
| Somewhat true | 452 | 53.6 |
| Not true | 91 | 10.8 |
| Missing data | 32 | 3.7 |
| Often fights with other youth or bullies them | | |
| True | 138 | 16.4 |
| Somewhat true | 333 | 39.6 |
| Not true | 369 | 43.9 |
| Missing data | 35 | 4.0 |
| Often lies or cheats | | |
| True | 168 | 20.2 |
| Somewhat true | 325 | 39.1 |
| Not true | 338 | 40.7 |
| Missing data | 44 | 5.0 |
| Steals from home, school or elsewhere | | |
| True | 258 | 30.6 |
| Somewhat true | 324 | 38.5 |
| Not true | 260 | 30.9 |
| Missing data | 33 | 3.8 |
| Conduct Problem Scale (0-10) | | |
| 0 to 3 | 314 | 38.4 |
| 4 to 6 | 253 | 31.0 |
| 7 to 10 | 250 | 30.6 |
| Missing data | 58 | 6.6 |

*Mdn* = 4.00, *M* = 4.31, *SD* = 2.25, Skewness = 0.11, *SE* = 0.09, Kurtosis = -0.62, *SE* =0.17

**Table 13 Negative Peer Influence Scale—Item and Summary Scores**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Close friends who smoke cigarettes | | |
| All | 75 | 10.8 |
| Most | 197 | 28.3 |
| A few | 198 | 28.4 |
| None | 226 | 32.5 |
| Missing data | 179 | 20.5 |
| Close friends who drink alcohol | | |
| All | 58 | 8.4 |
| Most | 139 | 20.2 |
| A few | 209 | 30.3 |
| None | 283 | 58.9 |
| Missing data | 186 | 21.3 |
| Close friends who break the law (steal, hurt people or damage property) | | |
| All | 12 | 1.7 |
| Most | 50 | 7.2 |
| A few | 288 | 41.5 |
| None | 344 | 49.7 |
| Missing data | 181 | 20.7 |
| Close friends who have tried marijuana | | |
| All | 126 | 18.3 |
| Most | 152 | 22.0 |
| A few | 172 | 24.9 |
| None | 240 | 34.8 |
| Missing data | 185 | 21.1 |
| Close friends who used drugs other than marijuana | | |
| All | 28 | 4.1 |
| Most | 66 | 9.6 |
| A few | 222 | 32.5 |
| None | 368 | 53.8 |
| Missing data | 191 | 21.8 |
| Negative Peer Influence Scale (0-15) | | |
| 0 to 2 | 249 | 36.8 |
| 3 to 6 | 197 | 29.1 |
| 7 to 15 | 231 | 34.1 |
| Missing data | 198 | 22.6 |

*Mdn* = 11.00, *M* = 10.39, *SD* = 3.89, Skewness = -0.42, *SE* = 0.09, Kurtosis = -0.83, *SE* = 0.19

**Table 14 Positive Peer Influence Scale: Item and Summary Scores**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Would rather be alone (reverse coded) | | |
| True | 136 | 16.1 |
| Somewhat true | 305 | 36.1 |
| Not true | 404 | 47.8 |
| Missing data | 30 | 3.4 |
| Has at least one good friend | | |
| True | 433 | 51.5 |
| Somewhat true | 236 | 28.1 |
| Not true | 171 | 20.4 |
| Missing data | 35 | 4.0 |
| Picked on or bullied by others (reverse coded) | | |
| True | 84 | 10.0 |
| Somewhat true | 290 | 34.5 |
| Not true | 467 | 55.5 |
| Missing data | 34 | 3.9 |
| Gets along better with adults than with other youth (reverse coded) | | |
| True | 111 | 13.2 |
| Somewhat true | 255 | 30.2 |
| Not true | 478 | 56.6 |
| Missing data | 31 | 3.5 |
| Generally liked by other youth | | |
| True | 404 | 47.8 |
| Somewhat true | 362 | 42.8 |
| Not true | 79 | 9.3 |
| Missing data | 30 | 3.4 |
| Positive Peer Influence Scale (0-10) | | |
| 0 to 4 | 213 | 25.8 |
| 5 to 7 | 405 | 49.0 |
| 8 to 10 | 209 | 25.3 |
| Missing data | 48 | 5.5 |

*Mdn* = 3.00, *M* = 3.10, *SD* = 2.09, Skewness = 0.39, *SE* = 0.09, Kurtosis = -0.58, *SE* = 0.17

Measures of this study's two key predictors—Negative and Positive Peer Influence Scales—are displayed in the two preceding pages (Tables 13 and 14). As for negative peer influences, most or all of the peers of substantial proportions of the youths smoke, drink and have tried marijuana (approximately 30% to 40%). Even the more virulent behaviours such as using other illicit drugs and breaking the law applied to most or all of the peers of approximately 10% to 15% of the youths. Alternatively, it can be seen that participating youths also had many, quite positive peer confidants who were likeable, easy to get along with and were not bullies (approximately 45% to 90%). Again, the wide range of scores on both scales among these youths with seemingly very diverse peers bodes very well for analytic power.

**Table 15 Group Home Size: Number of Residents**

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Group Home Size | | |
| < 5 | 269 | 32.8 |
| 5 to 6 | 292 | 35.7 |
| 7 to 12 | 258 | 31.5 |
| Missing data | 56 | 6.4 |

*Mdn* = 5.00, *M* = 5.37, *SD* = 2.59, Skewness = 0.85, *SE* = 0.09, Kurtosis = 4.11, *SE* = 0.17

Hypothesized moderators are described next. The prevalence of various sized group homes are displayed in Table 15. About a third each of the group homes had less than five, five to six or seven or more residents. The homes were located at high, medium and low income neighbourhoods. It can be seen that many of the homes have more than the recommended numbers of six, seven, eight or more residences (approximately 50%, 30% and 15%). Their empirical effects of the most moderating will be reported. The

prevalence of low-income households in the neighbourhoods where group homes are placed is displayed in Table 16. About a third of the neighbourhoods could be fairly described as poor, with fairly high concentrations of low-income households (15% to 55%, typically 20%). Its moderating effect was tested. Other measures of group home and neighbourhood resources are displayed in Appendix C (Tables C1 to C7).

**Table 16 Prevalence of Low-Income Households in Neighbourhoods**

| Neighbourhood Income | Prevalence (%) of Low-Income Households Range | Median | Median Household Income |
|---|---|---|---|
| High (*n* = 154, 30.4%) | 0.0 to 9.9 | 8.0 | $82,655 |
| Middle (*n* = 172, 34.0%) | 10.0 to 14.9 | 12.0 | $62,545 |
| Low (*n* = 180, 35.6%) | 15.0 to 55.0 | 20.0 | $49,965 |

*Note*. Census tract-based and derived from the National Household Survey (*N* = 506).

### 4.3 Key Cross-Sectional Findings

**Analyses related to group home resources.** The series of logistic regressions of positive and negative peer influences, group home size and gender on the antisocial behavior of scored high on the Conduct Problem Scale are displayed in Table 17 (pp. 88-89). About a third (30.6) of the sample scored so high on conduct problems. These modeled 594 youths, 10 to 17 years of age in group home care in Ontario in 2011-12. Consistent, but preliminary models of positive or negative peer influences alone are displayed in Appendix D (Tables D1 and D2).

Moving from the top to bottom of the table, first the independent adjusted, main predictive effects of positive and negative peer influences were observed. As hypothesized, they were respectively protective and risk factors. For example, comparing

**Table 17 Logistic Regressions of Positive and Negative Peer Influences, Group Home Size and Gender on the Antisocial Behavior of Scored High on the Conduct Problem Scale (30.6%)[a] among 594 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.7 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.3 | **.456*** | .216 | **1.58** | 1.03, 2.41 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 24.6 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.8 | **- 1.409*** | .222 | **0.24** | 0.16, 0.38 |
| High (8 to 10) | 26.6 | **- 2.994*** | .378 | **0.05** | 0.02, 0.11 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.9 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.1 | .052 | .256 | 1.05 | 0.64, 1.74 |
| High (7 to 15) | 34.0 | **.500*** | .245 | **1.65** | 1.02, 2.66 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.8 | | | 1.00[b] | . . . |
| Less than 8 | 86.2 | .243 | .300 | 1.28 | 0.71, 2.30 |
| Gender | | | | | |
| Female | 33.5 | | | 1.00[b] | . . . |
| Male | 66.5 | - .006 | .224 | 0.99 | 0.64, 1.54 |
| **Model 2** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | **- 1.065*** | .146 | | |

**Models 3 and 4**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home (*N* = 512) | | | | 8 or more Youths in Home (*N* = 82) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 24.4 | 1.00[b] | . . . | Low (0 to 4) | 25.6 | 1.00 | . . . |
| Mid (5 to 7) | 48.4 | **0.26** | 0.16, 0.41 | Mid (5 to 7) | 51.2 | **0.15** | 0.04, 0.53 |
| High (8 to 10) | 27.1 | **0.05** | 0.02, 0.12 | High (8 to 10) | 23.2 | **0.03** | 0.00, 0.31 |

**Model 5**

***Positive Peer Influence by Group Home Size by Gender Interaction***

**-.713*** .152

**Models 6 and 7: Boys**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 343) | | | | 8 or more Youths in Home ($N$ = 52) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 22.7 | 1.00[b] | . . . | Low (0 to 4) | 21.2 | 1.00[b] | . . . |
| Mid (5 to 7) | 48.7 | **0.23** | 0.13, 0.42 | Mid (5 to 7) | 53.8 | **0.14** | 0.02, 0.88 |
| High (8 to 10) | 28.6 | **0.06** | 0.02, 0.15 | High (8 to 10) | 25.0 | **0.04** | 0.00, 0.59 |

**Models 8 and 9: Girls**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 169) | | | | 8 or more Youths in Home ($N$ = 30) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 27.8 | 1.00[b] | . . . | Low (0 to 4) | 33.3 | 1.00[b] | . . . |
| Mid (5 to 7) | 47.9 | **0.32** | 0.15, 0.71 | Mid (5 to 7) | 46.7 | **0.13**[c] | 0.02, 1.13 |
| High (8 to 10) | 24.3 | **0.04** | 0.01, 0.19 | High (8 to 10) | 20.0 | Unstable model | |

**Models 10 and 11: Girls**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 169) | | | | 8 or more Youths in Home ($N$ = 30) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 44.4 | 1.00[b] | . . . | Low (0 to 5) | 40.0 | 1.00[b] | . . . |
| High (6 to 10) | 55.6 | **0.20** | 0.09, 0.43 | High (6 to 10) | 60.0 | **0.07** | 0.01, 0.61 |

*Notes*. All models were adjusted for the confounding influence emotional symptoms. Positive peer influence was adjusted for negative per influence and vice versa in each model. Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random.
[a] Scored in the upper tertile on the Conduct Problem Scale (CPS). [b] Baseline comparison group.
[c] Approached statistical significance ($p < .10$). [*] Statistically significant regression coefficient ($p < .05$).

the highest scoring third on positive peer influences with the lowest scoring third, the baseline, a near perfect, precise and significant preventive fraction was observed (OR = 0.05, 95% CI 0.02, 0.11). This means that the chances of having engaged in antisocial behaviours among youths influenced by highly positive peers was extraordinarily reduced, perhaps by as much as 95% compared to youths with the least positively influential peers. On the other hand, comparing the highest scoring third on negative peer influences with its lowest scoring third or baseline, a significant and substantially increased risk was estimated (OR = 1.65, 95% CI 1.02, 2.66). This means

that the chances or risk of engaging in antisocial behaviours among youths with highly negative peers was observed to be much larger than that observed among youths with the least negatively influential peers. Their antisocial relative risk probably increased by more than 50%, perhaps by as much as 65%. One ought to note two more points about the main, adjusted predictors. First, the main effects of group home size and gender were not significant, their CIs including the null value of 1.00. Second, youths' emotional symptoms (i.e., scored relatively high on the Emotional Symptom Scale) were significantly associated with their antisocial behaviours (OR = 1.58, 95% CI 1.03, 2.41). Perhaps of no surprise, emotional symptoms were observed to be significantly associated with most of this study's variables, independent/predictors and dependent/outcomes. Consequently, it was treated as a confound and included/adjusted in nearly all analyses.

Moving down the table it can be seen that a significant positive peer influence by group home size interaction was found ($\beta$ = -1.056, *SE* = .146, $p < .05$ [ORs associated with interaction effects are not practically interpretable so they were not displayed throughout these analyses]). That is, the predictive effect of positive peer influence was significantly moderated by the size of group homes. The most predictive criterion break of what may be considered small versus large group homes was less than eight versus eight or more youths per group home. Its moderating effect is depicted in the next regressions, models 3 and 4. These respective models were run within separate group home strata: < 8 and 8 or more youths per home. It was observed that the incremental protective influences of increasingly positive peers was significantly larger (recall that in such instances smaller ORs indicate greater protections) in larger group homes (significant ORs of 0.15 and 0.03) than in smaller ones (significant ORs of 0.26 and

0.05). This strongly suggests that the protective influence of positive peers is greatest precisely where it is needed the most or can have the most beneficial impact, that is, in the relatively risky environments of large, probably inadequately resourced, group homes. A significant negative peer influence-group home size interaction was not found.

Moving further down the table it can be seen that a significant positive peer influence by group home size by gender interaction was found ($\beta$ = - .713, *SE* = .152, $p < .05$). This 3-way interaction essentially means that the, previously observed, 2-way interaction of positive peer influence and group home size is moderated by gender. The remainder of the table depicts specific peer influence and group home size strata separately for boys and girls to aid understanding of this complex interaction's meaning. One of the strata—girls in larger homes—was too small ($n$ = 30) so positive peer influence thirds were recoded/dichotomized in the interest of regression model stability. The remaining models, 6 to 11, some quite exploratory, essentially suggest that the greater protective influence of positive peers in larger group homes applies especially to boys as their preventive fractions were the lowest across the range of peer influences, middle (OR = 0.14) to high (OR = 0.04). A significant negative peer influence-group home size-gender interaction was not found.

**Systematic replications.** The series of preliminary and full logistic regressions of positive and negative peer influences, group home size and gender on the two individual-item, antisocial behavioral measures (often losing temper and fighting with or bullying others) near exactly replicated the pattern already described. They are displayed in Appendix E (Tables E1 to E6). Full models of these single behavioral outcomes, however, also observed significant negative peer influence by group home size

interactions such that negative per influences were much riskier in larger homes. Youths with relatively negative peers seemed to much more prevalently lose their tempers (ORs of 4.85 vs. 1.83) and fight with or bully others (ORs 6.20 vs. 1.84) in larger versus smaller group homes. Such observed effects of negative peers in large homes (ORs in the neighbourhood of 5.00 to 6.00 or larger) may be fairly characterized as huge. A full logistic regression of positive and negative peer influences, group home size and gender on youths' prosocial behaviours (i.e., Prosocial Behaviour Scale), as expected, largely also systematically replicated, but mirrored the Antisocial Behaviour Scale-based findings (Appendix F, Tables F1). In this instance there was again a significant peer influence by group home size interaction ($\beta = .719$, $SE = .123$, $p < .05$), but its moderating effect was such that positive peers significantly, directly and substantially influenced youths' prosocial behaviours in smaller homes (incremental ORs of 2.00 and 4.49), but not at all in larger homes. Again, a significant 3-way interaction that included gender was observed ($\beta = .236$, $SE = .115$, $p < .05$) But this time its effect was such that greater positive peer influences in smaller homes were greater for girls (OR = 6.60) than boys (OR = 4.01).

**Exploratory analyses related to neighbourhood resources.** The series of logistic regressions of positive and negative peer influences, neighbourhood poverty and gender on the antisocial behavior of scored high on the Conduct Problem Scale are displayed in Table 18 (pp. 95-96). These modeled fewer youths ($n = 353$) 10 to 17 years of age in group home care in Ontario in 2011-12. As with the group home analyses there was a main protective effect of positive peers, however, it did not significantly interact with neighbourhood income. As hypothesized though, a significant negative peer

**Table 18 Logistic Regressions of Positive and Negative Peer Influences and Neighbourhood Poverty on the Antisocial Behavior of Scored High on the Conduct Problem Scale (30.6%)[a] among 353 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | SEβ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.1 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.9 | **.913*** | .157 | **2.49** | 1.83, 3,39 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.6 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.3 | **- 1.668*** | .182 | **0.23** | 0.16, 0.33 |
| High (8 to 10) | 25.1 | **- 2.900*** | .297 | **0.06** | 0.03, 0.10 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.6 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 28.6 | .005 | .225 | 1.01 | 0.65, 1.56 |
| High (7 to 15) | 34.8 | **.448*** | .205 | **1.57** | 1.05, 2.34 |
| Low-Income Neighbourhood (20% or more poor) | | | | | |
| Yes | 16.9 | | | 1.00[b] | . . . |
| No | 83.1 | - .269 | .256 | 0.76 | 0.46, 1.26 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 57.5 | | | 1.00[b] | . . . |
| High (4 to 10) | 42.5 | .380 | .266 | 1.46 | 0.87, 2.46 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 23.2 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 51.8 | **- 1.616*** | .297 | **0.20** | 0.11, 0.36 |
| High (8 to 10) | 24.9 | **- 2.746*** | .441 | **0.06** | 0.03, 0.15 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 46.5 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 26.9 | .473 | .311 | 1.61 | 0.87, 2.95 |
| High (7 to 15) | 26.6 | .512 | .319 | 1.67 | 0.89, 3.12 |
| Low-Income Neighbourhood (20% or more poor) | | | | | |
| Yes | 17.3 | | | 1.00[b] | . . . |
| No | 82.7 | - .520 | .333 | 0.60 | 0.31, 1.14 |
| **Model 3** | | | | | |
| ***Negative Peer Influence by Low-Income Neighbourhood Interaction*** | | | | | |
| | | **.499*** | .231 | | |

**Models 4 and 5**

***Negative Peer Influence within Neighbourhood Strata***

| Not Low-Income Neighbourhood (*N* = 292) | | | | Low-Income Neighbourhood (*N* = 61) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 4) | 48.6 | 1.00[b] | . . . | Low (0 to 2) | 36.1 | 1.00[b] | . . . |
| Mid (3 to 6) | 26.7 | 1.47 | 0.75, 2.87 | Mid (3 to 6) | 27.9 | 2.88 | 0.61, 13.74 |
| High (7 to 15) | 24.7 | 1.51 | 0.75, 3.05 | High (7 to 15) | 36.1 | 2.33 | 0.55, 9.91 |

**Models 4 and 5**

***Negative Peer Influence Recode within Neighbourhood Strata***

| Not Low-Income Neighbourhood (*N* = 292) | | | | Low-Income Neighbourhood (*N* = 61) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 48.6 | 1.00[b] | . . . | Low (0 to 2) | 36.1 | 1.00[b] | . . . |
| High (3 to 15) | 51.4 | 1.33 | 0.76, 2.33 | High (3 to 15) | 63.9 | **3.07**[c] | 0.80, 11.83 |

*Notes*. All models except 1a to 1d were adjusted for the confounding influence emotional symptoms. Positive peer influence was adjusted for negative per influence and vice versa in each model. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).
[a] Scored in the upper tertile on the Conduct Problem Scale (CPS). [b] Baseline comparison group.
[c] Approached statistical significance ($p < .10$). * Statistically significant regression coefficient ($p < .05$).

influence by low-income neighbourhood interaction was found ($\beta = .499$, $SE = .231$, $p < .05$). As hypothesized, it seemed indicative of a multiplicative antisocial behavioural risk among youths with very negative peers who live in group homes in relatively poor neighbourhoods (OR = 3.07).

### 4.4 Description of the Sample at 3-Year Follow-Up

There were 175 participating respondents at follow up. Some of their descriptive characteristics are listed in the right side of Table 19. Only their descriptors that differed significantly from the baseline's are displayed. All of the others were similar between baseline and follow-up. Clearly, the follow-up sample was older. And in addition to being more prevalently boys, they were more prevalently non-Hispanic white and of excellent health. Finally, categorically they could be fairly described as much less influenced by negative peers and much less likely to have conduct problems or to engage in antisocial

behaviours. Aggregated processes of aging out, primarily to independent living and transfers to other foster care placements or mental health or criminal justice systems, seemed to have left the cohort generally less troubled at follow-up.

**Table 19 Descriptive Differences between Youths at Baseline (N = 875) and Follow-Up (N = 175)**

| Variable | 2011-2012 | | 2014-2015 | |
|---|---|---|---|---|
| Categories | Sample | % | Sample | % |
| Age | | | | |
| 10 to 12 | 133 | 15.2 | 0 | 0.0 |
| 13 to 15 | 375 | 42.9 | 66 | 37.7 |
| 16 to 17 | 367 | 41.9 | 109 | 62.3 |
| Gender | | | | |
| Male | 577 | 65.9 | 136 | 77.7 |
| Female | 298 | 34.1 | 39 | 22.3 |
| Ethnicity | | | | |
| Non-Hispanic white | 571 | 65.3 | 138 | 78.9 |
| African Canadian | 202 | 23.1 | 25 | 14.1 |
| Indigenous People | 144 | 16.5 | 29 | 16.6 |
| Asian Canadian | 53 | 6.1 | 13 | 7.4 |
| Hispanic or Latina/o | 15 | 1.7 | 3 | 1.7 |
| Other | 55 | 6.3 | 5 | 2.9 |
| General Health Status | | | | |
| Excellent | 246 | 31.1 | 63 | 40.1 |
| Very good | 312 | 39.4 | 64 | 40.8 |
| Good | 191 | 24.1 | 23 | 14.6 |
| Fair or poor | 42 | 5.4 | 7 | 4.5 |
| Negative Peer Influence Scale | | | | |
| 0 to 2 | 249 | 36.8 | 80 | 70.8 |
| 3 to 6 | 197 | 29.1 | 20 | 17.7 |
| 7 to 15 | 231 | 34.1 | 13 | 11.5 |
| Conduct Problem Scale | | | | |
| 0 to 3 | 314 | 38.4 | 86 | 49.1 |
| 4 to 6 | 253 | 31.0 | 67 | 38.3 |
| 7 to 10 | 250 | 30.6 | 22 | 12.6 |

*Note*. All categorical difference between baseline and the 3-year follow-up were significant ($\chi^2$, $p < .05$).

**Table 20 Logistic Regressions of Positive and Negative Peer Influences, Group Home Size and Gender on the Antisocial Behavior of Scored High on the Conduct Scale at 3-Year Follow-Up (24.6%)[a] among 104 Youths 13 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 28.3 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 47.6 | **- .994*** | .402 | **0.37** | 0.17, 0.82 |
| High (8 to 10) | 24.1 | **- 1.646*** | .562 | **0.19** | 0.06, 0.58 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 17.7 | **1.735*** | .546 | **5.67** | 1.94, 16.52 |
| High (7 to 15) | 11.5 | 1.**265*** | .650 | **3.54** | 0.99, 12.67 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.5 | | | 1.00[b] | . . . |
| Less than 8 | 86.5 | .884 | .649 | 2.42 | 0.68, 8.64 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 21.2 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.0 | -.819 | .578 | 0.44 | 0.14, 1.37 |
| High (8 to 10) | 29.8 | **-1.823*** | .741 | **0.16** | 0.04, 0.70 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.2 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 18.3 | **1.686*** | .588 | **5.40** | 1.66, 17.09 |
| High (7 to 15) | 11.5 | **1.589*** | .732 | **4.90** | 1.17, 20.56 |
| Number of youths residing in group home | | | | | |
| 8 or more | 11.5 | | | 1.00[b] | . . . |
| Less than 8 | 88.5 | .884 | .889 | 2.42 | 0.42, 13.82 |
| **Model 3** | | | | | |
| ***Negative Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **.917*** | .334 | | |

**Models 4 and 5**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home (*N* = 92) | | | | 8 or more Youths in Home (*N* = 12) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 70.7 | 1.00[b] | . . . | Low (0 to 2) | 66.7 | 1.00[b] | . . . |
| Mid (3 to 6) | 17.4 | **5.25** | 1.54, 17.87 | Mid (3 to 6) | 25.0 | Unstable | |
| High (7 to 15) | 12.0 | 3.31 | 0.74, 14.76 | High (7 to 15) | 8.3 | Model | |

**Models 6 and 7**

***Negative Peer Influence (Recode) within Group Home Strata (Recode)***

| Less than 7 Youths in Home (*N* = 75) | | | | 7 or more Youths in Home (*N* = 29) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 70.7 | 1.00[b] | . . . | Low (0 to 2) | 69.0 | 1.00[b] | . . . |
| High (3 to 15) | 29.3 | **4.55** | 1.35, 15.28 | High (3 to 15) | 31.0 | **5.26**[c] | 0.88, 31.59 |

*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1c. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).
[a] Scored in the upper tertile on the Conduct Problem Scale (CPS). [b] Baseline comparison group.
[c] Approached statistical significance ($p < .10$). [*] Statistically significant regression coefficient ($p < .05$).

### 4.5 Key Longitudinal Findings

**Analyses related to group home resources.** The series of logistic regressions of positive and negative peer influences, group home size and gender on the antisocial behavior of scored high on the Conduct Problem Scale are displayed in Table 20 (pp. 114-115). These modeled 104 youths, 13 to 17 years of age in group home care in Ontario over three years, between 2011-12 and 2014-15. Preliminary models 1 and 2-year follow-up periods are displayed in Appendix G (Tables G1 and G2). The main predictive effects of positive and negative peer influences seemed, respectively, similarly protective and risky as those observed in the cross-sectional analyses, increasing confidence in these relationships. Somewhat different from the baseline analysis, however, a negative peer influence by group home size interaction was found such that the estimated relative risk

seemed greater in larger group homes (OR = 5.26) than in smaller ones (OR = 4.55). It should be noted that for this analysis the large group home criterion was changed to '7 or more' in the interest of regression model stability. An intriguing pattern emerged over 1 to 3-year follow-ups. At 1-year follow-up a significant positive peer influence by group home size interaction, essentially identical to the one found at baseline, was found. At 2-year follow-up both 2-way interactions of positive and negative peer influences with group home size were observed. But then, as reported above, only the negative peer-group home interaction remained significant at 3-year follow-up. Recall that important characteristics of the youths changed over those three years, as probably also did their peers. Such probably affected their influences on each other over the three years. Finally, another observed trend seemed provocative. The antisocial behavioral risk associated with the adjusted main predictive effect of negative peers seemed to increase monotonically over time. Respective negative peer-youth antisocial behavior ORs were as follows: baseline (OR = 1.65), 1-year (OR = 2.15), 2-year (OR = 2.39) and 3-year (OR = 4.90).

**Systematic replications.** The series of regressions of positive and negative peer influences, group home size and gender on the two individual-item, antisocial behavioral measures (often losing temper and fighting with or bullying others) are displayed in Appendix H (Tables H1 to H6). Again here, though not monotonic, negative peer-youth antisocial behavior (often loses temper) ORs were as follows: baseline (OR = 1.92) and 3-year follow-up (OR = 4.83). Furthermore, the negative peer influence by group home size interaction was replicated at 2 and 3-year follow-up. Tentative because of small strata subsamples, at 3-years such influences seemed to greatly increase risks in all

homes, but especially in larger ones (ORs of 4.15 and 7.26). The models of fighting with or bullying others were all but uninterpretable for the very small subsample and resultant regression instabilities. Such seems consistent with the descriptive finding that the sample at 3-year follow-up was much less troubled than the baseline sample. It seemed that fighting and bulling were probably much less likely among the youths at follow-up.

**Table 21 Logistic Regressions of Positive and Negative Peer Influences and Neighbourhood Poverty on the Antisocial Behavior of Scored High on the Conduct Problem Scale at 3-Year Follow-Up (24.6%)[a] among 108 Youths 13 to 17 Years of Age in Group Home Care in Ontario**

| | | Regression Statistics | | | |
|---|---|---|---|---|---|
| Predictors | Prevalence (%) | β | SEβ | Odds Ratio | 95% CI |
| **Model 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 28.3 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 47.6 | **- .994*** | .402 | **0.37** | 0.17, 0.82 |
| High (8 to 10) | 24.1 | **- 1.646*** | .562 | **0.19** | 0.06, 0.58 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 17.7 | **1.735*** | .546 | **5.67** | 1.94, 16.52 |
| High (7 to 15) | 11.5 | **1.265** | .650 | **3.54[c]** | 0.99, 12.67 |
| Low Income Neighbourhood (20% or more poor) | | | | | |
| Yes | 14.5 | | | 1.00[b] | . . . |
| No | 85.5 | .054 | .505 | 1.06 | 0.39, 2.84 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 21.3 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.0 | - .883 | .566 | 0.41 | 0.14, 1.25 |
| High (8 to 10) | 28.7 | **- 1.764*** | .748 | **0.17** | 0.04, 0.74 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.4 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 18.5 | **1.582*** | .567 | **4.86** | 1.60, 14.79 |
| High (7 to 15) | 11.1 | **1.653*** | .728 | **5.22** | 1.26, 21.75 |
| Low Income Neighbourhood (20% or more poor) | | | | | |
| Yes | 14.8 | | | 1.00[b] | . . . |
| No | 85.2 | - .016 | .681 | 0.98 | 0.26, 3.74 |

**Model 3**

***Negative Peer Influence Recode by Low-Income Neighbourhood Interaction***

1.**986**[*] 1.016

**Models 4 and 5**

***Negative Peer Influence Recode within Neighbourhood Strata***

| Not Low-Income Neighbourhood (*N* = 92) | | | | Low-Income Neighbourhood (*N* = 16) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 70.7 | 1.00[b] | . . . | Low (0 to 2) | 68.8 | 1.00[b] | . . . |
| High (3 to 15) | 29.3 | **3.88** | 1.40, 10.78 | High (3 to 15) | 31.2 | **15.00**[cd] | 0.98, 228.90 |

*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model unless noted otherwise. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. Missing data were completely at random (Little's MCAR $\chi^2$ test not significant). [a] Scored in the upper tertile on the Conduct Problem Scale (CPS). [b] Baseline comparison group. [c] Approached statistical significance ($p < .10$). [d] Positive peer influence was removed from the model for lack of statistical power. [*] Statistically significant regression coefficient ($p < .05$).

**Exploratory analyses related to neighbourhood resources.** The series of logistic regressions of positive and negative peer influences, neighbourhood poverty and gender on the antisocial behavior of scored high on the Conduct Problem Scale are displayed in Table 21 (pp. 117-118). These modeled fewer youths (*n* = 108) 13 to 17 years of age in group home care in Ontario in between 2011-12 and 2014-15. Two findings stand out. The main predictive effect of negative peer influences seemed much larger than at baseline (OR = 5.22). And again, the significant negative peer influence by low-income neighbourhood interaction seemed as if it may be profound. As hypothesized, negative peers seemed detrimentally influential in all neighbourhoods, but especially so in low-income or poor neighbourhoods (OR = 15.00, approached significance, $p < .10$).

# Chapter 5

## Discussion

Youths in foster care are a vulnerable population at risk of experiencing diverse challenges, ranging from academic to socio-emotional and behavioural. Those in group home care can be at great risk of developing mental health and behavioural problems, sometimes severe, due to their experiences of childhood traumas, multiple placements and negative peer influences. When not treated adequately such can develop into long-term challenges with harmful consequences for them and society. Peer influences can also be quite positive and protective. The relative positive or negative influences of peers on youths' prosocial to antisocial behaviours were well-known in residential treatment contexts in the USA, much less so in such Canadian contexts; and until this study, not at all in group homes in Canada. A recent overview of systematic reviews suggested that smaller, better resourced group homes may be relatively protective (Osei et al., 2016). And much interdisciplinary research strongly suggested that additional protections could be gained by placing group homes in more resourceful or affluent neighbourhoods. This mixed-methods study—survey and retrospective cohort—of the experiences of 875 youths in group home care in Ontario between 2011-12 and 2014-15 responded. It aimed to advance knowledge specifically related to their protection and ultimately, to the prevention of antisocial problems among them.

The Ontario Looking after Children database was creatively joined to the 2011 National Household Survey. In addition to other noted strengths—a statistically powerful baseline sample and use of well-known and validated measures—its survey baseline participation rate was 90.0% and its 3-year cohort follow-up rate was 96.2%. Also, logistic regressions allowed for relatively controlled comparisons of key study groups.

Central cross-sectional findings were first; very negatively influential peers significantly increased the risk of youths' antisocial behaviours or conduct problems (OR = 1.65). However, very positively influential peers were extraordinarily protective (OR = 0.05). Second, a significant positive peer influence by group home size interaction revealed larger such protections in larger homes with eight or more residents. An augmenting analysis found another positive peer-group home interaction highly predictive of prosocial behaviors among youths in smaller homes (OR = 4.49), but not in larger homes. Third, a negative peer influence-neighbourhood poverty interaction found that very negative peers greatly increased the risk of youths' antisocial behaviours (OR = 3.07) in relatively poor neighbourhoods where 20% or more of the households had incomes below Statistics Canada's low-income criterion, but not in more affluent ones. Longitudinally, smaller group homes (ORs of 4.55 vs. 5.26) and more affluent neighbourhoods (ORs of 3.88 vs 15.00) significantly diminished risks of youths' antisocial behaviours or conduct problems associated with having very negatively influential peers. In aggregate, study findings could be colloquially summarized as follows: Having *positively influential peers*, and residing in *relatively small, better resourced group homes* that were placed in *more affluent neighbourhoods* all seemed to matter very much in the care of these at risk youths. They all seemed substantially protective.

The great potential significance of these findings, not just scholarly, but practical—clinical and policy—is underscored by the profound potential vulnerability (and resilience) of youths in this contemporary Ontario group home context. First, they ranged widely on nearly all scores: mental health, academic/learning abilities, peer

influences, positive and negative, and behaviours, ranging from very prosocial to antisocial. In short, as a group they not only have clear problems and limitations, but strengths and resiliencies as well. Most typically though this study's historically abused and neglected sample of youths, who had typically been in care between five and 10 years in six different foster care placements, were extraordinarily vulnerable. They were at much greater risk than the norm, for example, of mental illness, academic failure and consequent vocational failure, and ultimately of engaging in risky to antisocial behaviours, including the commission of delinquent or criminal acts. But there seems concomitant hope as this study also observed among this vulnerable sample of youths that their peers, group homes and neighbourhoods all mattered, and all pointed toward preventive opportunities. About a quarter of the youths in group home care in Ontario seemed to have very positively influential peers. One can clearly envision how this knowledge might be used to very good affect in making decisions about best group home case-mixes. Also, about 15% to 20%, or one of every five to seven of youths in Ontario group homes presently live in empirically risky environments: too large group homes and or poor neighbourhoods. The implications are obvious as this study's aggregate findings very strongly suggested that transfers to appropriately smaller group homes in more affluent neighbourhoods would substantially increase the quality of their care and very likely prevent many of their risky to antisocial behaviors and ultimately might primarily prevent the development of severe conduct problems.

### 5.1 Major Findings and Hypothesis Support

Summary counts of the study's six central hypothesis tests on prediction of antisocial behaviours—total and supportive—are displayed in Table 22. They are broken

down in the table by main hypotheses (cross-sectional and longitudinal) and systematic replications.

**Hypothesis 1a: Positive peer influences protectively predict youths' antisocial behaviours.** The inference that positive peers were protective was extremely strongly supported. Seventeen of 17 logistic regression tests of the main and interaction effects were statistically significant and supportive and showed that positive peer influence significantly and protectively predicted youth prosocial behaviours in both small and large group homes. The main test's odd ratios or preventive fractions ranged from 0.05 to 0.17. There were two main cross-sectional tests on summary conduct problems (antisocial behaviors), which were replicated with two main longitudinal tests. The four main tests were systematically replicated 13 times, with three preliminary tests and 10 specific behavioural tests of "often loses temper" or "often fights with or bullies others" (four cross-sectional and six longitudinal). Their odd ratios ranged from 0.06 to 0.42 [median = 0.20]). This finding supports Hirschi's germinal theory that youth who develop "prosocial values," associate with prosocial people or friends and prosocial institutions and activities on regular basis may not become delinquents or engage in antisocial behaviours because their prosocial perceptions and beliefs direct and prevent them from committing such acts (Hirschi, 1969).

**Table 22 Summary of Support for Study Hypotheses on Prediction of Antisocial Behaviours**

| Hypotheses | Main Hypotheses: Cross-Sectional Tests | Cross-Sectional Supportive | 3- Year Longitudinal Tests | 3- Year Longitudinal Supportive | Systematic Replications Tests | Systematic Replications Supportive |
|---|---|---|---|---|---|---|
| **Main effects or predictive associations** | | | | | | |
| Positive peer influences were protective | 2 | 2 | 2 | 2 | 13 | 13 |
| Negative peers influences were risky | 2 | 1 | 2 | 2 | 13 | 13[a] |
| **2- and 3-way interactions** | | | | | | |
| Positive peers more protective in larger homes | 1 | 1 | 1 | 0 | 11[b] | 9[c] |
| By gender: Boys more protected | 1 | 1 | 1 | 0 | 11[b] | 3 |
| Negative peers less risky in smaller homes | 1 | 0 | 1 | 1 | 12[d] | 7[e] |
| By gender | 1 | 0 | 1 | 0 | 12[d] | 0 |
| Positive peers more protective in poor neighbourhoods | 1 | 0 | 1 | 0 | | |
| By gender | 1 | 0 | 1 | 0 | | |
| Negative peers less risky in affluent neighbourhoods | 1 | 1 | 1 | 1 | | |
| By gender | 1 | 0 | 1 | 0 | | |

*Note*. Test with unstable models were not counted.
[a] Three of the tests approached statistical significance ($p < .10$).
[b] Two of the models were excluded because they were unstable.
[c] Direction of two were counter hypothetical (positive peers more protective in smaller homes).
[d] One of the models was excluded because it was unstable.
[e] One of the tests approached statistical significance ($p < .10$).

**Hypothesis 1b: Negative peer influences predict increased risks of youths' antisocial behaviours.** The inference that negative peers were risky was very strongly supported. Sixteen of 17 tests were practically and statistically significant, supportive and large (three approached statistical significance at $p < .10$) and supportive. The main tests' odd ratios or risk ratios ranged from 1.65 to 5.22 (median = 4.90). Estimated risks were larger at 3-year follow-up (ORs of 4.90 and 5.22) than at baseline (OR = 1.65). The two and three- way interaction effects also showed that negative peer influence was significantly associated with (predicted) increase risk of youth antisocial behaviours of conduct problems in small and large group homes and in low-income neighbourhoods. This risk was observed to increase significantly over a three-year period as observed in the longitudinal analysis.

**Hypothesis 2a: Positive peer protections are potentiated in lesser resourced group homes.** The inference that positive peers were more protective in larger homes was well supported by 10 out of 13 logistic regression tests. Eight were supportive, while two were directionally counter hypothetical. The eight supportive tests were practically significant and large. Their ORs or preventive fractions in larger homes ranged from 0.02 to 0.10 (median = 0.03). While in smaller homes they ranged from 0.05 to 0.34 (median = 0.20). Depictions of four significant cross-sectional tests, one main and three systematic replications, observed boys to be more protected in larger homes than girls. This finding contradicts earlier arguments that girls are relatively more susceptible to peer influence than boys (Elmer et al., 1987), but it confirmed other findings that indicated that boys are more readily influenced by their peers (Haynie & Osgood 2005; Warr, 1996).

**Hypothesis 2b: Better resourced group homes buffer negative peer influence risks.** The inference that negative peers were less risky in smaller homes (i.e., smaller homes were more protective) was well supported. Eight out of 14 logistic regression tests were statistically significant and supportive. Their odd ratios or preventive fractions in smaller homes ranged from 1.62 to 4.55 (median = 1.81) while in larger homes they ranged from 3.03 to 9.60 (median = 5.06). One main cross-sectional test on summary conduct problems (antisocial behaviors) was null, while the one main longitudinal test was significant. The one main test was systematically replicated seven times with four specific cross-sectional and three longitudinal behavioural tests of "often loses temper" or "often fights with or bullies others." The findings confirmed a recent systematic review that found that smaller group homes, probably better and well-resourced, have greater protective impacts on youth than larger, less-resourced homes (Osei et al., 2016).

**Hypothesis 3a: Positive peer protections are potentiated in less resourceful neighbourhoods.** The inference that positive peers were more protective in poor neighbourhoods was not supported. The two main hypotheses, cross-sectional and longitudinal, were non-significant both statistically and practically. Neither interaction with gender was significant.

**Hypothesis 3b: More resourceful neighborhoods buffer negative peer influence risks.** The inference that negative peers were less risky in more affluent neighbourhoods (i.e., more affluent neighbourhoods were more protective) was well supported. Both of the main hypotheses, cross-sectional and longitudinal, were statistically significant and supportive. The two supportive tests were practically significant and large. Their ORs or risk ratios in more affluent neighbourhoods were 1.33

to 3.88 (median = 2.60) while in poor neighbourhoods they ranged from 3.07 to 15.00 (median = 9.04). Neither interaction with gender was significant.

**Adjunct hypothesis on prosocial behaviours (not shown in Table 22, see Table F1): Better resourced group homes potentiate positive peer influences.** The inference that positive peers were more protective in smaller homes was supported (multiplicative protections associated with positive peers and well-resourced homes). One cross-sectional test was statistically significant and supportive. The test was practically significant and large. The odd ratio or resilient association in smaller homes was 4.49 while in larger homes it was 1.69. Depiction of one cross-sectional tests observed girls (OR = 6.60) to be more resilient in smaller homes than boys (OR = 4.01). Aside: Like all of the other analyses on antisocial behaviours there was a significant protective effect of positive peers. It was directly associated with the summary prosocial behavior scale (OR = 4.27). However, unlike nearly all the analyses on antisocial behaviors, there was no additional independent negative peer-prosocial behavior association.

***Summary of support for study hypotheses***. First, there was near perfect support of the main predictive effects of peer influences, positive and negative, among at risk youths in group home care in Ontario. Thirty-three of 34 hypothesis tests were supportive. Moreover, influences of positive peers were extraordinarily protective in preventing risky behaviors to conduct problems or antisocial behaviors among youths who resided in Ontario group homes between 2011-12 and 2014-15. Furthermore, the protective influences of relatively well-behaved or prosocial peers were extremely strong at the study's survey baseline and remained quite protective over the three years that they were retrospectively observed in this study. Second, the risk inducing influences of

negative peers, peers who themselves tended to be more troubled, risk taking or antisocial, than the norm, were quite strong at the study's baseline. And consistent with Elliot and Menard (1996), their detrimental influences increased substantially over time. That is, the strength of the negative peer influence-youth antisocial behavior association increased significantly over time. In other words, youths who lived with such more troubled to antisocial peers got worse (engaged in more antisocial behaviours) over the three years they lived together.

Third, concerning the central, most powerful tests of peer influence by group home size (proxy of group home resources) interactions, 18 of 25 hypothesis tests were supportive. Consistent with Osei and colleagues' (2016) systematic review-based suggestion, they very consistently inferred that group home size, that is, how many residents live together under one roof matters. In fact, it seems to matter very much. The fourth important inference that can be confidently drawn concerns the direction of the group home effect modifications. Smaller, probably better resourced homes with higher staff/caregiver/professional support versus youth ratios, seem to be much safer places. Their modifying affect was consistently protective. Negative peers had much less influence there. Alternatively, larger, probably lesser resourced homes with lower staff/caregiver/professional support versus youth ratios, seem to be much riskier places. Their modifying affect was consistently risk potentiating. But gratefully, in the transaction of peers with youths in group homes, such potentially vulnerable places are precisely where positive peers had their greatest protective influence. Quantities and qualities of the group home-relevant primary hypothesis tests confidently affirmed this.

Fifth, non-poor to affluent neighbourhoods (i.e., not high poverty places of concentrated low-income households) seemed quite protective as well, an inference that was supported by the cross-sectional and longitudinal analyses. Such may be particularly important given the profound multiplicative risks associated with the influences of negative peers in poor neighbourhoods. Youths so affected were observed to have a 15-fold greater risk of having conduct problems or engaging in antisocial behaviours, a risk that still existed, but that was substantially reduced in more affluent and resourceful neighbourhoods (reduced to less than a 4-hold greater risk). Quantities and qualities of the neighbourhood-relevant secondary hypothesis tests less confidently and less powerfully suggested this knowledge. They are probably best thought of as developed hypotheses that remain for more rigorous and powerful future research affirmation (or refutation). But taken together, the findings related to group homes and neighbourhoods seem very consistent with the contextual influence hypothesis (Brown et al., 2008; Dishion & Dodge, 2005). Youths in large group homes located in low-income neighbourhoods were clearly more vulnerable to negative peer influences than were youths in small group homes in affluent neighbourhoods. Poor neighbourhoods are noted for their lack of social and economic resources and prevalent crime (Yabiku, et al., 2007), while affluent neighbourhoods have more such resources including adult role models and even more greenspace as well as other community resources that may serve as positively supportive influences (Bogar & Beyer, 2016). Youths in group homes in impoverished neighbourhoods are probably much more exposed to diverse negative influences inside and outside the home and so at some point may not be able to resist the influences of such overwhelming contextual factors within such a challenging environment.

Sixth, one may ask: What of gender? Of the 31 relevant hypothesis tests involving various 3-way combinations of peers, group homes and youths' gender, 27 were null. This very much allows for the inference that most of the effects already described, including especially the potential protective influences of positive peers, well-resourced group homes and relatively resourceful neighbourhoods all probably apply equivalently to boys and girls. There was some, very modest and equivocal evidence supporting notions of greater protections among boys in larger group homes (greater protective influence of positive peers on youths' antisocial behaviours) and among girls in smaller group homes (greater resilient influence of positive peers on youths' prosocial behaviours). The later was consistent with an earlier study that found girls behave in more prosocial ways, on average, than boys (Beutel & Johnson, 2004). These gender-inclusive hypotheses are probably best thought of as preliminarily screened hypotheses that remain for more rigorous and powerful future research affirmation (or refutation).

Finally, a number of interesting and potentially very important, but non-hypothesized, findings ought to be mentioned. First, the main effects of group home size, neighbourhood poverty and gender were all null in the main analyses. If this had been a more reduced analysis of main effects only, one might have inferred (erroneously) that the size of group homes, poverty and gender do not matter. But the analyses and depictions of the significant interaction effects that this study observed demonstrated quite clearly that group home and neighbourhood resources matter very much as probably also does gender. Thus, the importance of studying and interpreting interaction effects was underscored. Also, emotional symptoms of anxiety and or depression were potentially confounding and so accounted for in nearly all of the summary analyses of

antisocial behaviours. But more than that, scores on the Emotional Symptom Scale significantly and substantially predicted scores on the Conduct Problem Scale in nearly all such unadjusted and adjusted analyses. Typically, youths who scored relatively high on anxiety/depression were two to two and a half times more likely to score relatively high on conduct problems. Effective treatments of their psychosocial symptoms would seem to have obvious preventive potentials.

***Theoretical consistencies.*** This arguably at risk group of behaviourally challenged youths seemed in certain contexts to influence each other negatively, leading to much larger risks of antisocial behaviours after they had lived together for three years. Such is consistent with the notion that negative peer influences are metaphorically infectious. Vulnerable youths who are prevalently exposed to youths with risky, delinquent or otherwise challenging to antisocial behaviours or conduct problems are at increased risk of becoming infected with these delinquent to antisocial behaviours (Müller & Minger, 2013). The findings also confirmed an existing notion that has been well-known in other agencies or organizations that place variously at-risk youths together in groups or congregate residences. Diverse delinquent to antisocial behaviours such as substance uses, thefts, bullying and fighting, and even weapon use tend to increase precipitously among certain members of such groups (Müller & Minger, 2013). This study was the first to observe this phenomenon in a Canadian group home context.

Other of this study's hypothetically supportive findings were also consistent with its theoretical context. Take the consistent finding that positive peer influences significantly and protectively predicted youths' prosocial behaviours for instance (hypothesis 1a). This finding supported Hirschi's germinal theory that youths who

develop “prosocial values” through associating with prosocial people and institutions on a regular basis will have diminished risks of becoming delinquent or engaging in antisocial behaviours. Their prosocial beliefs and perceptions, it is theorized, will prevent them from committing such acts or engaging in such behaviours (Hirschi, 1969). While the fact that risks associated with negative peer influences were observed to increase quite consistently in longitudinal analysis (hypothesis 1b), such prolonged exposures in a sense made their illnesses (i.e., behavioural and related mental health challenges) worse. Then the observations of the protective or risk enhancing moderating influences that were, respectively, associated with relatively smaller and larger group homes, were consistent with Osei and colleagues’ (2016) review-generated hypothesis, but also with the above noted theory (hypothesis 2a and 2b). For example, large homes with many residents providing more contacts with or exposures to negative peers, while small homes with few residents may provide more intimate contacts or exposures to positive peers.

## 5.2 Study Implications and Recommendations

**Practices and policies.** Caring for youths in group homes requires using multifaceted approaches to meet their diverse needs. If such youths are to be properly treated and adequately supported many will need social work, allied mental health and other supports such as academic tutoring and or occupational counselling. Recall the very high prevalence of critically important challenges among them not the least of which were prevalent problems in school and extremely high prevalence rates of the symptoms of anxiety and depression. It would appear, however, that these are early symptoms, harbingers of future vocational and or mental health challenges/illnesses. That is, the vast majority of such youths in group homes would seem to be at grave risk, but probably do

not yet warrant a diagnosis, for example, of an anxiety disorder or depression. One could imagine group homes, embedded in preventive (social recreational, academic and occupational programming) and therapeutic (social work and allied counselling and related interventions) milieus, as places of effective early interventions with at risk youths. It seems pretty clear also that interdisciplinary counselors will find an important ally in working with such youths in group home care, that is, their less troubled and more positively influential peers. Relatedly regarding direct practices, administrators and decision makers need to understand that case-mix matters. At least a quarter of this study's participating youths' peers could be fairly characterized as relatively untroubled with dominant prosocial characteristics. One certainly would not want to lose their influence so it seems rational to aim for at least that minimal positive-negative peer influence in future group homes. Of course a higher positive peer prevalent influence would be preferred, if possible.

This study's findings also remind child welfare practitioners to remain cautious in placing youths in group homes. They ought to remain the placements of last resort in foster care as it seems clear that they generally remain quite risky places to live. This study centrally set out to gain knowledge about the relationships between group home size and important risks, that is, the risks of youths engaging in antisocial behaviours and ultimately having severe conduct problems or disorders. The strongest evidence produced was precisely in this score. Findings from this study converged perfectly with at least one recent government ministry directive (Ministry of Children and Youth Services, 2016). Both clearly agreed that group homes with eight or more residents ought to be immediately downsized. They simply represent too risky an environment in which to care

for such at risk youths. Yet presently one of every seven youths in Ontario group homes lives in one that is very large, in one that has, in fact, been empirically demonstrated to be too large a home. Enforcement of this provincial directive has clearly been problematic though. Further research, knowledge user-researcher coalition formation and advocacy will be needed. I intend to be a part of that effort.

It could be adversarially argued that this study's evidence is too weak to support such a policy recommendation. It was, after all, correlational at its baseline and observational throughout its 3-year longitudinal follow-up period. In other words, because it was not a randomized controlled trial, it could not have accounted for all of the possible confound or alternative explanations for its findings. The ethical challenges, perhaps impossibility of accomplishing such a trial in this field notwithstanding, this study's consistent observation of large "plausible risks" were compelling and, I believe, warrant this recommendation (Persson, 2016; Weir, Schabas, Wilson, & Mackie, 2010). The epidemiologic plausibility risk principle suggests in weighing observational evidence one ought to be cognizant of one's social responsibility and consider the relative human costs of "false positives" and "false negatives" while considering intervention costs. The policy decision then seems even clearer as any "false positives" (unnecessarily transferring the most at risk youths in larger homes to smaller ones) would very likely not be further harmed, "false negatives" (not transferring the most at risk youths in larger homes to smaller ones) would very likely cause great harm to them, their families and their communities. Finally, in a relative sense, the benefits would seem to far outweigh the intervention costs, that is, the costs of modestly increasing the number of provincial group homes by 10% to 15%.

Beyond the "optimum" group home criterion of < 8 residents, at least one other provincially acceptable level (< 7 residents) has been suggested. And it may be that < 6 or even < 5 would even more effectively prevent the development of myriad challenges among residents. Suggestive preliminary evidence was gathered in the pilot/planning/ analytic design phase of this dissertation, but full cost-benefit analyses across this continuum of criteria is clearly beyond the scope of this dissertation. But in working with provincial decision makers it could be quite readily accomplished. Finally, the policy implications of this study's findings on neighbourhood poverty were analogous to those on group homes. Moreover, they could concomitantly be guided by the rhetorical question: "Where would one want one's own son or daughter to live? It seems reasonable to recommend that no further group homes be established in neighbourhoods where a quarter or more of the residents are poor and that those presently living in such vulnerable neighbourhoods, be transferred. Similar to the above, other criteria of concentrated neighbourhood poverty (e.g., 15%, 25%, 30% poor etc.) and their consequent risks could easily be further examined with the province. Clearly, the evidence on neighbourhood is much weaker than that on group homes. The below noted future research would serve to bolster confidence in this policy decision.

I have clinically practiced in this field for more than 13 years. I plan the following as I transition into the roles of researcher and knowledge translator, aiming to synthesize and disseminate knowledge that will be practically useful to coalitions of diverse knowledge users; practitioners, administrators and policy makers and the children, youths and their families we all ultimately aim to serve. First, the central findings of this dissertation are being concomitantly prepared for peer reviewed publication in such

scientifically and professionally respected forums as the journal *Children & Youth Services Review* (Osei et al., 2019a; 2019b). Second, abstracts of these will be presented at appropriate social work and interdisciplinary child welfare annual meetings and conferences. Provincial meetings of knowledge users and researchers will be especially targeted: Ontario Association of Children's Aid Societies, Ontario Association of Child & Youth Care and others. Third, these traditional dissemination strategies will be augmented with contemporary web-based, academic social media and direct correspondence with key knowledge users and decision makers with diverse involved groups, ranging from stakeholder groups, private and public, to ministries: Foster Parents Society of Ontario, Ontario Family Group Homes, Inc., Ontario Association of Residences Treating Youth, Ontario Ministry of Children & Youth Services, Ontario Ministry of Community & Social Services and others. Fourth and finally, aiming to build an influential knowledge user-researcher team, I intend on being a part of accomplishing the below outlined research agenda.

**Limitations and future research.** The OnLAC dataset used in this study was highly representative of youths in group home care in Ontario as it was based on interviews of 90% of all eligible youths. Given the relative vulnerability of the target population and the general clinical and administrative challenges in this field of child welfare, this seems astoundingly good, providing great assurance of this study's external validity, at least at its baseline. This and other strengths of this study have already been discussed. But what of its limitations related to external validity? For starters, missing data entered this analysis in a number of ways. Our reasons for thinking it not likely confounding or not likely to have affected internal validity were already discussed.

However, to the extent that relatively large subsamples of eligible participants did not participate (for any reason) did they probably affect this study's external validity, not to mention its statistical power. For example, though missing data was minimal for most study variables, it was prevalent for one central study variable, the Negative Peer Influence Scale (22.6% missing). And as mentioned, given the nature of its items/questions that ask one youth about the illegal activities of other youths in the same home, such prevalent non-responding was not surprising. It is easy to imagine, however, how the OnLAC data collected process using somewhat informal conversational interviews conducted face-to-face between youths and group home or at least child welfare representatives in the group home could have made this matter worse. Alternative data collection strategies including the following would probably bolster responding and so minimize such missing data: train and use more disinterested, external research assistant interviewers, add some more formality to more anonymized interview processes (e.g., in private rooms) including spending more time in relationship/trust building through thorough discussions of informed consent and confidentiality. Another type of missing data was encountered in joining the OnLAC database to the National Household Survey that affected the neighbourhood poverty analyses. Again, though it was not confounding it was missing (i.e., residential address information) from about a third of the database. This is basically an administrative issue that could easily and ought to be rectified in future studies.

Another type of missing information could have affected both this study's external and internal validity. Over its three year life about 80% of the original sample left the child welfare system. Most prevalently it seems that they aged out of group home

care, primarily into independent living. Keep in mind such youths were not in some way selectively lost to follow-up (e.g., they were not any more difficult to find than others). OnLAC simply does not have the built in resources to follow such youths routinely into independent living or anywhere else outside of the child welfare system. As long as one keeps in mind who this study's inferences most validly generalize to (somewhat less troubled youths who remained in group home care for three years) no bias ought to intrude. Still scholars and knowledge users, including us, will ultimately want to be able to comprehensively follow all such youths to young adults, relatively untroubled to very troubled, wherever their final dispositions happen to be, be it independent living, elsewhere in the child welfare system or even in other systems like the mental health care or criminal justice systems. In doing so one would certainly want to also consider including augmentative and practically important, longer term outcomes, prosocial to antisocial, from such as educational, health care and crime justice administrative records. Such more exhaustive follow-up of the entire cohort would be straightforward, but quite expensive. All of the research methodological enhancements recommended here will require ample funding support to enact. The original OnLAC database establishment was funded by the Social Sciences and Humanities Research Council of Canada (SSHRC). This suggested research agenda seems very much like a renewal grant. I intend as one of the first tasks in my junior investigative career to apply for such SSHRC support, perhaps for complimentary Canadian Institutes of Health Research support as well.

Other, more minor methodological concerns were noted that ought to be addressed in future research. Though the OnLAC database is very rich on certain scores, aside from frequency of contact, it is devoid of information about youths' families of

origin. I would recommend adding such a section routinely to OnLAC, otherwise I would consider retrospectively adding such a supplemental sub-questionnaire to future original analyses. Also, of necessity this retrospective analysis extracted 2011 neighbourhood-level socioeconomic data from the National Household Survey, a socioeconomic survey that was much more limited (e.g., response rate < 70%) than the quinquennial national census of Canada. Future prospective researchers will be able to use the now re-established, more comprehensive, long-form-based censuses of 2016 and or 2021. Finally, minor power problems with accompanying regression model instabilities were noted in gender-based subsample analyses (e.g., depictions of interactions that required analyzing separate strata of boys and girls). Relatedly, we were not able to additionally analyze the important subsamples of African/Caribbean/black or Indigenous youths who, in aggregate, comprised 40% of the sample. Power calculations show that by addressing the above-noted issues related to missing data and administrative losses to follow-up, such an augmented OnLAC database would have ample power, minimally 80%, to validly examine these important intersecting identifies of youths in group home care. Some variables that may be of interest in any future research involving youth in group homes in Ontario may include, placement satisfaction, foster (group home worker) parenting practice and group home model (parental or staff, see Appendix A).

The main challenges facing group homes and which may need to be addressed include worker turnovers due to poor pay/wages and majority of group home workers are part-time workers. These affect the quality of care they provide to youth. Youth cannot bond with workers simply because of worker turnovers. Private group home operators need to revisit the pay restructure for employees and the per diem structure received by

private group home operators must be revisited by the MCYS. Youth in group homes should be allowed to have reasonable access to modern technology including cell phone, internet and computers.

### 5.3 Conclusions

Youth in Ontario group homes, though a diverse population, are typically at great risk, risk of engaging in risky to antisocial behaviours. Moreover, many of them live in risk potentiating environments with other at risk youths. For the first time, potentially protective factors were studied in this Canadian child welfare context. The following three protective factors were discovered and cross-validated with this survey and retrospective cohort study: living with less troubled, more prosocial, positively influential peers in a relatively small, well-resourced group home that is located within a relatively resourceful (i.e., non-poor) neighbourhood. Group homes ought to be clinically enriched, making use of youths' strengths, resiliencies and assets including those of their peers. No youth ought to be placed with any more than six other youths in a single group home and no such home ought to be located in a prevalently low-income or impoverished neighbourhood. A more powerful, prospective cohort investigation with rigorous follow-up procedures of youths within and outside the child welfare system will be needed to solidify these inferences and recommendations.

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## Appendix A: OnLAC Codebook of Potentially Relevant Study Variables

Table A1 Outcome Variables—Antisocial Behaviours: Conduct Problems Scale

| Measure | Measured by | Rated by | Target | Number of Items = 5 | Responses = 3 |
|---|---|---|---|---|---|
| Conduct Problems | Conduct Problems Scale | Foster Parent | Youth | 1. Often loses temper<br>2. Generally well behaved, usually does what adults request (reverse code)<br>3. Often fights with other youth or bullies them<br>4. Often lies or cheats<br>5. Steals from home, school or elsewhere | 2 = True<br>1 = Somewhat true<br>0 = Not true |
| Scale score is sum of 5 items; higher score indicates a greater conduct problem.<br>Internal consistency reliability: Chronbach's αs .77, 0.78 & .87 among children and youth in care in Ontario (Bell et al., 2013; Bell, Romano, & Flynn, 2015; Tessier et al., 2018).<br>Criterion/construct validity: sensitive screen for conduct disorder among UK children and youth (Goodman et al., 2000; Goodman, Meltzer, & Bailey, 2003); inversely associated with positive parenting and academic performance among children and youth in care in Ontario (Bell et al., 2015; Tessier et al., 2018). Much more on validity (Boyle et al., 1993; He et al., 2013; Latimer et al., 2003).<br>A subscale of the SDQ based on the AAR (Flynn et al., 2006). | | | | | |

Table A2 Outcome Variables—Antisocial Behaviours: Drug, Alcohol and Cigarette Use

| Variable | Measured by | Rated by | Target | Number of Items = 3 | Responses |
|---|---|---|---|---|---|
| Youth's Drug, Alcohol and Cigarette Use | Background Questionnaire | Youth | Youth | At the present time, which of the following best describes your experience with:<br>1. Cigarettes smoking<br><br>2. Drinking alcohol over the past 12 months<br><br>3. Marijuana and cannabis product (also known as a joint, pot, grass or hash) use over the past 12 months? | <br><br>2 = Daily<br>1 = Occasionally<br>0 = Not at all<br><br>5 = More often<br>4= At least one drink weekly<br>3 = At least 1 drink once-twice month<br>2 = At least1 drink a few times a year<br>1 = Only tried once-twice, but don't drink alcohol anymore<br>0 = Have never had a drink of alcohol<br><br>2= Have done it at least once in the past 12 months<br>1 = Have done it, but not during the past 12 months<br>0 = Have never done |
| Criterion/construct validity: drug and alcohol use inversely associated with developmental assets and hope among US youth (Keyes, 2006; Oman et al., 2004). Interrater reliability (foster parent-youth), $r = .67$, $p < .01$ (Norman et al., 2016). | | | | | |

Table A3 Outcome Variables—Prosocial Behaviours: Prosocial Behaviour Scale

| Variable | Measured by | Rated by | Target | Number of Items = 5 | Responses = 3 |
|---|---|---|---|---|---|
| Prosocial Behaviour | Prosocial Behaviour Scale | Foster Parent | Youth | 1. Considerate of other people's feelings,<br>2. Shares readily with other youth, for example, books, games, food<br>3. Helpful if someone is hurt, upset, or feeling ill<br>4. Kind to younger children<br>5. Often offers to help others parents, teachers, other youth | 2 = True<br>1 = Somewhat true<br>0 = Not true |
| Scale score is sum of 5 items; higher score indicates more prosocial behaviour.<br>Internal consistency reliability: Chronbach's αs 0.81 & .84 among children and youth in care in Ontario (Bell, Romano, & Flynn, 2013; Flynn, Ghazal, Legault, Vandermeulen, & Petrick, 2004). Interrater reliability (foster parent-youth), $r = .57$, $p < .01$ (Norman, Menna, & Ellison, 2016).<br>Criterion/construct validity: sensitive screen for conduct disorder (inverse) among UK children and youth (Goodman, Ford, Simmons, Gatward, & Meltzer, 2000). Much more on validity (Boyle et al., 1993; He, Burstein, Schmitz, & Merikangas, 2013).<br>A subscale of the Strengths and Difficulties Questionnaire (SDQ, emotional and behavioural development dimension) based on the Canadian adaptation of the Assessment Action Record (AAR) (Flynn, Ghazal, & Legault, 2006). | | | | | |

Table A4 Outcome Variables—Prosocial Behaviours: Hope Scale

| Variable | Measured by | Rated by | Target | Number of Items = 6 | Responses = 4 |
|---|---|---|---|---|---|
| Hope | Hope Scale | Youth | Youth | 1. I think I am doing pretty well.<br>2. I can think of many ways to get the things in life that are most important to me.<br>3. I am doing just as well as other kids my age.<br>4. When I have a problem, I can come up with lots of ways to solve it.<br>5. I think the things I have done in the past will help me in the future.<br>6. Even when others want to quit, I know that I can find ways to solve the problem. | 3 = Most of the time<br>2 = Often<br>1 = Sometimes<br>0 = Never |
| Scale score is sum of 6 items; higher score indicates greater hopefulness.<br><br>Internal consistency reliability: Cronbach αs of .74 to .91 (median = .91) among US youths and young adults (Snyder, Sympson, Ybasco, Borders, Babyak, & Higgins, 1996 [4 studies]).<br><br>Criterion/construct validity: directly associated with self-esteem, positive affect and goal-directed thinking (Snyder et al., 1996).<br><br>Canadian adaptation of the AAR (Flynn et al., 2006). | | | | | |

Table A5 Outcome Variables—Prosocial Behaviours: Positive Mental Health Scale

| Variable | Measured by | Rated by | Target | Number of Items = 14 | Responses = 6 |
|---|---|---|---|---|---|
| Positive Mental Health | Positive Mental Health Scale | Youth | Youth | How often over past mo did you feel ____?<br>1. Happy<br>2. Interested in life<br>3. Satisfied<br>4. That you had something important to contribute to society<br>5. That you belonged to a community (like a social group, your school, or your neighbourhood)<br>6. That our society is becoming a better place for people like you<br>7. That people are basically good<br>8. That the way our society works makes sense to you<br>9. That you liked most parts of your personality<br>10. Good at managing the responsibilities of your daily life<br>11. That you had warm and trusting relationships with other children/youth<br>12. That you had experiences that challenged you to grow and become a better person<br>13. Confident to think or express your own ideas and opinions<br>14. That your life has a sense of direction or meaning to it | 5 = Every day<br>4 = Almost every day<br>3 = 2 or 3 times a week<br>2 = About once a week<br>1 = Once or twice a month<br>0 = Never |
| Scale score is sum of 14 items; higher score indicates more positive attitude.<br>Internal consistency: Cronbach's αs .84 & .91 among US youth and children/youth in Ontario care (Flynn et al., 2006; Keys, 2006).<br>Criterion/construct validity: inversely associated with conduct problems, and drug/alcohol or cigarette use (Keyes, 2006). | | | | | |

Table A6 Outcome Variables—Prosocial Behaviours: Academic Performance Scale

| Variable | Measured by | Rated by | Target | Number of Items = 4 | Responses = 3 |
|---|---|---|---|---|---|
| Academic Performance | Academic Performance Scale | Foster Parent | Youth | 1. Reading and other language arts (spelling, grammar, composition),<br>2. Mathematics<br>3. Science<br>4. Overall | 2 = Very well or well<br>1 = Average<br>0 = Poorly or very poorly |
| Scale score is sum of 4 items; higher score indicates better academic performance.<br>Internal consistency reliability: Chronbach's αs .80, .90 & 0.91 among children and youth in care in Ontario (Bell et al., 2013; Flynn et al., 2004; Tessier, O'Higgins, & Flynn, 2018).<br>Adapted from the National Longitudinal Survey of Children and Youth and the Canadian adaptation of the AAR (Flynn et al., 2006; Statistics Canada & Human Resources Development Canada, 1999). Inversely associated with aggression, delinquency and scores on the Conduct Problems Scale (Latimer, Kleinknecht, Hung, & Gabor, 2003; Tessier et al., 2018). | | | | | |

Table A7 Outcome Variables—Prosocial Behaviours: Self-Esteem Scale

| Variable | Measured by | Rated by | Target | Number of Items = 6 | Responses = 3 |
|---|---|---|---|---|---|
| Self-Esteem | Self-Esteem Scale | Youth | Youth | 1. I have a lot to be proud of.<br>2. I can do things as well as most people.<br>3. I am as good as most other people.<br>4. Other people think I am a good person.<br>5. When I do something, I do it well.<br>6. A lot of things about me are good. | 2 = Most of the time/always<br>1 = Sometimes<br>0 = Rarely/never |
| Scale score is sum of 6 items; higher score indicates more positive self-esteem.<br>Internal consistency reliability: Cronbach's $\alpha$ = .82 among children and youth in care in Ontario (Flynn et al., 2004).<br>Criterion/construct validity: directly associated with hope, positive affect and goal-directed thinking (Snyder et al., 1996).<br>Boys score slightly higher (Kling, Hyde, Showers, & Buswell, 1999). Adapted from the National Longitudinal Survey of Children and Youth and the Canadian adaptation of the AAR (Flynn et al., 2006; Statistics Canada & Human Resources Development Canada, 1999). | | | | | |

Table A8 Outcome Variables—Prosocial Behaviours: Positive Coping Strategies Scale

| Variable | Measured by | Rated by | Target | No. of Items = 4 | Responses = 4 |
|---|---|---|---|---|---|
| Coping Strategies | Positive Coping Strategies Scale | Youth | Youth | 1. I do things to make my problem better.<br>2. I think about different ways of solving my problem.<br>3. I take action to improve the situation.<br>4. I try to learn more about what is causing my problem. | 3 = Most of the time<br>2 = Often<br>1 = Sometimes<br>0 = Never |
| Scale score is sum of 4 items; higher score indicates more positive coping behaviours.<br>Internal consistency reliability: Cronbach's $\alpha$ = .86 among youth in care in Ontario (Flynn & Legault, 2002).<br>Criterion/construct validity: inversely associated with physical aggression (Flynn & Legault, 2002).<br>Canadian adaptation of the AAR (Flynn et al., 2006). | | | | | |

Table A9 Predictor Variables—Positive Peer Influences: Friendship Scale

| Variable | Measured by | Rated by | Target | Number of Items = 2 | Responses = 3 |
|---|---|---|---|---|---|
| Friendship with Peers | Friendship Scale | Youth | Youth | 1. I have many friends<br>2. I get along easily with others my age | 2 = True or mostly true<br>1 = Sometimes true/sometimes false<br>0 = False or mostly false |

Table A10 Predictor Variables—Positive Peer Influences: Positive Peer Influence Scale

| Variable | Measured by | Rated by | Target | Number of Items = 5 | Responses = 3 |
|---|---|---|---|---|---|
| Peer Problems | Peer Problem Scale | Foster Parent | Youth | 1. Would rather be alone than with youths (reverse)<br>2. Has at least one good friend<br>3. Generally liked by other youth<br>4. Picked on or bullied by other youth (reverse)<br>5. Gets along better with adults than with youths (reverse) | 2 = True<br>1 = Somewhat true<br>0 = Not true |
| Scale score sum of 5 items; higher score indicates more positive peer influences.<br>Internal consistency reliability: Chronbach αs .67 & 0.68 among children in care in Ontario (Bell et al., 2013; Flynn et al., 2006).<br>Criterion/construct validity: associated with aggression and delinquency among US youth (Latimer et al., 2003).<br>A subscale of the SDQ based on the AAR (Flynn et al., 2006). | | | | | |

Table A11 Predictor Variables—Negative Peer Influences Scale: (Drug, Alcohol and Cigarette Use and Criminal Behavior)

| Variable | Measured by | Rated by | Target | Number of Items = 5 | Responses = 4 |
|---|---|---|---|---|---|
| Friends' Cigarette Smoking, Alcohol Consumption, Drug Use and Commitment of Crimes | Background Questionnaire | Youth | Peers | How many of your close friends do the following?<br>1. Smoke cigarettes<br>2. Drink alcohol<br>3. Have tried marijuana<br>4. Have tried drugs other than marijuana<br>5. Break the law by damaging property, stealing or hurting someone | 4 = All<br>3= Most<br>1 = A few<br>0 = None |

Scale score is summing of two items; higher score indicates more negative peer influences.

Internal consistency reliability: Cronbach's $\alpha = .68$ among children and youth in care in Ontario (Flynn et al., 2004).

Adapted from the National Longitudinal Survey of Children and Youth and the Canadian adaptation of the AAR (Flynn et al., 2006; Statistics Canada & Human Resources Development Canada, 1999).

Table A12 Predictor & Moderator Variables: Positive Peer Influences, Group Home & Neighborhood Resources: Developmental Assets Scale

| Variable | Measured by | Rated by | Target | Number of Items = 40 | Responses = 3 |
|---|---|---|---|---|---|
| Developmental Asset Profile | Developmental Asset Scale | Child welfare worker | Youth | Support<br><br>*Caregiver support*: Caregivers provide high levels of love and support.<br>*Positive communication*: Youth and caregivers communicate positively and youth is willing to seek advice and counsel from caregivers.<br>*Other adult relationship:* Youth receives support from other adults besides caregivers.<br>*Caring neighbourhood:* Youth experiences caring neighbours.<br>*Caring school environment:* School provides a caring, encouraging environment.<br>*Caregiver involvement:* Caregivers are actively involved in helping youth succeed in school.<br>Empowerment<br>*Community values youth:* Youth perceives that adults in the community value youth.<br>*Youth as resources:* Youth is given useful roles in the community.<br>*Service to others:* Youth serves others in the community on a regular basis.<br>*Safety:* Youth feels safe at home, school, and in neighbourhood.<br>Boundaries and Expectations<br>*Caregiver boundaries:* Caregivers have clear rules and consequences and monitor the youth's whereabouts.<br>*School boundaries:* School provides clear rules and consequences. | 1 = Yes<br><br>0 = Uncertain<br><br>0 = No |

| | | | | | |
|---|---|---|---|---|---|
| | | | | *Neighbourhood boundaries:* Neighbours take responsibility for monitoring youth's behaviour.<br>*Adult role models:* Caregivers and other adults model positive, responsible behaviour.<br>*Positive peer observations:* Youth's best friends model responsible behaviour.<br>*High expectations:* Both caregivers and teachers encourage youth to do well.<br>Positive Values<br>*Caring:*<br>Youth places high value on helping other people.<br>*Equality and social justic*e: Youth places high value on promoting equality and reducing hunger and poverty.<br>*Integrity:* Youth acts on convictions and stands up for his/her beliefs.<br>Honesty: Youth "tells truth even when it is not easy".<br>*Responsibility*: Youth accepts and takes personal responsibility.<br>*Restraint:* Youth believes it is important not to be sexually active or to use alcohol or other drugs.<br>Social Competencies<br>*Planning and decision making:* Youth knows how to plan ahead and make choices.<br>*Interpersonal competence:* Youth has empathy, sensitivity, and friendship skills.<br>*Cultural competence:* Youth has knowledge and comfort with people of different cultural, racial, and/or ethnic backgrounds.<br>*Resistance skills:* Youth can resist negative peer pressure and dangerous situations.<br>*Peaceful conflict resolution:* Youth seeks to resolve conflict nonviolently. | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | Positive Identity<br>*Personal power*: Youth feels that he/she has control over "things that happen to me."<br>*Self-esteem*: Youth reports having high self-esteem.<br>*Sense of purpose*: Youth reports that "my life has a purpose."<br>*Positive view of personal future*: Youth is optimistic about personal future. | |

Scale score is sum of 40 items; higher scores indicates the child welfare worker believes the youth possesses more developmental assets.

Internal consistency reliability: Cronbach's $\alpha$ = .91 (Filbert & Flynn, 2010).

Criterion/construct validity: directly associated with prosocial behavior, self-esteem and academic performance, and inversely associated with conduct problems and the experience of violence among US youth, Aboriginal children and youth in care in Ontario (Filbert & Flynn, 2010; Scales, 1999); and directly with non-use of drugs and alcohol among US youth (Oman et al., 2004; Scales, 1999).

Table A13 Moderator Variables—Group Home Resources: Relationship with Caregiver Scale

| Variable | Measured by | Rated by | Target | Number of Items = 4 | Responses = 3 |
|---|---|---|---|---|---|
| Quality of Relationship with Foster parents (Group Home Workers) | Relationship with Caregiver Scale | Youth | Foster Parents | 1. How well do you feel he/she understands you?<br>2. How much fairness do you receive from him/her?<br>3. How much affection do you receive from him/her?<br>4. Overall, how would you describe your relationship with him/her?" | For the first 3 items the responses are:<br>2 = A great deal<br>1 = Somewhat<br>0 = Very little<br>For the 4th item, the responses are:<br>2 = Very close<br>1 = Somewhat close<br>0 = Not very close |
| Scale score is sum of 4 items; higher score indicates relationship of higher quality.<br>Internal consistency reliability: Cronbach's $\alpha$ = .82<br>Adapted from the National Longitudinal Survey of Children and Youth and the Canadian adaptation of the AAR (Flynn et al., 2006; Statistics Canada & Human Resources Development Canada, 1999). | | | | | |

Table A14 Moderator Variables—Group Home Resources: Placement Satisfaction Scale

| Variable | Measured by | Rated by | Target | Number of Items = 6 | Responses = 3 |
|---|---|---|---|---|---|
| Placement Satisfaction | Placement Satisfaction Scale | Youth | Placement | 1. You like living here<br>2. You feel safe living in this home<br>3. You would be pleased if you were to live here for a long time<br>4. You are satisfied with the amount of privacy you have here<br>5. You have a good relationship with other people with whom you are living<br>6. Overall, you are satisfied with your current living situation here | 2 = A great deal<br>1 = Some<br>0 = Very little |
| Scale score is sum of 6 items; higher scores indicating greater satisfaction.<br>Internal consistency reliability: Cronbach's $\alpha$ = .89 & .90 among youth in care in Ontario (Flynn, Robitaille, & Ghazal, 2006; McFarlane, 2015).<br>Criterion/construct validity: inversely associated with aggression conduct problems and directly associated with quality of relationships with caregivers and friends (Cheung, Goodman, Leckie, & Jenkins, 2011; Flynn et al., 2006; McFarlane, 2015). Also associated with the number of youths in home, $r$ = - .30, $p$ < .001 (McFarlane, 2015). | | | | | |

*Notes*. (1) These additional descriptive characteristics of the group homes and caregivers (group home workers/foster parents) were also available in the database; caregiver: disciplinary training and education; group home: model (foster parent/staff), staffing (team/key worker) and funding (private/public). Their potential moderating influences will be explored.
(2) The moderating influence of another available, but key variable—# of youths residing in the group home—will be tested.

Table A15 Moderator Variables—Group Home Resources: Foster Parenting Scales

| Variable | Measured by | Rated by | Target | Number of Items = 9 | Responses = 5 |
|---|---|---|---|---|---|
| Foster Parenting Practices | Positive Parenting Scale<br><br>Inconsistent Discipline Scale<br><br>Poor Supervision Scale | Youth | Group Home Workers (Foster Parents) | Positive Parenting Scale:<br>1. Caregiver tells you you're doing a good job<br>2. Caregiver compliments you when you have done something well<br>3. Caregiver praises you for behaving well<br><br>Inconsistent Discipline Scale:<br>4. Caregiver warns you that s/he will discipline you and then does not do it<br>5. You talk your caregiver out of disciplining you after you have done something wrong<br>6. Your caregiver lets you out of a discipline consequence early (like lifting restrictions earlier than s/he originally said)<br><br>Poor Supervision Scale:<br>7. You fail to leave a note or let your caregiver know where you are going<br>8. You stay out in the evening past the time you are supposed to be home<br>9. Caregiver doesn't know friends youre out with | 4 = Always<br>3 = Often<br>2 = Sometimes<br>1 = Almost never<br>0 = Never |
| Total scale and subscale scores, respectively, sum of 9 and 3 items each; higher subscale scores indicate more positive parenting, more inconsistent discipline and poorer supervision.<br><br>Internal consistency reliability, respectively, for the total scale and 3 subscales: Chronbach's αs of (73 & .74), (.77 & .86), (.74 & .75) and (.58 & .81) among children in care in Ontario and children in Australia (Bell et al., 2013; Elgar, Waschbusch, Dadds, & Sigvaldason, 2007).<br>Criterion/construct validity: all associated with parental involvement and punishment in predictable directions among children in Australia (Elgar et al., 2007); positive parenting inversely associated with conduct problems among children and youth in care in Ontario (Bell et al., 2015; Flynn et al., 2006). | | | | | |

Table A16 Moderator Variables—Group Home Resources: Shared Activities Scale

| Variable | Measured by | Rated by | Target | Number of Items = 4 | Responses = 5 |
|---|---|---|---|---|---|
| Shared Activities | Shared Activities Scale | Foster Parent | Youth | 1. How often do you eat together?<br>2. How often do you have a discussion together?<br>3. How often do you have a family outing/ entertainment together?<br>4. How often do you participate in activities, ceremonies, practices, etc. that are culturally relevant to the child? | 4= Every day<br>3= 3-6 days/week<br>2 = 1-2 days/week<br>1 = 1-2 days/month<br>0 = Rarely or never |
| Scale score is sum of 4 items; higher score indicates more caregiver-youth shared activities<br>Internal consistency reliability: Cronbach's $\alpha$ = .64 among youth in care in Ontario (Perkins, 2008).<br>Adapted from the National Longitudinal Survey of Children and Youth and the Canadian adaptation of the AAR (Flynn et al., 2006; Statistics Canada & Human Resources Development Canada, 1999). | | | | | |

## Appendix B: Other Measures of Antisocial and Prosocial Behaviours

Table B1 Drug, Alcohol and Cigarette Use During the Past Year

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Smoked cigarettes or used other tobacco products | | |
| Daily | 208 | 27.5 |
| Occasionally | 83 | 11.0 |
| Have tried it | 93 | 12.3 |
| Not at all | 372 | 49.2 |
| Missing data | 119 | 13.6 |
| Drank alcohol | | |
| Daily | 127 | 16.8 |
| Occasionally | 139 | 18.4 |
| Have tried it | 185 | 24.4 |
| Not at all | 306 | 40.4 |
| Missing data | 118 | 13.5 |
| Used Marijuana | | |
| Daily | 50 | 11.2 |
| Occasionally | 154 | 34.5 |
| Tried it | 114 | 25.6 |
| Not at all | 128 | 28.7 |
| Missing data | 429 | 49.0 |
| Drug, Alcohol & Cigarette Use Scale (0-9) | | |
| 0 to 2 | 209 | 19.6 |
| 3 to 5 | 561 | 52.6 |
| 6 to 7 | 297 | 27.8 |
| Missing data | 151 | 12.4 |

*Mdn* = 4.00, *M* = 3.94, *SD* = 1.63, Skewness = 0.01, *SE* = 0.08, Kurtosis = -1.11, *SE* =0.15

Table B2 Other Antisocial Behaviours

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Stays out in the evening past curfew | | |
| Never | 383 | 56.5 |
| Almost Never | 88 | 13.0 |
| Sometimes | 95 | 14.0 |
| Often | 49 | 7.2 |
| Always | 63 | 9.3 |
| Missing data | 197 | 22.5 |
| Number of school suspensions | | |
| 5 times or more | 51 | 6.1 |
| 3 to 4 times | 90 | 10.8 |
| Once or twice | 215 | 25.8 |
| Never | 478 | 57.3 |
| Missing data | 41 | 4.7 |

Table B3 Prosocial Behaviour Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Considerate of other people's feelings | | |
| True | 275 | 35.1 |
| Somewhat true | 478 | 56.9 |
| Not true | 67 | 8.0 |
| Missing data | 35 | 4.0 |
| Shares with others (e.g., books, games or food) | | |
| True | 330 | 39.3 |
| Somewhat true | 409 | 48.7 |
| Not true | 101 | 12.0 |
| Missing data | 35 | 4.0 |
| Helpful if someone is hurt, upset or feeling ill | | |
| Not true | 99 | 11.8 |
| Somewhat true | 337 | 40.3 |
| True | 400 | 47.8 |
| Missing data | 39 | 4.5 |
| Kind to young children | | |
| True | 481 | 58.5 |
| Somewhat true | 286 | 34.8 |
| Not true | 55 | 6.7 |
| Missing data | 53 | 6.1 |
| Often offers to help others (parents, teachers or youths) | | |
| True | 333 | 39.8 |
| Somewhat true | 376 | 45.0 |
| Not true | 127 | 15.2 |
| Missing data | 39 | 4.5 |
| Prosocial Behaviour Scale (0-15) | | |
| 0 to 4 | 139 | 17.1 |
| 5 to 7 | 344 | 42.3 |
| 8 to 10 | 330 | 40.6 |
| Missing data | 62 | 7.1 |

*Mdn* = 7.00, *M* = 6.70, *SD* = 2.40, Skewness = -0.45, *SE* = 0.09, Kurtosis = -0.44, *SE* = 0.17

Table B4 Hope Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| I think I am doing pretty well | | |
| Most of the time | 371 | 56.0 |
| Often | 137 | 20.7 |
| Sometimes | 140 | 21.1 |
| Never | 14 | 2.1 |
| Missing data | 213 | 24.3 |
| I can think of ways to get the things in life that are most important to me | | |
| Most of the time | 341 | 51.8 |
| Often | 165 | 25.1 |
| Sometimes | 132 | 20.1 |
| Never | 20 | 3.0 |
| Missing data | 217 | 24.8 |
| I am doing just as well as other kids my age | | |
| Most of the time | 298 | 45.4 |
| Often | 148 | 22.5 |
| Sometimes | 178 | 27.1 |
| Never | 3 | 5.0 |
| Missing data | 218 | 24.9 |
| When I have a problem I can come up with lots of ways to solve it | | |
| Most of the time | 226 | 34.3 |
| Often | 150 | 22.8 |
| Sometimes | 254 | 38.6 |
| Never | 28 | 4.3 |
| Missing data | 217 | 24.8 |
| I think the things I have done in the past will help me in the future | | |
| Most of the time | 251 | 38.4 |
| Often | 132 | 20.2 |
| Sometimes | 194 | 29.7 |
| Never | 77 | 11.8 |
| Missing data | 221 | 25.3 |

| | | |
|---|---|---|
| Even when others want to quit I know that I can find ways to solve the problem | | |
| Most of the time | 223 | 34.0 |
| Often | 145 | 16.6 |
| Sometimes | 241 | 36.8 |
| Never | 46 | 7.0 |
| Missing data | 220 | 25.1 |
| | | |
| Hope Scale (0-18) | | |
| 0 to 5 | 39 | 6.0 |
| 6 to 12 | 299 | 46.4 |
| 13 to 18 | 307 | 47.6 |
| Missing data | 230 | 26.3 |

*Mdn* = 12.00, *M* = 12.20, *SD* = 4.24, Skewness = -0.35, *SE* = 0.10, Kurtosis = -0.29, *SE* = 0.19

Table B5 Positive Mental Health Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| During the past month how often did you feel happy | | |
| Every day | 171 | 24.7 |
| Almost every day | 312 | 45.1 |
| 2 or 3 times a week | 137 | 19.8 |
| About once a week | 43 | 6.2 |
| Once or twice a month | 17 | 2.5 |
| Never | 12 | 1.7 |
| Missing data | 183 | 20.9 |
| During the past month how often did you feel interested in life | | |
| Every day | 256 | 37.5 |
| Almost every day | 249 | 36.5 |
| 2 or 3 times a week | 100 | 14.7 |
| About once a week | 40 | 5.9 |
| Once or twice a month | 17 | 2.5 |
| Never | 20 | 2.9 |
| Missing data | 193 | 22.1 |
| During the past month how often did you feel satisfied | | |
| Every day | 203 | 29.9 |
| Almost every day | 260 | 38.3 |
| 2 or 3 times a week | 115 | 17.0 |
| About once a week | 49 | 7.2 |
| Once or twice a month | 18 | 2.7 |
| Never | 33 | 4.9 |
| Missing data | 197 | 22.5 |
| During the past month how often did you feel that you had something important to contribute to society | | |
| Every day | 140 | 21.2 |
| Almost every day | 180 | 27.3 |
| 2 or 3 times a week | 111 | 16.8 |
| About once a week | 74 | 11.2 |
| Once or twice a month | 44 | 6.7 |
| Never | 110 | 16.7 |
| Missing data | 216 | 24.7 |

During the past month how often did you feel that you belong to a community (social group, your school or your neighbourhood)

| | | |
|---|---|---|
| Every day | 235 | 34.9 |
| Almost every day | 176 | 26.1 |
| 2 or 3 times a week | 83 | 12.3 |
| About once a week | 45 | 6.7 |
| Once or twice a month | 34 | 5.0 |
| Never | 101 | 15.0 |
| Missing data | 201 | 23.0 |

During the past month how often did you feel that our society is becoming a better place for people like you

| | | |
|---|---|---|
| Every day | 150 | 23.1 |
| Almost every day | 159 | 24.5 |
| 2 or 3 times a week | 78 | 12.0 |
| About once a week | 49 | 7.6 |
| Once or twice a month | 61 | 9.4 |
| Never | 152 | 23.4 |
| Missing data | 226 | 25.8 |

During the past month how often did you feel that people are basically good

| | | |
|---|---|---|
| Every day | 193 | 28.6 |
| Almost every day | 222 | 32.9 |
| 2 or 3 times a week | 123 | 18.2 |
| About once a week | 57 | 8.4 |
| Once or twice a month | 44 | 6.5 |
| Never | 36 | 5.3 |
| Missing data | 200 | 22.9 |

During past month how often did you feel that the way our society works made sense

| | | |
|---|---|---|
| Every day | 151 | 23.7 |
| Almost every day | 155 | 24.3 |
| 2 or 3 times a week | 91 | 14.3 |
| About once a week | 55 | 8.6 |
| Once or twice a month | 45 | 7.1 |
| Never | 140 | 22.0 |
| Missing data | 238 | 27.2 |

During the past month how often did you feel that you liked most part of your personality

| | | |
|---|---|---|
| Every day | 329 | 49.1 |
| Almost every day | 202 | 30.1 |
| 2 or 3 times a week | 77 | 11.5 |
| About once a week | 28 | 4.2 |
| Once or twice a month | 16 | 2.4 |
| Never | 18 | 2.7 |
| Missing data | 205 | 23.4 |

During the past month how often did you feel good at managing the responsibilities of your daily life

| | | |
|---|---|---|
| Every day | 245 | 36.5 |
| Almost every day | 229 | 34.1 |
| 2 or 3 times a week | 114 | 17.0 |
| About once a week | 33 | 4.9 |
| Once or twice a month | 22 | 3.3 |
| Never | 28 | 4.2 |
| Missing data | 204 | 23.3 |

During the past month how often did you feel that you have warm and trusting relationship with other children/youth

| | | |
|---|---|---|
| Every day | 234 | 34.7 |
| Almost every day | 195 | 28.9 |
| 2 or 3 times a week | 118 | 17.5 |
| About once a week | 47 | 7.0 |
| Once or twice a month | 41 | 6.1 |
| Never | 39 | 5.8 |
| Missing data | 201 | 23.0 |

During the past month how often did you feel that you had experiences that challenged you to grow and become better person

| | | |
|---|---|---|
| Every day | 249 | 37.6 |
| Almost every day | 183 | 27.6 |
| 2 or 3 times a week | 105 | 15.9 |
| About once a week | 58 | 8.8 |
| Once or twice a month | 37 | 5.6 |
| Never | 30 | 4.5 |
| Missing data | 213 | 24.3 |

During the past month how often did you feel confident to think or express your own ideas and opinion

| | | |
|---|---|---|
| Every day | 310 | 46.1 |
| Almost every day | 201 | 29.9 |
| 2 or 3 times a week | 82 | 12.2 |
| About once a week | 41 | 6.1 |
| Once or twice a month | 23 | 3.4 |
| Never | 15 | 2.2 |
| Missing data | 203 | 23.2 |

| | | |
|---|---|---|
| During the past month how often did you feel that your life has a sense of direction or meaning to it | | |
| Every day | 245 | 37.6 |
| Almost every day | 191 | 29.3 |
| 2 or 3 times a week | 87 | 13.4 |
| About once a week | 49 | 7.5 |
| Once or twice a month | 36 | 15.5 |
| Never | 43 | 6.6 |
| Missing data | 224 | 25.6 |
| | | |
| Positive Mental Health Scale (0-70) | | |
| 0 to 30 | 67 | 11.5 |
| 31 to 51 | 219 | 37.0 |
| 52 to 70 | 303 | 51.4 |
| Missing data | 286 | 32.7 |

*Mdn* = 52.00, *M* = 49.92, *SD* = 14.12, Skewness = -0.72, *SE* = 0.10, Kurtosis = 0.11, *SE* = 0.20

Table B6 Academic Performance Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Reading and other language arts | | |
| Very well or well | 144 | 17.5 |
| Average | 392 | 47.7 |
| Poor or very poor | 208 | 25.3 |
| Doesn't take it | 77 | 9.4 |
| Missing data | 54 | 6.5 |
| Math | | |
| Very well or well | 106 | 12.9 |
| Average | 376 | 45.6 |
| Poor or very poor | 239 | 29.0 |
| Doesn't take it | 103 | 12.5 |
| Missing data | 51 | 5.8 |
| Science | | |
| Very well or well | 71 | 8.6 |
| Average | 377 | 45.8 |
| Poor or very poor | 170 | 20.7 |
| Doesn't take it | 205 | 24.9 |
| Missing data | 52 | 5.9 |
| Overall | | |
| Very well or well | 114 | 14.8 |
| Average | 456 | 59.1 |
| Poorly or very poorly | 202 | 26.2 |
| Missing data | 103 | 11.8 |
| Academic Performance Scale (0-12) | | |
| 1 to 4 | 184 | 24.6 |
| 5 to 8 | 415 | 55.4 |
| 9 to 12 | 150 | 20.0 |
| Missing data | 126 | 14.4 |

*Mdn* = 8.00, *M* = 6.90, *SD* = 2.48, Skewness = 0.07, *SE* = 0.09, Kurtosis = - 0.49, *SE* = 0.18

Table B7 Self-Esteem Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| I have a lot to be proud of | | |
| Most of the time/always | 443 | 61.3 |
| Sometimes | 227 | 31.4 |
| Rarely/Never | 53 | 7.3 |
| Missing data | 152 | 17.4 |
| I can do things as well as most people | | |
| Most of the time/always | 457 | 63.6 |
| Sometimes | 235 | 32.7 |
| Rarely/Never | 27 | 3.8 |
| Missing data | 156 | 17.8 |
| I am as good as most other people | | |
| Most of the time/always | 463 | 64.3 |
| Sometimes | 225 | 31.3 |
| Rarely/Never | 32 | 4.4 |
| Missing data | 155 | 17.7 |
| Other people think I am a good person | | |
| Most of the time/always | 460 | 64.2 |
| Sometimes | 238 | 33.2 |
| Rarely/Never | 19 | 2.2 |
| Missing data | 158 | 18.1 |
| When I do something, I do it well | | |
| Most of the time/always | 410 | 56.9 |
| Sometimes | 299 | 41.5 |
| Rarely/Never | 12 | 1.7 |
| Missing data | 154 | 17.6 |
| A lot of things about me are good | | |
| Most of the time/always | 491 | 68.0 |
| Sometimes | 209 | 28.9 |
| Rarely/Never | 22 | 3.0 |
| Missing data | 153 | 17.5 |
| Self-Esteem Scale (0-12) | | |
| 0 to 6 | 111 | 15.6 |
| 7 to 10 | 260 | 37.0 |
| 11 to 12 | 333 | 47.3 |
| Missing data | 171 | 19.5 |

*Mdn* = 10.00, *M* = 9.55, *SD* = 2.46, Skewness = -0.86, *SE* = 0.09, Kurtosis = -0.06, *SE* = 0.18

Table B8 Positive Coping Scale—Items and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| I do things to make my problem better | | |
| Most of the time | 213 | 32.3 |
| Often | 147 | 22.3 |
| Sometimes | 271 | 41.5 |
| Never | 26 | 3.9 |
| Missing data | 215 | 24.6 |
| I think about different ways of solving my problem | | |
| Most of the time | 198 | 30.1 |
| Often | 145 | 22.0 |
| Sometimes | 279 | 42.4 |
| Never | 36 | 5.5 |
| Missing data | 217 | 24.8 |
| I take action to improve the situation | | |
| Most of the time | 187 | 28.5 |
| Often | 142 | 21.6 |
| Sometimes | 288 | 43.8 |
| Never | 40 | 6.1 |
| Missing data | 218 | 24.9 |
| I try to learn more about what is causing my problem | | |
| Most of the time | 179 | 27.3 |
| Often | 120 | 18.3 |
| Sometimes | 272 | 41.5 |
| Never | 84 | 12.8 |
| Missing data | 220 | 25.1 |
| Positive Coping Scale (0-12) | | |
| 0 to 4 | 200 | 30.8 |
| 5 to 8 | 242 | 37.2 |
| 9 to 12 | 207 | 31.9 |
| Missing data | 226 | 25.8 |

*Mdn* = 6.00, *M* = 6.92, *SD* = 3.23, Skewness = 0.18, *SE* = 0.10, Kurtosis = -1.01, *SE* = 0.19

Table B9 Items Selected from the Developmental Assets Scale

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Serves Others in the Community on Regular Basis | | |
| Yes | 200 | 32.9 |
| Uncertain | 407 | 67.1 |
| Missing data | 268 | 30.6 |
| Seeks to Resolve Conflicts Non-Violently | | |
| Yes | 436 | 60.4 |
| Uncertain | 286 | 39.6 |
| Missing data | 153 | 17.5 |
| Places High Value on Helping Other People | | |
| Yes | 428 | 58.0 |
| Uncertain | 310 | 42.0 |
| Missing data | 137 | 15.7 |
| Has Empathy, Sensitivity and Friendship Skills | | |
| Yes | 563 | 73.0 |
| Uncertain | 208 | 27.0 |
| Missing data | 104 | 11.7 |

## Appendix C: Other Measures of Group Home and Neighbourhood Resources

Table C1 Child Welfare Worker Education and Work Experience

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Workers' Education | | |
| Master's degree | 195 | 22.8 |
| Bachelor degree | 570 | 66.4 |
| College certificate or diploma | 85 | 9.9 |
| No college or university | 7 | 0.9 |
| Missing data | 18 | 2.1 |
| Child Welfare Worker Experience (Years Worked in Child Welfare) | | |
| < 1 year | 18 | 2.1 |
| 1 to 3 | 137 | 16.1 |
| 4 to 9 | 328 | 38.5 |
| 10 or more | 370 | 43.4 |
| Missing data | 22 | 2.5 |

Table C2 Relationship with Caregiver (Foster Parent) Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| How well foster parent understands youth | | |
| A great deal | 433 | 61.3 |
| Some | 223 | 31.6 |
| Very little | 50 | 7.1 |
| Missing data | 169 | 19.3 |
| How much fairness youth receives from foster parent | | |
| A great deal | 507 | 71.4 |
| Some | 173 | 24.4 |
| Very little | 30 | 4.2 |
| Missing data | 165 | 18.9 |
| The amount of affection youth receives from foster parent | | |
| A great deal | 362 | 51.6 |
| Some | 239 | 34.1 |
| Very little | 100 | 14.3 |
| Missing data | 174 | 19.9 |
| Overall how would you describe your relationship with him/her | | |
| Very close | 314 | 44.7 |
| Some | 309 | 44.0 |
| Very little | 80 | 19.7 |
| Missing data | 172 | 19.7 |
| Relationship with Caregiver Scale (0-8) | | |
| 0 to 2 | 58 | 8.4 |
| 3 to 5 | 188 | 27.3 |
| 6 to 8 | 442 | 64.2 |
| Missing data | 187 | 21.4 |

*Mdn* = 7.00, *M* = 5.93, *SD* = 2.11, Skewness = -0.98, *SE* = 0.09, Kurtosis = 0.21, *SE* =0.19

Table C3 Placement Satisfaction Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| You feel safe living in this home | | |
| A great deal | 488 | 67.4 |
| Some | 188 | 26.0 |
| Very little | 48 | 6.6 |
| Missing data | 151 | 17.3 |
| You will be pleased if you were to live here for a long time | | |
| A great deal | 214 | 29.7 |
| Some | 160 | 22.2 |
| Very little | 346 | 48.1 |
| Missing data | 155 | 17.7 |
| You are satisfied with the amount of privacy you have here | | |
| A great deal | 390 | 53.9 |
| Some | 206 | 28.5 |
| Very little | 128 | 17.7 |
| Missing data | 151 | 17.3 |
| You have a good relationship with other people with whom you are living | | |
| A great deal | 327 | 45.2 |
| Some | 319 | 44.1 |
| Very little | 78 | 10.8 |
| Missing data | 151 | 17.3 |
| You like living here | | |
| A great deal | 285 | 39.3 |
| Some | 276 | 38.1 |
| Very little | 164 | 22.6 |
| Missing data | 150 | 17.1 |
| Placement Satisfaction Scale (0-10) | | |
| 0 to 3 | 127 | 17.8 |
| 4 to 6 | 234 | 32.8 |
| 7 to 10 | 352 | 49.3 |
| Missing data | 162 | 18.5 |

*Mdn* = 6.00, *M* = 6.32, *SD* = 2.83, Skewness = 0.35, *SE* = 0.09, Kurtosis = - 0.83, *SE* = 0.18

Table C4 Shared Activities Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Eat together | | |
| Everyday | 591 | 67.5 |
| 3-6 days per week | 172 | 20.5 |
| 1-2 days per week | 41 | 4.9 |
| 1-2 times per month | 21 | 1.7 |
| Rarely | 21 | 2.5 |
| Missing data | 36 | 4.1 |
| Have discussion together | | |
| Everyday | 611 | 73.3 |
| 3-6 days per week | 161 | 19.3 |
| 1-2 days per week | 52 | 6.2 |
| 1-2 times per month | 4 | .5 |
| Rarely | 5 | .6 |
| Missing data | 42 | 4.8 |
| Have outings/entertainment together | | |
| Everyday | 122 | 14.6 |
| 3-6 days per week | 241 | 28.9 |
| 1-2 days per week | 388 | 40.5 |
| 1-2 times per month | 92 | 11.0 |
| Rarely | 41 | 4.9 |
| Missing data | 41 | 4.7 |
| Participate in ceremonies cultural activities together | | |
| Everyday | 72 | 8.9 |
| 3-6 days per week | 55 | 6.8 |
| 1-2 days per week | 113 | 14.0 |
| 1-2 times per month | 243 | 30.1 |
| Rarely | 323 | 40.1 |
| Missing data | 69 | 7.9 |
| Shared Activities Scale (0-10) | | |
| 0 to 9 | 223 | 28.2 |
| 10 to12 | 398 | 50.3 |
| 13 to 16 | 170 | 21.5 |
| Missing data | 83 | 9.5 |

*Mdn* = 11.00, *M* = 10.68, *SD* = 2.73, Skewness = 0.51, *SE* = 0.09, Kurtosis = 0.92, *SE* = 0.17

Table C5 Foster Parenting Scale—Item and Summary Scores

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| *Positive Parenting Subscale* | | |
| Caregiver lets a youth know if he/she is doing a good job | | |
| Everyday | 626 | 76.1 |
| 3-6 days per/week | 169 | 19.3 |
| 1-2 days per/week | 21 | 2.6 |
| 1-2 times per/month | 2 | .6 |
| Rarely or never | 5 | .6 |
| Missing data | 52 | 5.9 |
| Caregiver compliments youth when he/she did something well | | |
| Everyday | 648 | 77.1 |
| 3-6 days per/week | 165 | 19.6 |
| 1-2 days per/week | 23 | 2.7 |
| 1-2 times per/month | 2 | .2 |
| Rarely or never | 6 | .7 |
| Missing data | 35 | 4.0 |
| Caregiver praises youth for behaving well | | |
| Everyday | 636 | 76.2 |
| 3-6 days per/week | 174 | 20.8 |
| 1-2 days per/week | 17 | 2.0 |
| 1-2 times per/month | 2 | .6 |
| Rarely or never | 2 | .2 |
| Missing data | 40 | 4.6 |
| Positive Parenting Subscale (0-12) | | |
| 0 to 7 | 25 | 3.1 |
| 8 to 10 | 161 | 19.8 |
| 11 to 12 | 628 | 77.1 |
| Missing data | 61 | 7.0 |
| *Mdn* = 6.00, *M* = 7.00, *SD* = 6.20, Skewness = 1.01, *SE* = 0.09, Kurtosis = 0.69, *SE* =0.18 | | |
| *Inconsistent Discipline Subscale* | | |
| Caregiver does not follow through with plans to discipline a youth | | |
| Everyday | 109 | 13.6 |
| 3-6 days per/week | 47 | 5.9 |
| 1-2 days per/week | 71 | 8.8 |
| 1-2 times per/month | 171 | 21.3 |
| Rarely or never | 405 | 50.4 |
| Missing data | 72 | 8.2 |

| | | |
|---|---|---|
| Youth talks caregiver out of being disciplined after doing something wrong | | |
| Everyday | 78 | 9.9 |
| 3-6 days per/week | 58 | 7.3 |
| 1-2 days per/week | 97 | 12.3 |
| 1-2 times per/month | 147 | 18.6 |
| Rarely or never | 410 | 51.9 |
| Missing data | 85 | 9.7 |
| | | |
| Caregiver fails to discipline youth as originally planned | | |
| Everyday | 39 | 4.9 |
| 3-6 days per/week | 23 | 2.9 |
| 1-2 days per/week | 187 | 23.5 |
| 1-2 times per/month | 214 | 26.9 |
| Rarely or never | 334 | 41.9 |
| Missing data | 78 | 8.9 |
| | | |
| Inconsistent Discipline Subscale (0-12) | | |
| 0 to 3 | 480 | 61.5 |
| 4 to 7 | 216 | 27.6 |
| 8 to 12 | 84 | 10.8 |
| Missing data | 95 | 10.9 |

*Mdn* = 3.00, *M* = 3.19, *SD* = 3.05, Skewness = 1.01, *SE* = 0.09, Kurtosis = 0.46, *SE* = 0.17

| | | |
|---|---|---|
| *Poor Supervision Subscale* | | |
| Youth fails to let his/her caregiver know of his/her whereabouts | | |
| Everyday | 80 | 10.5 |
| 3-6 days per/week | 54 | 7.1 |
| 1-2 days per/week | 100 | 13.2 |
| 1-2 times per/month | 100 | 13.2 |
| Rarely or never | 426 | 56.1 |
| Missing data | 115 | 13.1 |
| | | |
| Youth stays out in the evening past the time he/she is supposed to be home | | |
| Everyday | 71 | 9.1 |
| 3-6 days per/week | 49 | 6.3 |
| 1-2 days per/week | 90 | 11.6 |
| 1-2 times per/month | 108 | 13.9 |
| Rarely or never | 461 | 59.2 |
| Missing data | 96 | 11. |
| | | |
| Youth is out with friends caregiver does not know | | |
| Everyday | 81 | 10.3 |
| 3-6 days per/week | 50 | 6.4 |
| 1-2 days per/week | 113 | 14.4 |
| 1-2 times per/month | 102 | 13.0 |
| Rarely or never | 438 | 55.9 |
| Missing data | 91 | 10.4 |

| | | |
|---|---|---|
| Poor Supervision Subscale (0-12) | | |
| 0 to 2 | 453 | 60.1 |
| 3 to 6 | 162 | 21.5 |
| 7 to 12 | 138 | 18.4 |
| Missing data | 122 | 13.9 |

*Mdn* = 1.00, *M* = 2.97, *SD* = 3.79, Skewness = 1.16, *SE* = 0.09, Kurtosis = 0.15, *SE* = 0.17

| | | |
|---|---|---|
| Overall Foster Parenting Scale (0-36) | | |
| 0 to 6 | 421 | 57.1 |
| 7 to 15 | 243 | 32.7 |
| 16 to 36 | 75 | 10.1 |
| Missing data | 136 | 15.5 |

*Mdn* = 6.00, *M* = 7.00, *SD* = 6.20, Skewness = 1.01, *SE* = 0.09, Kurtosis = 0.14, *SE* = 0.17

Table C6 Other Group Home Resources

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Caregivers and Other Adults Model Positive Responsible Behaviour | | |
| Yes | 819 | 97.5 |
| Uncertain | 21 | 2.5 |
| Missing data | 35 | 4.0 |
| Caregiver is Actively Involved in Helping Youth to Succeed in School | | |
| Yes | 818 | 97.1 |
| Uncertain | 24 | 2.9 |
| Missing data | 33 | 3.8 |
| Both Caregiver and Teachers Encourage Youth to Do Well | | |
| Yes | 840 | 98.8 |
| Uncertain | 10 | 1.2 |
| Missing data | 25 | 2.9 |
| Caregivers and Youth Communicate Positively | | |
| Yes | 714 | 88.3 |
| Uncertain | 95 | 10.9 |
| Missing data | 66 | 7.5 |
| Caregivers Provides High Level of Love and Support | | |
| Yes | 784 | 93.0 |
| Uncertain | 59 | 7.0 |
| Missing data | 32 | 3.7 |

Table C7 Other Neighbourhood Resources: Items Selected from the Developmental Assets Scale

| Variable Categories | Sample Size | Valid Percent |
|---|---|---|
| Youth experiences caring neighbourhood | | |
| Yes | 279 | 35.8 |
| Uncertain | 500 | 64.2 |
| Missing data | 96 | 11.0 |
| Youth feels safe at home, school, and in the neighbourhood | | |
| Yes | 737 | 89.4 |
| Uncertain | 87 | 10.6 |
| Missing data | 51 | 5.8 |
| Neighbours help monitor youth's behaviour | | |
| Yes | 185 | 27.6 |
| Uncertain | 486 | 72.4 |
| Missing data | 204 | 23.3 |

## Appendix D: Preliminary Baseline Models

**Table D1 Logistic Regressions of Positive Peer Influence, Group Home Size and Gender on the Antisocial Behavior of Scored High on the Conduct Problem Scale (30.6%)[a] among 749 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.0 | | | 1.00[b] | . . . |
| High (4 to 10) | 47.0 | **.913**[*] | .157 | **2.49** | 1.83, 3.39 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.6 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.3 | **- 1.468**[*] | .182 | **0.23** | 0.16, 0.33 |
| High (8 to 10) | 25.1 | **- 2.900**[*] | .297 | **0.06** | 0.03, 0.10 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.1 | | | 1.00[b] | . . . |
| Less than 8 | 85.9 | .044 | .227 | 1.05 | 0.67, 1.63 |
| Gender | | | | | |
| Female | 33.5 | | | 1.00[b] | . . . |
| Male | 66.5 | - .183 | .159 | 0.83 | 0.61, 1.14 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.3 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.7 | **.399**[*] | .185 | **1.49** | 1.04, 2.14 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.4 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.0 | **- 1.408**[*] | .194 | **0.25** | 0.17, 0.36 |
| High (8 to 10) | 25.6 | **- 2.795**[*] | .315 | **0.06** | 0.03, 0.11 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.0 | | | 1.00[b] | . . . |
| Less than 8 | 86.0 | .190 | .254 | 1.21 | 0.73, 1.99 |
| Gender | | | | | |
| Female | 33.0 | | | 1.00[b] | . . . |
| Male | 66.0 | - .103 | .190 | 0.90 | 0.62, 1.31 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- 1.040**[*] | .126 | | |

**Models 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 644) | | | | 8 or more Youths in Home ($N$ = 105) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 25.0 | 1.00[b] | . . . | Low (0 to 4) | 27.6 | 1.00 | . . . |
| Mid (5 to 7) | 48.4 | **0.26** | 0.17, 0.39 | Mid (5 to 7) | 52.4 | **0.18** | 0.07, 0.50 |
| High (8 to 10) | 26.6 | **0.07** | 0.04, 0.13 | High (8 to 10) | 20.0 | **0.03** | 0.00, 0.30 |

**Model 6**

***Positive Peer Influence by Group Home Size by Gender Interaction***

**- .751**[*] .133

**Models 7 and 8: Boys**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 434) | | | | 8 or more Youths in Home ($N$ = 68) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 22.8 | 1.00[b] | . . . | Low (0 to 4) | 26.5 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.5 | **0.24** | 0.14, 0.40 | Mid (5 to 7) | 51.5 | **0.16** | 0.05, 0.59 |
| High (8 to 10) | 26.7 | **0.06** | 0.03, 0.14 | High (8 to 10) | 22.1 | **0.05** | 0.01, 0.47 |

**Models 9 and 10: Girls**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 210) | | | | 8 or more Youths in Home ($N$ = 37) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 29.5 | 1.00[b] | . . . | Low (0 to 4) | 29.7 | 1.00[b] | . . . |
| Mid (5 to 7) | 44.3 | **0.30** | 0.15, 0.60 | Mid (5 to 7) | 54.1 | **0.22**[c] | 0.04, 1.29 |
| High (8 to 10) | 26.2 | **0.07** | 0.02, 0.21 | High (8 to 10) | 16.2 | Unstable model | |

**Models 11 and 12: Girls**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 210) | | | | 8 or more Youths in Home ($N$ = 37) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 45.2 | 1.00[b] | . . . | Low (0 to 5) | 43.2 | 1.00[b] | . . . |
| High (6 to 10) | 54.8 | **0.20** | 0.10, 0.38 | High (6 to 10) | 56.8 | **0.15** | 0.03, 0.84 |

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*Notes*. All models except 1a to 1d were adjusted for the confounding influence emotional symptoms. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Scored in the upper tertile on the Conduct Problem Scale (CPS).

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table D2 Logistic Regressions of Negative Peer Influence and Group Home Size on the Antisocial Behavior of Scored High on the Conduct Problem Scale (30.6%)[a] among 601 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1** | | | | | |
| ***Main Predictor Unadjusted*** | | | | | |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.6 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 28.6 | .005 | .225 | 1.01 | 0.65, 1.56 |
| High (7 to 15) | 34.8 | **.448*** | .205 | **1.57** | 1.05, 2.34 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.7 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.3 | **.942*** | .187 | **2.57** | 1.78, 3.70 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.6 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.0 | .021 | .237 | 1.02 | 0.64, 1.63 |
| High (7 to 15) | 34.4 | **-.360** | .218 | **1.43[c]** | 0.94, 2.20 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.1 | | | 1.00[b] | . . . |
| Less than 8 | 85.9 | .129 | .270 | 1.14 | 0.67, 1.93 |

*Notes*. Model 2 was adjusted for the confounding influence of emotional symptoms. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Scored in the upper tertile on the Conduct Problem Scale (CPS).

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

* Statistically significant regression coefficient ($p < .05$).

## Appendix E: Predictors of Antisocial Behaviours: Baseline Replications

**Table E1 Logistic Regressions of Positive Peer Influence, Group Home Size and Gender on the Antisocial Behavior of "Often Loses Temper" (29.7%)[a] among 758 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 52.7 | | | 1.00[b] | . . . |
| High (4 to 10) | 47.3 | **.768**[*] | .156 | **2.16** | 1.59, 2.92 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.9 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.0 | **- .753**[*] | .176 | **0.47** | 0.33, 0.67 |
| High (8 to 10) | 25.1 | **- 1.595**[*] | .238 | **0.20** | 0.13, 0.32 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.2 | | | 1.00[b] | . . . |
| Less than 8 | 85.8 | .332 | .236 | 1.39 | 0.88, 2.21 |
| Gender | | | | | |
| Female | 33.7 | | | 1.00[b] | . . . |
| Male | 66.3 | **-.540** | .156 | **0.58** | 0.43, 0.79 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 52.9 | | | 1.00[b] | . . . |
| High (4 to 10) | 47.1 | **.421**[*] | .175 | **1.52** | 1.08, 2.15 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.5 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.8 | **- .679**[*] | .191 | **0.51** | 0.35, 0.74 |
| High (8 to 10) | 25.7 | **- 1.467**[*] | .257 | **0.23** | 0.14, 0.38 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.0 | | | 1.00[b] | . . . |
| Less than 8 | 86.0 | .392 | .249 | 1.48 | 0.91, 2.41 |
| Gender | | | | | |
| Female | 33.0 | | | 1.00[b] | . . . |
| Male | 67.0 | **-.546**[*] | .175 | **0.58** | 0.41, 0.82 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- .444**[*] | .113 | | |

**Models 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 652) | | | | 8 or more Youths in Home ($N$ = 106) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 25.0 | 1.00[b] | . . . | Low (0 to 4) | 28.3 | 1.00 | . . . |
| Mid (5 to 7) | 48.3 | **0.55** | 0.37, 0.83 | Mid (5 to 7) | 51.9 | **0.26** | 0.09, 0.75 |
| High (8 to 10) | 26.7 | **0.27** | 0.16, 0.45 | High (8 to 10) | 19.8 | **0.05** | 0.01, 0.41 |

**Model 6**

***Positive Peer Influence by Group Home Size by Gender Interaction***

**.278**[*] .105

**Models 7 and 8: Boys**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 439) | | | | 8 or more Youths in Home ($N$ = 69) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 23.0 | 1.00[b] | . . . | Low (0 to 4) | 27.5 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.3 | **0.59** | 0.36, 0.98 | Mid (5 to 7) | 50.7 | **0.23** | 0.06, 0.90 |
| High (8 to 10) | 26.7 | **0.28** | 0.14, 0.56 | High (8 to 10) | 21.7 | **0.07** | 0.01, 0.72 |

**Models 9 and 10: Girls**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 213) | | | | 8 or more Youths in Home ($N$ = 37) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 29.1 | 1.00[b] | . . . | Low (0 to 4) | 29.7 | 1.00[b] | . . . |
| Mid (5 to 7) | 44.1 | **0.49** | 0.25, 0.96 | Mid (5 to 7) | 54.1 | 0.34 | 0.06, 1.91 |
| High (8 to 10) | 26.8 | **0.24** | 0.10, 0.55 | High (8 to 10) | 16.2 | Unstable model | |

**Models 11 and 12: Girls**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 213) | | | | 8 or more Youths in Home ($N$ = 37) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 44.6 | 1.00[b] | . . . | Low (0 to 5) | 43.2 | 1.00[b] | . . . |
| High (6 to 10) | 55.4 | **0.53** | 0.30, 0.95 | High (6 to 10) | 56.8 | 0.45 | 0.10, 2.12 |

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*Notes*. All models except 1a to 1d were adjusted for the confounding influence of emotional symptoms. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "true."

[b] Baseline comparison group.

[*] Statistically significant regression coefficient ($p < .05$)

**Table E2 Logistic Regressions of Negative Peer Influence, Group Home Size and Gender on the Antisocial Behavior of "Often Loses Temper" (29.7%)[a] among 607 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | SEβ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.9 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.0 | .192 | .225 | 1.21 | 0.78, 1.88 |
| High (7 to 15) | 34.1 | **.634**[*] | .207 | **1.89** | 1.26, 2.83 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.4 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.6 | **.766**[*] | .193 | **2.15** | 1.47, 3.14 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.6 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.3 | .182 | .241 | 1.20 | 0.75, 1.92 |
| High (7 to 15) | 34.1 | **.563**[*] | .224 | **1.76** | 1.13, 2.73 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.2 | | | 1.00[b] | . . . |
| Less than 8 | 85.8 | **.626**[*] | .297 | **1.87** | 1.04, 3.35 |
| Gender | | | | | |
| Female | 33.8 | | | 1.00[b] | . . . |
| Male | 66.2 | **-.578**[*] | .197 | **0.56** | 0.38, 0.83 |
| **Model 3** | | | | | |
| ***Negative Peer Influence by Group Home Size Interaction*** | | **.278**[*] | .105 | | |

**Models 4 and 5**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 521) | | | | 8 or more Youths in Home ($N$ = 86) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 37.2 | 1.00[b] | . . . | Low (0 to 2) | 32.6 | 1.00 | . . . |
| Mid (3 to 6) | 29.0 | 1.17 | 0.71, 1.92 | Mid (3 to 6) | 31.4 | 2.21 | 0.43, 10.45 |
| High (7 to 15) | 33.8 | **1.71** | 1.07, 2.73 | High (7 to 15) | 36.0 | 3.32 | 0.73, 15.09 |

*Notes*. All models except 1a were adjusted for the confounding influence of emotional symptoms and gender. Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant). [a] Included those who responded "true." [b] Baseline comparison group. [*] Statistically significant regression coefficient ($p < .05$).

**Table E3 Logistic Regressions of Positive and Negative Peer Influences, Group Home Size and Gender on the Antisocial Behavior of "Often Loses Temper" (29.7%)[a] among 600 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | SEβ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.3 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.7 | **- .423*** | .207 | **1.53** | 1.02, 2.29 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 24.8 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.5 | **-.863*** | .222 | **0.42** | 0.27, 0.65 |
| High (8 to 10) | 26.7 | **-1.623*** | .297 | **0.20** | 0.11, 0.36 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.5 | .194 | .247 | 1.22 | 0.74, 1.97 |
| High (7 to 15) | 33.7 | **.650*** | .234 | **1.92** | 1.21, 3.03 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.8 | | | 1.00[b] | . . . |
| Less than 8 | 86.2 | **.682*** | .309 | **1.98** | 1.08, 3.63 |
| Gender | | | | | |
| Female | 33.7 | | | 1.00[b] | . . . |
| Male | 66.3 | **- .620*** | .206 | **0.54** | 0.49, 1.12 |
| **Model 2** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | **- .457*** | .131 | | |

**Models 3 and 4**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home (*N* = 517) | | | | 8 or more Youths in Home (*N* = 83) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 24.5 | 1.00[b] | . . . | Low (0 to 4) | 26.5 | 1.00 | . . . |
| Mid (5 to 7) | 48.2 | **0.47** | 0.29, 0.74 | Mid (5 to 7) | 50.6 | **0.14** | 0.03, 0.59 |
| High (8 to 10) | 27.3 | **0.23** | 0.12, 0.42 | High (8 to 10) | 22.9 | **0.03** | 0.00, 0.36 |

| | | | |
|---|---|---|---|
| **Model 5** | | | |
| ***Negative Peer Influence by Group Home Size Interaction*** | **- .328*** | .110 | |

**Models 6 and 7**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 517) | | | | 8 or more Youths in Home ($N$ = 83) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 37.3 | 1.00[b] | . . . | Low (0 to 2) | 33.7 | 1.00 | . . . |
| Mid (3 to 6) | 29.2 | 1.15 | 0.69, 1.92 | Mid (3 to 6) | 31.3 | 3.57 | 0.63, 20.29 |
| High (7 to 15) | 33.5 | **1.83** | 1.13, 2.97 | High (7 to 15) | 35.0 | **4.85**[c] | 0.94, 25.07 |

*Notes*. All models were adjusted for the confounding influence emotional symptoms and gender. Positive peer influence was adjusted for negative per influence and vice versa in each model. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table E4 Logistic Regressions of Positive Peer Influence, Group Home Size and Gender on the Antisocial Behavior of "Fights with or Bullies Others" (56.1%)[a] among 761 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 52.7 | | | 1.00[b] | . . . |
| High (4 to 10) | 47.3 | **.625**[*] | .145 | **1.87** | 1.41, 2.47 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.8 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.9 | **- .986**[*] | .192 | **0.37** | 0.26, 0.54 |
| High (8 to 10) | 25.3 | **- 1.921**[*] | .220 | **0.15** | 0.10, 0.22 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.0 | | | 1.00[b] | . . . |
| Less than 8 | 86.0 | - .107 | .209 | 0.90 | 0.60, 1.35 |
| Gender | | | | | |
| Female | 33.8 | | | 1.00[b] | . . . |
| Male | 66.2 | - .146 | .074 | 0.86 | 0.65, 1.15 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.0 | | | 1.00[b] | . . . |
| High (4 to 10) | 47.0 | .238 | .163 | 1.27 | 0.92, 1.75 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.4 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.8 | **- .832**[*] | .202 | **0.44** | 0.29, 0.65 |
| High (8 to 10) | 25.0 | **- 1.748**[*] | .235 | **0.17** | 0.11, 0.28 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.0 | | | 1.00[b] | . . . |
| Less than 8 | 86.0 | .048 | .222 | 1.05 | 0.68, 1.62 |
| Gender | | | | | |
| Female | 33.0 | | | 1.00[b] | . . . |
| Male | 66.0 | - .145 | .168 | 0.87 | 0.62, 1.20 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- .657**[*] | .103 | | |

**Models 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 655) | | | | 8 or more Youths in Home ($N$ = 106) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 24.9 | 1.00[b] | . . . | Low (0 to 4) | 28.3 | 1.00 | . . . |
| Mid (5 to 7) | 48.2 | **0.53** | 0.35, 0.81 | Mid (5 to 7) | 51.9 | **0.10** | 0.03, 0.39 |
| High (8 to 10) | 26.9 | **0.20** | 0.12, 0.33 | High (8 to 10) | 19.8 | **0.06** | 0.01, 0.28 |

**Model 6**

***Positive Peer Influence by Group Home Size by Gender Interaction***

**- .317**[*] .125

**Models 7 and 8: Boys**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 441) | | | | 8 or more Youths in Home ($N$ = 69) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 22.9 | 1.00[b] | . . . | Low (0 to 4) | 27.5 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.1 | **0.56** | 0.34, 0.94 | Mid (5 to 7) | 50.7 | **0.21** | 0.09, 0.85 |
| High (8 to 10) | 27.0 | **0.24** | 0.13, 0.43 | High (8 to 10) | 21.7 | **0.13** | 0.03, 0.71 |

**Models 9 and 10: Girls**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 214) | | | | 8 or more Youths in Home ($N$ = 37) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 29.0 | 1.00[b] | . . . | Low (0 to 4) | 29.7 | 1.00[b] | . . . |
| Mid (5 to 7) | 44.4 | **0.47** | 0.22, 1.00 | Mid (5 to 7) | 54.1 | Unstable | |
| High (8 to 10) | 26.6 | **0.13** | 0.06, 0.31 | High (8 to 10) | 16.2 | Model | |

**Models 11 and 12: Girls**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 214) | | | | 8 or more Youths in Home ($N$ = 37) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 44.4 | 1.00[b] | . . . | Low (0 to 5) | 43.2 | 1.00[b] | . . . |
| High (6 to 10) | 55.6 | **0.41** | 0.22, 0.74 | High (6 to 10) | 56.8 | **0.14** | 0.03, 0.73 |

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*Notes*. All models except 1a to 1d were adjusted for the confounding influence emotional symptoms. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "somewhat true" or "true."

[b] Baseline comparison group.

[*] Statistically significant regression coefficient ($p < .05$).

**Table E5 Logistic Regressions of Negative Peer Influence and Group Home Size on the Antisocial Behavior of "Fights with or Bullies Others" (56.1%)[a] among 611 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | SEβ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1** | | | | | |
| ***Main Predictor Unadjusted*** | | | | | |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.0 | .026 | .193 | 1.03 | 0.70, 1.50 |
| High (7 to 15) | 34.2 | **.544**[*] | .189 | **1.72** | 1.19, 2.50 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.4 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.6 | **.543**[*] | .167 | **1.72** | 1.24, 2.39 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.5 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.5 | .061 | .202 | 1.06 | 0.72, 1.58 |
| High (7 to 15) | 34.0 | **.582**[*] | .200 | **1.79** | 1.21, 2.65 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.1 | | | 1.00[b] | . . . |
| Less than 8 | 85.9 | - .079 | .240 | 0.92 | 0.58, 1.48 |
| **Model 3** | | | | | |
| ***Negative Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **.172**[c] | .095 | | |

**Models 4 and 5**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 525) | | | | 8 or more Youths in Home ($N$ = 86) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 37.1 | 1.00[b] | . . . | Low (0 to 2) | 32.6 | 1.00 | . . . |
| Mid (3 to 6) | 29.1 | 1.09 | 0.71, 1.67 | Mid (3 to 6) | 31.4 | 1.04 | 0.36, 3.03 |
| High (7 to 15) | 33.7 | **1.63** | 1.07, 2.47 | High (7 to 15) | 36.0 | **3.75** | 1.19, 11.85 |

*Notes*. All models except model 1 was adjusted for the confounding influence emotional symptoms. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant). [a] Included those who responded "somewhat true" or "true." [b] Baseline comparison group. [c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table E6 Logistic Regressions Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of "Fights with or Bullies Others" (56.1%)[a] among 604 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Emotional Symptom Scale | | | | | |
| Low (0 to 3) | 53.3 | | | 1.00[b] | . . . |
| High (4 to 10) | 46.7 | .174 | .183 | 1.19 | 0.83, 1.70 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 24.7 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.5 | **- .733**[*] | .231 | **0.48** | 0.31, 0.76 |
| High (8 to 10) | 26.8 | **- 1.860**[*] | .270 | **0.16** | 0.09, 0.26 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.6 | .070 | .212 | 1.07 | 0.71, 1.63 |
| High (7 to 15) | 33.6 | **.712**[*] | .214 | **2.04** | 1.34, 3.10 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.7 | | | 1.00[b] | . . . |
| Less than 8 | 86.3 | .045 | .255 | 1.05 | 0.64, 1.72 |
| **Model 2** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | **- .691**[*] | .118 | | |

**Models 3 and 4**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 521) | | | | 8 or more Youths in Home ($N$ = 83) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 24.4 | 1.00[b] | . . . | Low (0 to 4) | 26.5 | 1.00 | . . . |
| Mid (5 to 7) | 48.2 | **0.59** | 0.37, 0.95 | Mid (5 to 7) | 50.6 | **0.08** | 0.01, 0.43 |
| High (8 to 10) | 27.4 | **0.19** | 0.11, 0.33 | High (8 to 10) | 22.9 | **0.02** | 0.00, 0.18 |

| | | | |
|---|---|---|---|
| **Model 5** | | | |
| ***Negative Peer Influence by Group Home Size Interaction*** | **.251**[*] | .102 | |

**Models 6 and 7**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 521) | | | | 8 or more Youths in Home ($N$ = 83) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 37.2 | 1.00[b] | . . . | Low (0 to 2) | 33.7 | 1.00 | . . . |
| Mid (3 to 6) | 29.4 | 1.07 | 0.69, 1.68 | Mid (3 to 6) | 31.3 | 1.52 | 0.43, 5.38 |
| High (7 to 15) | 33.4 | **1.84** | 1.18, 2.86 | High (7 to 15) | 34.9 | **6.20** | 1.51, 25.55 |

*Notes*. All models were adjusted for the confounding influence emotional symptoms. Positive peer influence was adjusted for negative per influence and vice versa in each model. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "somewhat true" or "true."

[b] Baseline comparison group.

[*] Statistically significant regression coefficient ($p < .05$).

## Appendix F: Predictors of Prosocial Behaviours: Baseline Replications

**Table F1 Logistic Regressions of Positive and Negative Peer Influences, Group Home Size and Gender on the Prosocial Behavior of Scored High on the Prosocial Behaviour Scale (28.2%)[a] among 596 Youths 10 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 25.7 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.0 | **.647*** | .221 | **1.91** | 1.24, 2.95 |
| High (8 to 10) | 25.3 | **1.406*** | .237 | **4.08** | 2.57, 6.49 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.2 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 29.4 | - .045 | .210 | 0.96 | 0.63, 1.44 |
| High (7 to 15) | 34.4 | - .242 | .206 | 0.79 | 1.52, 1.18 |
| Number of youths residing in group home | | | | | |
| 8 or more | 14.2 | | | 1.00[b] | . . . |
| Less than 8 | 85.8 | **.635*** | .262 | **1.89** | 1.13, 3.15 |
| Gender | | | | | |
| Female | 33.9 | | | 1.00[b] | . . . |
| Male | 66.1 | - **.404*** | .161 | **0.67** | 0.49, 0.92 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 24.7 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 48.7 | **.726*** | .257 | **2.07** | 1.25, 3.42 |
| High (8 to 10) | 26.7 | **1.451*** | .275 | **4.27** | 2.49, 7.32 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 36.4 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 30.0 | - .134 | .225 | 0.88 | 0.56, 1.36 |
| High (7 to 15) | 33.6 | - .354 | .225 | 0.70 | 0.45, 1.09 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.6 | | | 1.00[b] | . . . |
| Less than 8 | 86.4 | .472 | .291 | 1.60 | 0.91, 2.84 |
| Gender | | | | | |
| Female | 34.2 | | | 1.00[b] | . . . |
| Male | 65.8 | - **.406*** | .194 | **0.63** | 0.43, 0.92 |

Table F1 (continued)

| | Regression Statistic | |
|---|---|---|
| | β | $SE_\beta$ |
| **Model 3** | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | |
| | **.719*** | .123 |
| **Models 4 and 5** | | |
| ***Positive Peer Influence within Group Home Strata*** | | |

| Less than 8 Youths in Home ($N$ = 515) | | | | 8 or more Youths in Home ($N$ = 81) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 24.5 | 1.00[b] | . . . | Low (0 to 4) | 25.9 | 1.00 | . . . |
| Mid (5 to 7) | 48.1 | **2.00** | 1.17, 3.41 | Mid (5 to 7) | 51.9 | 2.23 | 0.53, 9.28 |
| High (8 to 10) | 27.4 | **4.49** | 2.55, 7.94 | High (8 to 10) | 22.2 | 1.69 | 0.32, 8.97 |

**Model 6**

***Positive Peer Influence by Group Home Size by Gender Interaction***

| | | |
|---|---|---|
| | **.236*** | .115 |

**Models 7 and 8: Boys**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 341) | | | | 8 or more Youths in Home ($N$ = 51) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 23.2 | 1.00[b] | . . . | Low (0 to 4) | 21.6 | 1.00[b] | . . . |
| Mid (5 to 7) | 48.4 | **2.27** | 1.12, 4.57 | Mid (5 to 7) | 54.9 | 0.18 | 0.19, 7.26 |
| High (8 to 10) | 28.4 | **4.01** | 1.91, 8.39 | High (8 to 10) | 23.5 | 0.81 | 0.09, 7.34 |

**Models 9 and 10: Girls**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 174) | | | | 8 or more Youths in Home ($N$ = 30) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 27.0 | 1.00[b] | . . . | Low (0 to 4) | 33.3 | 1.00[b] | . . . |
| Mid (5 to 7) | 47.7 | 1.69 | 0.72, 3.95 | Mid (5 to 7) | 46.7 | 5.62 | 0.52, 60.84 |
| High (8 to 10) | 25.3 | **6.60** | 2.58, 16.90 | High (8 to 10) | 20.0 | 5.11 | 0.33, 79.07 |

*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Scored in the upper tertile on the Prosocial Behaviour Scale (PSBS).

[b] Baseline comparison group.

* Statistically significant regression coefficient ($p < .05$).

## Appendix G: Preliminary 1- and 2-Year Models

**Table G1 Logistic Regressions of Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of Scored High on the Conduct Problem Scale at 1-Year Follow-Up (28.5%)[a] among 282 Youths 11 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | SEβ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 26.0 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.7 | **- .701*** | .258 | **0.50** | 0.30, 0.82 |
| High (8 to 10) | 23.3 | **- 1.741*** | .381 | **0.18** | 0.08, 0.37 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 45.4 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 31.2 | .452 | .307 | 1.57 | 0.86, 2.87 |
| High (7 to 15) | 23.4 | **.652*** | .326 | **1.91** | 1.01 3.64 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.8 | | | 1.00[b] | . . . |
| Less than 8 | 86.2 | .154 | .344 | 1.17 | 0.59, 2.29 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 24.1 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.4 | -.220 | .314 | 0.80 | 0.43, 1.48 |
| High (8 to 10) | 25.5 | **-1.758*** | .467 | **0.17** | 0.07, 0.44 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 46.1 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 31.6 | .450 | .324 | 1.57 | 0.83, 2.96 |
| High (7 to 15) | 22.3 | **.765*** | .353 | **2.15** | 1.08, 4.29 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.5 | | | 1.00[b] | . . . |
| Less than 8 | 86.5 | -.014 | .400 | 0.99 | 0.45, 2.16 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | **- .468*** | . 186 | | |

**Models 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 244) | | | | 8 or more Youths in Home ($N$ = 38) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 23.4 | 1.00[b] | . . . | Low (0 to 4) | 28.9 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.4 | 0.97 | 0.50, 1.89 | Mid (5 to 7) | 50.0 | 0.24 | 0.04, 1.58 |
| High (8 to 10) | 26.2 | **0.24** | 0.09, 0.62 | High (8 to 10) | 21.1 | Unstable model | |

**Models 6 and 7**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 244) | | | | 8 or more Youths in Home ($N$ = 38) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 37.7 | 1.00[b] | . . . | Low (0 to 5) | 39.5 | 1.00[b] | . . . |
| High (6 to 10) | 62.3 | **0.34** | 0.19, 0.61 | High (6 to 10) | 60.5 | **0.10** | 0.02, 0.62 |

*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1c. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Scored in the upper tertile on the Conduct Problem Scale (CPS).

[b] Baseline comparison group.

[*] Statistically significant regression coefficient ($p < .05$).

**Table G2 Logistic Regressions of Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of Scored High on the Conduct Scale at 2-Year Follow-Up (24.9%)[a] among 172 Youths 12 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Model 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 27.3 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.2 | **- .673*** | .326 | **0.51** | 0.27, 0.97 |
| High (8 to 10) | 22.5 | **- 1.466*** | .475 | **0.23** | 0.09, 0.59 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 53.1 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 25.5 | **1.049*** | .405 | **2.86** | 1.29, 6.32 |
| High (7 to 15) | 21.4 | **.799** | .438 | **2.22[c]** | 0.94, 5.25 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.0 | | | 1.00[b] | . . . |
| Less than 8 | 87.0 | .650 | .513 | 1.92 | 0.70, 5.23 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 23.8 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.0 | -.562 | .426 | 0.59 | 0.26, 1.36 |
| High (8 to 10) | 26.2 | **-1.598*** | .592 | **0.20** | 0.06, 0.65 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 54.1 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 26.2 | **.975*** | .433 | **2.65** | 1.14, 6.19 |
| High (7 to 15) | 19.8 | .871 | .493 | **2.39[c]** | 0.81, 6.28 |
| Number of youths residing in group home | | | | | |
| 8 or more | 12.2 | | | 1.00[b] | . . . |
| Less than 8 | 87.8 | .817 | .673 | 2.26 | 0.61, 8.47 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- .526*** | .252 | | |

**Models 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 151) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 22.5 | 1.00[b] | . . . | Low (0 to 4) | 33.3 | 1.00[b] | . . . |
| Mid (5 to 7) | 49.7 | **0.44**[c] | 0.18, 1.07 | Mid (5 to 7) | 52.4 | Unstable | |
| High (8 to 10) | 27.8 | **0.17** | 0.05, 0.57 | High (8 to 10) | 14.3 | Model[d] | |

**Model 6**

***Negative Peer Influence by Group Home Size Interaction***

**.697**[*] .233

**Models 7 and 8**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 151) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 53.0 | 1.00[b] | . . . | Low (0 to 2) | 61.9 | 1.00[b] | . . . |
| Mid (3 to 6) | 26.5 | **3.41** | 1.37, 8.45 | Mid (3 to 6) | 23.8 | Unstable | |
| High (7 to 15) | 20.5 | **3.12** | 1.12, 8.72 | High (7 to 15) | 14.3 | Model[d] | |

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*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1c. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Scored in the upper tertile on the Conduct Problem Scale (CPS).

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[d] Explorations to bolster power and model stability in group homes with 7 or more youths ($N$ = 47) and dichotomous recodes of positive and negative peer influences all produced null results.

[*] Statistically significant regression coefficient ($p < .05$).

## Appendix H: Predictors of Antisocial Behaviours: Longitudinal Replications

**Table H1 Logistic Regressions of Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of "Often Loses Temper" (24.5%)[a] at 1-Year Follow-Up among 286 Youths 11 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | SEβ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Age | | | | | |
| 11 to 14 | 33.7 | | | 1.00[b] | . . . |
| 15 to 18 | 66.3 | **- .560*** | .238 | **0.57** | 0.36, 0.91 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 26.1 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.6 | - .385 | .272 | 0.68 | 0.40, 1.16 |
| High (8 to 10) | 23.3 | **- .689*** | .344 | **0.50** | 0.26, 0.99 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 45.5 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 31.0 | .537 | .328 | 1.71 | 0.90, 3.25 |
| High (7 to 15) | 23.5 | **.661** | .348 | **1.94[c]** | 0.98, 3.83 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.6 | | | 1.00[b] | . . . |
| Less than 8 | 86.4 | - .189 | .363 | 0.83 | 0.41, 1.69 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Age | | | | | |
| 11 to 14 | 24.8 | | | 1.00[b] | . . . |
| 15 to 18 | 75.2 | **- .852*** | .350 | **0.43** | 0.22, 0.85 |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 24.1 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.4 | -.395 | .347 | 0.67 | 0.34, 1.33 |
| High (8 to 10) | 25.5 | **- .873*** | .434 | **0.42** | 0.18, 0.98 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 45.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 31.5 | **.657** | .362 | **1.93[c]** | 0.95, 3.92 |
| High (7 to 15) | 22.7 | **.962*** | .394 | **2.62** | 1.21, 5.67 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.3 | | | 1.00[b] | . . . |
| Less than 8 | 86.7 | .209 | .427 | 1.23 | 0.53, 2.84 |

*Notes*. All models were adjusted for the confounding influence age. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1d. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table H2 Logistic Regressions of Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of "Often Loses Temper" (28.4%)[a] at 2-Year Follow-Up among 178 Youths 12 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 27.0 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.6 | **- .568** | .314 | **0.57**[c] | 0.31, 1.05 |
| High (8 to 10) | 22.4 | **- 1.166**[*] | .426 | **0.31** | 0.14, 0.72 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 53.0 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 25.3 | .574 | .387 | 1.78 | 0.83, 3.79 |
| High (7 to 15) | 21.7 | **.903**[*] | .393 | **2.47** | 1.14, 5.33 |
| Number of youths residing in group home | | | | | |
| 8 or more | 12.6 | | | 1.00[b] | . . . |
| Less than 8 | 87.4 | .374 | .455 | 1.45 | 0.60, 3.54 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 23.6 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.6 | - .562 | .401 | 0.57 | 0.26, 1.25 |
| High (8 to 10) | 25.8 | **-1.729**[*] | .556 | **0.18** | 0.06, 0.53 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 53.9 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 25.8 | .435 | .414 | 1.55 | 0.69, 3.48 |
| High (7 to 15) | 20.2 | **.916**[*] | .448 | **2.50** | 1.04, 6.01 |
| Number of youths residing in group home | | | | | |
| 8 or more | 11.8 | | | 1.00[b] | . . . |
| Less than 8 | 88.2 | .728 | .608 | 2.07 | 0.63, 6.82 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- .483**[*] | .240 | | |

**Model 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 157) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 22.3 | 1.00[b] | . . . | Low (0 to 4) | 33.3 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.3 | 0.57 | 0.25, 1.32 | Mid (5 to 7) | 52.4 | Unstable | |
| High (8 to 10) | 27.4 | **0.19** | 0.06, 0.57 | High (8 to 10) | 14.3 | Model | |

**Model 6 and 7**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 157) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 36.9 | 1.00[b] | . . . | Low (0 to 5) | 38.1 | 1.00[b] | . . . |
| Mid (6 to 10) | 63.1 | **0.32** | 0.15, 0.65 | Mid (6 to 10) | 61.9 | 0.77 | 0.08, 8.02 |

**Model 8**

***Negative Peer Influence by Group Home Size Interaction***

**.536**[*] .214

**Models 9 and 10**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 157) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 52.9 | 1.00[b] | . . . | Low (0 to 2) | 61.9 | 1.00[b] | . . . |
| Mid (3 to 6) | 26.1 | 1.83 | 0.78, 4.26 | Mid (3 to 6) | 23.8 | Unstable | |
| High (7 to 15) | 21.0 | **2.70** | 1.07, 6.82 | High (7 to 15) | 14.3 | Model | |

**Model 11 and 12**

***Negative Peer Influence (Recode) within Group Home Strata (Recode)***

| Less than 7 Youths in Home ($N$ = 131) | | | | 7 or more Youths in Home ($N$ = 47) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 6) | 78.6 | 1.00[b] | . . . | Low (0 to 6) | 83.0 | 1.00[b] | . . . |
| High (7 to 15) | 21.4 | 1.62 | 0.64, 4.12 | High (7 to 15) | 17.0 | 3.03 | 0.62, 14.78 |

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*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1c. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table H3 Logistic Regressions of Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of "Often Loses Temper" (29.8%)[a] at 3-Year Follow-Up among 104 Youths 13 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 28.4 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 47.9 | **- .650** | .385 | **0.52[c]** | 0.25, 1.11 |
| High (8 to 10) | 23.7 | **- 1.050*** | .492 | **0.35** | 0.13, 0.92 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 17.7 | **1.587*** | .529 | **4.89** | 1.73, 13.80 |
| High (7 to 15) | 11.5 | **1.232*** | .623 | **3.43** | 1.01, 11.62 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.3 | | | 1.00[b] | . . . |
| Less than 8 | 86.7 | -.261 | .479 | 0.77 | 0.30, 1.97 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 21.2 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.0 | **- .923** | .560 | **0.40[c]** | 0.13, 1.19 |
| High (8 to 10) | 29.8 | **- 1.514*** | .676 | **0.22** | 0.06, 0.83 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.2 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 18.3 | **1.369*** | .564 | **3.93** | 1.30, 11.87 |
| High (7 to 15) | 11.5 | **1.574*** | .692 | **4.83** | 1.24, 18.74 |
| Number of youths residing in group home | | | | | |
| 8 or more | 11.5 | | | 1.00[b] | . . . |
| Less than 8 | 88.5 | .382 | .761 | 1.46 | 0.33, 6.51 |
| **Model 3** | | | | | |
| ***Negative Peer Influence by Group Home Size Interaction*** | | **.760*** | .314 | | |

**Models 4 and 5**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 92) | | | | 8 or more Youths in Home ($N$ = 12) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 70.7 | 1.00[b] | . . . | Low (0 to 2) | 66.7 | 1.00[b] | . . . |
| Mid (3 to 6) | 17.4 | **4.28** | 1.30, 15.07 | Mid (3 to 6) | 25.0 | Unstable | |
| High (7 to 15) | 11.9 | **3.70**[c] | 0.91, 15.10 | High (7 to 15) | 8.3 | Model | |

**Models 6 and 7**

***Negative Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 92) | | | | 8 or more Youths in Home ($N$ = 12) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 70.7 | 1.00[b] | . . . | Low (0 to 2) | 66.7 | 1.00[b] | . . . |
| High (3 to 15) | 29.3 | **4.15** | 1.55, 11.12 | High (3 to 15) | 33.3 | 7.26 | 0.39, 133.94 |

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*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1c. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table H4 Logistic Regressions of Positive and Negative Peer Influences and Group Home Size on the Antisocial Behavior of "Fights with or Bullies Others" (53.0%)[a] at 1-Year Follow-Up among 284 Youths 11 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1c** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 26.0 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.9 | **- .432** | .253 | **0.65**[c] | 0.40, 1.07 |
| High (8 to 10) | 23.1 | **- 1.056**[*] | .302 | **0.35** | 0.19, 0.63 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 45.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 31.2 | **.536**[*] | .267 | **1.71** | 1.01, 2.89 |
| High (7 to 15) | 23.0 | **.731**[*] | .298 | **2.08** | 1.16, 3.72 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.5 | | | 1.00[b] | . . . |
| Less than 8 | 86.5 | .099 | .302 | 1.10 | 0.61, 1.98 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 23.9 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.7 | - .127 | .303 | 0.88 | 0.49, 1.59 |
| High (8 to 10) | 25.4 | **- .999**[*] | .355 | **0.37** | 0.18, 0.74 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 46.1 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 31.7 | **.598**[*] | .283 | **1.82** | 1.04, 3.17 |
| High (7 to 15) | 22.2 | **.773**[*] | .322 | **2.17** | 1.15, 4.07 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.4 | | | 1.00[b] | . . . |
| Less than 8 | 86.6 | .251 | .362 | 1.29 | 0.63, 2.61 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- .472**[*] | .164 | | |

**Model 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 246) | | | | 8 or more Youths in Home ($N$ = 38) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 23.2 | 1.00[b] | . . . | Low (0 to 4) | 28.9 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.8 | 0.88 | 0.46, 1.66 | Mid (5 to 7) | 50.0 | 0.84 | 0.16, 4.41 |
| High (8 to 10) | 26.0 | **0.35** | 0.17, 0.75 | High (8 to 10) | 21.1 | 0.42 | 0.05, 3.67 |

**Model 6**

***Negative Peer Influence by Group Home Size Interaction***

**.295**[*] .155

**Model 7 and 8**

***Negative Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 242) | | | | 8 or more Youths in Home ($N$ = 38) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Negative Peer Influence | | | | Negative Peer Influence | | | |
| Low (0 to 2) | 46.3 | 1.00[b] | . . . | Low (0 to 2) | 44.7 | 1.00[b] | . . . |
| Mid (3 to 6) | 32.1 | **2.15** | 1.18, 3.91 | Mid (3 to 6) | 28.9 | 0.56 | 0.11, 2.73 |
| High (7 to 15) | 21.5 | **1.80**[c] | 0.92, 3.54 | High (7 to 15) | 26.3 | **9.60**[c] | 0.89, 103.27 |

*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1c. Gender was not a significant predictor, confound or moderator in any model so it was removed from all models. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "somewhat true" or "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table H5 Logistic Regressions of Positive and Negative Peer Influences, Group Home Size and Gender on the Antisocial Behavior of "Fights with or Bullies Others" (52.7%)[a] at 2-Year Follow-Up among 177 Youths 12 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 27.2 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.4 | **- .916*** | .326 | **0.40** | 0.21, 0.76 |
| High (8 to 10) | 22.4 | **- 1.815*** | .395 | **0.16** | 0.08, 0.35 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 52.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 25.4 | **.839*** | .353 | **2.32** | 1.16, 4.62 |
| High (7 to 15) | 21.8 | .489 | .365 | 1.63 | 0.80, 3.34 |
| Number of youths residing in group home | | | | | |
| 8 or more | 12.7 | | | 1.00[b] | . . . |
| Less than 8 | 87.3 | - .375 | .393 | 0.69 | 0.32, 1.49 |
| Gender | | | | | |
| Female | 27.9 | | | 1.00[b] | . . . |
| Male | 72.1 | .110 | .276 | 1.12 | 0.65, 1.92 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted for Each Other*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 23.7 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 50.3 | **- 1.271*** | .440 | **0.28** | 0.12, 0.67 |
| High (8 to 10) | 26.0 | **- 2.181*** | .511 | **0.11** | 0.04, 0.31 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 53.7 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 26.0 | **.892*** | .397 | **2.44** | 1.12, 5.31 |
| High (7 to 15) | 20.3 | .537 | .453 | 1.71 | 0.70, 4.16 |
| Number of youths residing in group home | | | | | |
| 8 or more | 11.9 | | | 1.00[b] | . . . |
| Less than 8 | 88.1 | - .105 | .511 | 0.90 | 0.33, 2.45 |
| Gender | | | | | |
| Female | 27.1 | | | 1.00[b] | . . . |
| Male | 72.9 | - .347 | .385 | 0.71 | 0.33, 1.50 |
| **Model 3** | | | | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | | | | |
| | | **- .783*** | .221 | | |

**Model 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 156) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 22.4 | 1.00[b] | . . . | Low (0 to 4) | 33.3 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.0 | **0.30** | 0.12, 0.75 | Mid (5 to 7) | 52.4 | Unstable | |
| High (8 to 10) | 27.6 | **0.13** | 0.05, 0.38 | High (8 to 10) | 14.3 | Model | |

**Model 6 and 7**

***Positive Peer Influence (Recode) within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 156) | | | | 8 or more Youths in Home ($N$ = 21) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 37.2 | 1.00[b] | . . . | Low (0 to 5) | 38.1 | 1.00[b] | . . . |
| High (6 to 10) | 62.8 | **0.25** | 0.12, 0.52 | High (6 to 10) | 61.9 | 0.31 | 0.04, 2.36 |

**Model 8**

***Positive Peer Influence by Group Home Size by Gender Interaction***

**- .436*** .199

**Models 9 and 10: Boys**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 115) | | | | 8 or more Youths in Home ($N$ = 8) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 37.4 | 1.00[b] | . . . | Low (0 to 5) | 35.7 | 1.00[b] | . . . |
| High (6 to 10) | 62.6 | **0.31** | 0.14, 0.71 | High (6 to 10) | 64.3 | 0.53 | 0.06, 4.97 |

**Model 11 and 12: Girls**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home ($N$ = 41) | | | | 8 or more Youths in Home ($N$ = 8) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 36.6 | 1.00[b] | . . . | Low (0 to 5) | 42.9 | 1.00[b] | . . . |
| High (6 to 10) | 63.4 | **0.09** | 0.02, 0.52 | High (6 to 10) | 57.1 | Unstable model | |

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*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1d. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "somewhat true" or "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[*] Statistically significant regression coefficient ($p < .05$).

**Table H6 Logistic Regressions of Positive and Negative Peer Influences, Group Home Size and Gender on the Antisocial Behavior of "Fights with or Bullies Others" (48.9%)[a] at 3-Year Follow-Up among 104 Youths 13 to 17 Years of Age in Group Home Care in Ontario**

| Predictors | Prevalence (%) | Regression Statistic β | $SE_\beta$ | Odds Ratio | 95% CI |
|---|---|---|---|---|---|
| **Models 1a to 1d** | | | | | |
| ***Main Predictors Unadjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 28.1 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 47.9 | **- 1.061*** | .396 | **0.35** | 0.16, 0.75 |
| High (8 to 10) | 24.0 | **- 1.809*** | .475 | **0.16** | 0.07, 0.42 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.8 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 17.7 | **1.412*** | .541 | **4.10*** | 1.42, 11.84 |
| High (7 to 15) | 11.5 | **1.035** | .616 | **2.81[c]** | 0.84, 9.41 |
| Number of youths residing in group home | | | | | |
| 8 or more | 13.4 | | | 1.00[b] | . . . |
| Less than 8 | 86.6 | -.056 | .458 | 0.95 | 0.39, 2.32 |
| Gender | | | | | |
| Female | 22.2 | | | 1.00[b] | . . . |
| Male | 77.8 | -.398 | .366 | 0.68 | 0.33, 1.39 |
| **Model 2** | | | | | |
| ***Main Predictors Adjusted*** | | | | | |
| Positive Peer Influence Scale | | | | | |
| Low (0 to 4) | 21.2 | | | 1.00[b] | . . . |
| Mid (5 to 7) | 49.0 | - .533 | .556 | 0.59 | 0.20, 1.75 |
| High (8 to 10) | 29.8 | **- 1.507*** | .652 | **0.22** | 0.06, 0.80 |
| Negative Peer Influence Scale | | | | | |
| Low (0 to 2) | 70.2 | | | 1.00[b] | . . . |
| Mid (3 to 6) | 18.3 | **1.115*** | .576 | **3.05[c]** | 0.99, 9.43 |
| High (7 to 15) | 11.5 | 1.006 | .739 | 2.74 | 0.64, 11.64 |
| Number of youths residing in group home | | | | | |
| 8 or more | 11.5 | | | 1.00[b] | . . . |
| Less than 8 | 88.5 | -.164 | .670 | 0.85 | 0.23, 3.16 |
| Gender | | | | | |
| Female | 22.1 | | | 1.00[b] | . . . |
| Male | 77.9 | **-1.185*** | .542 | **0.34** | 0.12, 0.98 |

Table H6 (continued)

| | Regression Statistic | |
|---|---|---|
| | β | $SE_\beta$ |
| **Model 3** | | |
| ***Positive Peer Influence by Group Home Size Interaction*** | | |
| | **- .793*** | .285 |

**Model 4 and 5**

***Positive Peer Influence within Group Home Strata***

| Less than 8 Youths in Home (*N* = 92) | | | | 8 or more Youths in Home (*N* = 12) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 21.3 | 1.00[b] | . . . | Low (0 to 4) | 16.7 | 1.00[b] | . . . |
| Mid (5 to 7) | 47.3 | 0.54 | 0.17, 1.66 | Mid (5 to 7) | 66.6 | Unstable | |
| High (8 to 10) | 31.5 | **0.17** | 0.05, 0.63 | High (8 to 10) | 16.7 | Model | |

**Model 6 and 7**

***Positive Peer Influence within Group Home Strata (Recode)***

| Less than 7 Youths in Home (*N* = 75) | | | | 7 or more Youths in Home (*N* = 29) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 4) | 21.0 | 1.00[b] | . . . | Low (0 to 4) | 24.1 | 1.00[b] | . . . |
| Mid (5 to 7) | 50.7 | 0.48 | 0.13, 1.76 | Mid (5 to 7) | 44.8 | 0.94 | 0.13, 6.66 |
| High (8 to 10) | 29.3 | **0.07** | 0.01, 0.42 | High (8 to 10) | 31.0 | 1.85 | 0.17, 19.70 |

**Model 8**

***Positive Peer Influence by Group Home Size by Gender Interaction***

**- .869*** .278

**Models 9 and 10 Boys**

***Positive Peer Influence (Recode) within Group Home Strata (Recode)***

| Less than 7 Youths in Home (*N* = 57) | | | | 7 or more Youths in Home (*N* = 24) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 29.8 | 1.00[b] | . . . | Low (0 to 5) | 45.8 | 1.00[b] | . . . |
| High (6 to 10) | 70.2 | **0.30** | 0.09, 0.98 | High (6 to 10) | 54.2 | 1.80 | 0.32, 10.20 |

**Model 11 and 12: Girls**

***Positive Peer Influence (Recode) within Group Home Strata (Recode)***

| Less than 7 Youths in Home (*N* = 18) | | | | 7 or more Youths in Home (*N* = 5) | | | |
|---|---|---|---|---|---|---|---|
| | % | OR | 95% CI | | % | OR | 95% CI |
| Positive Peer Influence | | | | Positive Peer Influence | | | |
| Low (0 to 5) | 44.4 | 1.00[b] | . . . | Low (0 to 5) | 20.0 | 1.00[b] | . . . |
| High (6 to 10) | 55.6 | 0.38 | 0.04, 3.61 | High (6 to 10) | 80.0 | Unstable model[d] | |

*Notes*. Positive peer influence was adjusted for negative per influence and vice versa in each model except 1a to 1d. 95% confidence intervals (CI) that did not include the null value of 1.00 were statistically significant ($p < .05$). Statistically significant regression coefficients and odds ratios were bolded. Missing data were completely at random (Little's MCAR $\chi^2$ test was not significant).

[a] Included those who responded "somewhat true" or "true."

[b] Baseline comparison group.

[c] Approached statistical significance ($p < .10$).

[d] Explorations to bolster power and model stability in group homes with 6 or 5 or more youths ($N = 8$ or 13) both produced null results.

[*] Statistically significant regression coefficient ($p < .05$).

## Vita Auctoris

| | |
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