

Transitioning from Child Welfare into Adulthood: A Meta-Analysis of North American Interventions

by

Priscilla Healey
BA (Hons.), University of British Columbia, 2011

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Supervisory Committee

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Supervisory Committee

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Abstract

Objective:

To assess the impact of North American transition programs for youth emerging to adulthood on education, housing, relationship, identity formation, youth engagement, life skills, mental health, and financial outcomes.

Methods:

Electronic databases, grey literature sites, and research articles were searched to identify randomized control trials and quasi-experimental designed studies examining the effectiveness of transition programs for foster youth. Cochrane Collaboration criteria were used to conduct, identify and assess potential studies. Whenever possible data was extracted and synthesized with random effect, inverse variance meta-analyses.

Results:

A total of eight studies including 1560 participants were included in this review. Data suggests that interventions focusing on teaching independent living skills are no more effective at improving outcomes for youth when compared with services “as usual.” Youth who participated in school-based self-determination programs showed improved outcomes in transition planning, quality of life, and self-determination.

Conclusion:

These results are preliminary and should be interpreted with caution. The studies examined here had small sample sizes, and may not have had enough power to detect a real difference. More research is needed.

Keywords: foster care, independent living programs, self-determination, systematic review

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Chapter 1: Introduction

Transitioning from child welfare systems into adulthood or “aging out” is an important topic that has been gaining attention over the last decade. In North America, child welfare systems vary greatly across province, territory, and state; however, regardless of location, these systems generally provide support for children until they reach the age of majority, which varies from 18 years (49 states and 6 provinces) to 19 years (2 states, 4 provinces, and 3 territories) (Department of Justice, 2015; Human Research Protection, 2012). Once youth reach the age of majority they are legally considered adults and no longer qualify for regular child welfare services, although some jurisdictions are expanding the age limit. Emerging adulthood can be an exciting time; yet outcomes for young adults who transition or “age out” of child welfare systems remain poor (Tweddle, 2007; Reid, 2007).

Research consistently illustrates a number of struggles that former foster youth encounter. Compared to their peers, youth who age out of child welfare systems are more likely to experience low educational achievement, unemployment, residential instability, homelessness, legal system involvement, incarceration, mental health issues, substance use, and unplanned pregnancy (Day, Dworsky, Fogarty, & Damashek, 2011; Berzin, Rhodes, & Curtis, 2011; Dworsky & Courtney, 2010; Hook & Courtney, 2011; Saddichha, et al., 2014; Shook et al., 2011; Tweddle, 2005). With these results being consistent across regions and countries, understanding the pathways—and intervention alternatives—that lead to positive outcomes for youth transitioning from child welfare to adulthood is an important step to improving the adult lives of former foster care youth (Reid, 2007).

Current estimates indicate that there are approximately 466,546 children in foster care across North America (67,000 Canadian, 399,546 American) at any given time (Child Welfare Information Gateway, 2013; Mulcahy & Trocmé, 2010), with between 24,000 and 26,300 American youth aging out of foster care each year (U.S. Department of Health and Human Services, 2012). Life transitions can be stressful and becoming an adult is no exception. Emerging adulthood can be a difficult time for youth, but support from parents, friends, and other adults can mitigate some of the uncertainty and instability of this time and help to ease the transition. A recent Canada-wide study found that 42% (N = 4,318,400) of young adults, age 20 to 29, live with their parents (Statistics Canada, 2012). Key reasons why young adults are choosing to stay at home longer include the cost of living or lack of affordable housing, difficulty finding employment, attending post-secondary institutions, cultural preferences, and not being in a relationship or returning home after a breakup (Statistics Canada, 2012).

Transitioning to adulthood can be a challenging time for youth. Today's youth seem to rely on their parents for multiple supports well into their 20's, and often return home if experiencing employment, housing, or relationship instability (Statistics Canada, 2012). Unlike their same age peers, former foster youth are not usually afforded the same luxury of remaining in the foster home or returning home if they experience hardship (Tweddle, 2007). Youth are often cut off from some of the resources and personal supports that they have had, leaving them to fend for themselves without the support of family or the child welfare system (Tweddle, 2007; Reid, 2007). Although there are resources available for young adults, youth may have limited knowledge about, or how to access these supports. In addition, these youth come from high-risk environments and often carry with them emotional, cognitive, social, and psychological scars from past trauma (Courtney, Terao, & Bost, 2004; Perry, 2006). With little to no family support

and limited financial resources, foster youth are already at a disadvantage compared to their peers (Courtney et al., 2004; RCY, 2006). This lack of resources compounded with a history of abuse and neglect, makes transitioning to adulthood exceedingly challenging for foster youth (Perry, 2006; Tweddle, 2007).

Transitioning to Adulthood

Over the last few decades there has been a shift in both the process and markers of adulthood; that is, there is no longer a distinct procedure or clear markers of adulthood. In the 1960's it was both common and expected that upon leaving school one would promptly get a job, set up home, get married, and start a family (Furstenberg, Rumbaut, & Settersten, 2005). Based on the current economy and social structure, today's young adults are opting to delay independent living, entering the employment market, and getting married (Rutman, Hubberstey, Barlow, & Brown, 2005). More youth today are choosing to pursue higher education than ever before, with 64.1% of young adults attending university (Statistics Canada, 2013) compared to 8.5% in the 1960's (Furstenberg, et al., 2005). Moreover, it is becoming increasingly common for young adults to remain in the family home well into their 20's (Statistic Canada, 2012).

A new developmental stage, referred to as "emerging adulthood," has materialized and has begun to gain recognition. Emerging adulthood is described as a time of feeling "in-between" and is characterized by instability, self-focus, and possibility (Arnett, 2004). A number of significant life events are experienced during this time, such as completing high school, leaving the parental home, getting a job, exploring romantic relationships, and getting married (Goossens, 2001). The experience is becoming more fluid, with each emerging adult moving through this stage at their own pace, and in no particular order. There are fewer social scripts to guide today's emerging adults. Young people have the freedom, and are often encouraged, to

navigate through this stage at their own speed. This can be challenging for some youth, especially those who lack social and financial support. Research suggests that successful transition into adulthood requires the youth take on a future orientation (Heinz, 2009; Hermans & Dimaggio, 2007), which requires goal setting and the development and implementation of strategies to achieve these goals (Nurmi, 2004; Seginer, 2009).

Although the pathways that lead to child welfare involvement and the trajectories of each child in care vary greatly, youth who age out of the child welfare system are faced with many of the same challenges. These children come from high-risk family and community environments that can negatively impact their emotional, social, cognitive, and physical development (Courtney, et al., 2004). In addition to experiencing instability prior to entering child welfare, frequent placement changes and school disruptions can lead to feelings of insecurity and loss that may be experienced by the individual throughout their child welfare journey (Knott & Barber, 2005). It is not surprising then, that young adults frequently struggle with both relational and housing instability after leaving child welfare systems.

Rationale

This current research project aims to gain a better understanding of how different interventions impact young adults who have transitioned out of care, it is imperative to develop a theoretical framework that underlines the mechanisms for positive outcomes. Research highlights eight areas that need to be addressed in order to improve outcomes for youth transitioning from care into adulthood: education, housing, relationships, identity, youth engagement, life skills, mental health, and financial support (Merdinger, Hines, Lemon Osterling, & Wyatt, 2005; National Youth in Care Network, 2006; Reid, 2007; Reid & Dudding, 2006; Rutman, et al., 2005; Tweddle, 2005; Kessler, 2004). Reid and Dudding (2006) go one-

step further to highlight financial support as the foundation for the remaining seven pillars. With a sound financial base, the remaining seven pillars act as support beams, building a metaphorical bridge as s/he crosses over from childhood into adulthood. These interconnected pillars lay the foundation and provide youth the additional supports as they transition from the foster care system into adulthood (Reid, 2007; Reid & Dudding 2006).

As services, programs, and legislation vary greatly across states and provinces it can be exceedingly difficult not only to track outcomes for youth in care across programs, but also to assess the efficacy of interventions designed to aid in the transition. Although there are a number of qualitative studies that examine the perspectives of youth on transitioning from care (e.g., Cunningham, & Diversi, 2013; Hiles, Moss, Thorne, Wright, & Dallos, 2014), there is a dearth of nationwide, longitudinal studies that track interventions and pathways for child welfare to adulthood.

Donkoh, Underhill, and Montgomery (2009) conducted a systematic literature review of independent living programs (ILP) in America and England prior to June 2005. The researchers limited their findings to randomized and quasi-randomized controlled studies. Of the 2196 citations identified by researchers, none met the inclusion criteria for their review and as such, no meta-analysis was conducted (Donkoh et al., 2009). Based on these findings, the current study was designed to encompass a larger scope of transition research. Our current study has expanded beyond ILP to include any intervention or program whose goal is to improve outcomes for youth transitioning out of foster care. The decision to include quasi-experimental designs was made based on the nature of child welfare research; as random assignment is not always feasible or ethically responsible when dealing with vulnerable youth in foster care systems (Leadbeater et al., 2006). This study is a meta-analysis with the purpose of evaluating North American research

on interventions involving at least one of the aforementioned eight pillars of support, and to compare the effect of these interventions across programs. The primary goals will be to 1) identify which of the aforementioned eight pillars are being implemented into practice, 2) how these pillars interact to improve outcomes, and 3) identify research gaps and make future recommendations.

Chapter 2: Literature Review

This review of current literature is intended to gain a better understanding of interventions intended to support youth transitioning out of care; it is not intended to be exhaustive, but rather to provide a theoretical framework for the mechanisms behind successful interventions that help young people transition from care. In order to do this, it is important to understand what transitioning to adulthood looks like and what supports are addressed in the current literature.

Education

Growing up within a child welfare system may put emerging adults at an educational disadvantage. Foster children tend to have a number of educational challenges, including lower overall educational achievement compared to their same age peers (Pecora, 2012). Foster children are less likely to finish high school, and have fewer years of post-secondary education than the general population (Courtney & Hughes-Heuring, 2005; Wolanin, 2005). Youth who transition into adulthood from foster care often do so with significant educational gaps (Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001; McMillan & Tucker, 1999). This disadvantage tends to start early, and follows children throughout their educational experience. According to Avery and Freundlich (2009), foster children tend to be poorly prepared for kindergarten, and have greater than average behavioural problems and learning disabilities. Foster children also on average miss a large number of days, and are more likely to drop out of school (Avery & Freundlich, 2009).

Foster children often encounter familial, residential, and educational instability, which can have a life-long impact on their learning outcomes. Often these changes take place during the school year, which has a direct impact on school performance and educational achievement

(Pecora et al., 2003). Pecora and colleagues (2005) surveyed 479 adults regarding their educational experiences while in foster care. They found that 65% reported attending seven or more schools between kindergarten and grade twelve (Pecora et al., 2005). In addition, another study, conducted by Courtney and colleagues (2004; 2005; 2007), followed 732 foster youth from the age of 17 or 18 and evaluated outcomes for youth into adulthood (Courtney, Dworsky, Cusick, Havlicek, Perez, Keller, 2007; Courtney, Dworsky, Ruth, Keller, Havlicek, & Bost, 2005; Courtney, Terao, & Bost, 2004). Approximately one third of participants attended more than five elementary schools, averaging a school change almost every year (Courtney et al., 2004).

A study of 16,000 public school youth in Chicago (data collected 2001 – 2003) found that two thirds of students changed schools shortly after entering foster care. In this study, type of placement had the greatest impact on the likelihood and number of times a child would change schools (Smithgall, Gladden, Howard, Goerge, & Courtney, 2004). For elementary students, being placed in a relative's care decreased the likelihood of experiencing a school change during the school year. Data from the three-year study showed that students residing in the care of relatives were most likely to remain in the same school (87%, 87%, 89% respectively), followed by students in non-relative care (77%, 80%, 76% respectively). Children in institutional care were least likely to remain at the same school for the duration of the school year (28%, 27%, 23% respectively). Children placed in institutional settings were more likely than any other group to experience school change, with approximately three out of four institutionalized children changing schools at least once during the school year. Smithgall and colleagues (2004) also found that the number of housing placements within a year impacted school stability, with more placements leading to less school stability. For instance in 2001, students who did not

experience a placement change over the course of the school year were unlikely to experience a school change within that same year (83% no change); whereas in the same year, three out of four students with three or more placements changed schools at least once during the school year (75%).

While frequently changing schools can be challenging on its own, foster children often change schools mid semester. This requires students to adjust to new teachers, rules, curricula, and expectations (Vacca, 2007). Additionally, there may be gaps in the education of students entering a school midway through the year, as schools vary in their teaching of fundamental concepts; this may cause already struggling students to fall even farther behind. In a state-wide survey of Washington's foster youth, Schubert (2001) found that youth in care consistently score below their peers, with foster children scoring 15% to 20% below the state average. Further, these children were twice as likely as the general population to repeat a grade (Schubert, 2001).

Educational success continues to be a challenge for former foster youth in adulthood. Not only are these young adults unlikely to attend post-secondary institutions, it is estimated that only 39% to 77% of foster youth complete their high school diploma or GED (Courtney et al., 2007; Courtney et al., 2005; Merdinger, et al., 2005; Pecora et al., 2003). The Institute for Higher Education Policy, published a report entitled "Higher Education Opportunities for Foster Youth: A Primer for Policymakers" which looked at the college attendance of former foster youth in comparison to their peers. This report estimates that there are about 300,000 former foster care youth between the ages of 18 and 25. Of these youth, approximately 150,000 have completed high school and are qualified to attend college. Yet, only about 30,000 are attending postsecondary institutions. If former foster youth were to attend post-secondary at rates comparable to their same age peers, an additional 100,000 of these youth would be attending

college/university (Wolanin, 2005).

Though financial support may be a factor, it is likely that early educational trajectories also play a role. Day and colleagues (2011) compared undergraduate students at Michigan State University between 2001 and 2009. Participants consisted of 444 self-identified former foster children, 378 low-income, first generation college students, and 6202 first generation students whose parental income did not exceed the poverty level by more than 150%. They compared the college dropout rate of foster care alumni to low income first generation students who had never been in foster care. Foster alumni were significantly more likely than low-income first generation attendees to drop out after the first year, (21% and 13% respectively) and before completing a degree program (34% and 18% respectively). These differences remained significant when controlling for gender and race (Day et al., 2011). In a national US study, only one quarter (26%) of foster youth who entered college programs completed their degrees within six years, compared to over half (56%) of other graduates (Snyder, Tan, & Hoffman, 2006). Moreover, Courtney et al., (2007) found that former foster youth were also less likely to attend college (30%) than their non-fostered peers (53%). Of those who did attend, just over a quarter (28%) of foster alumni attended for one or more years compared to their non-fostered peers (43%). The type of programs that foster alumni chose to pursue also differed from their peers. Former foster youth are more likely to enrol in a two-year program (56% compared to 25%), and less likely to take a four-year program than their peers (28% compared to 71%) (Courtney et al., 2007). These studies outline a significant educational gap between foster alumni and their non-fostered cohort.

Housing

Safe and stable housing is a basic need for all humans, but for foster children housing instability often starts even before entering foster care, and tends to increase exponentially from that point on. The factors leading up to placement instability are complex, and integrate

systematic and personal characteristics of both the child and the caregiver (Havlicek, 2011).

Though the number of placement changes varies per child, it is estimated that the average child in care will experience between 2.4 (Dworsky, 2005) to 9.5 (Mech & Fung, 1999) placement changes. While most think about “out of home care” as residing in a foster home with foster parents and possibly foster siblings, children in the child welfare system may experience a number of different kinds of housing placements. These may include kinship arrangements, foster homes, group homes, independent living, and other facilities that provide specialized services (Reid, 2007).

Externalizing behavioural problems seem to be the greatest predictor of placement instability while in care (Newton, Litrownik, & Landsverk, 2000), although the directionality of this predictor is mixed. Park and Ryan (2009) found that having behaviour-related problems prior to entering care lead to greater placement instability and more frequent moves while in care. Whereas Rubin, O’Reilly, Luan, and Localio (2007) found that placement instability increased the chances that children would experience behavioural problems later on. Children are more likely to show poor emotion regulation and behavioural problems within the first six months of entering care (Smith, Stormshak, Chamberlain, Brigs, & Whaley, 2001).

Consequently, there is a high risk of initial placement disruptions upon entering care that decreased over time (Wulczyn et al., 2003). This is problematic, as placement changes within the first year can have a negative impact on a child’s feelings of stability, and can place the child on a trajectory for future placement and housing instability (Webster, Barth, & Needell, 2000).

Newton and colleagues (2000) looked at the relationship between behavioural problems and placement change in a sample of 415 foster youth in San Diego, over a 12-month period. Results indicated that externalizing behaviours were the greatest predictor of placement change initially.

Behavioural problems at time 1 were significantly related to number of placement changes. However, placement breakdown also led to an increase in externalizing behaviours for those youth who initially scored in the normal range on the Child Behaviour Checklist.

Although behavioural problems may be an indicator of placement breakdown, they account for less than 25% of all placement moves (James, 2004). Other reasons that children may be moved include “agency policy and practice that used temporary homes, move children to less restrictive settings, place children with siblings, and moved children closer to their families” (Havlicek, 2011, p. 1094). However, with each placement change foster children experience a feeling of loss of control over their lives (Unrau, Seita, & Putney, 2008). And with each placement change the youth grows more distant from family, peers, and social institutions (i.e. school, church, culture, etc.) (Havlicek, 2011). This disconnect from social and family institutions is often carried by youth into adulthood. Havlicek (2011) conducted an in-depth literature review and found that although research supports the postulation that certain groups of children are at a higher risk of frequent placement changes, there is more research to support the existence of systematic factors within child welfare systems that lead to placement instability. Additionally, examinations of instability tend to be focused at the individual level rather than honing in on systemic factors, such as the environment in which children reside.

Older youth are the second largest population entering the foster care system (Wulczyn, Barth, Yuan, Harden, & Landsverk, 2005) and are also the most likely to experience placement impermanency (James, Landsverk, & Slymen, 2004; Park & Ryan, 2009; Webster, et al., 2000; Wulczyn, Kogan, & Harden, 2003). For youth, foster placements can be extremely fragile and many live in fear of being rejected and/or asked to leave. According to Reid (2007), youth who are placed in out of home care often feel like outsiders, and have no stake in the foster family

relationships. Foster children are already in a vulnerable position. For many foster youth “the fragility of a placement is reinforced when those in authority respond to problem behaviours with a caution about a potential placement change” (Reid, 2007, p. 38). Because youth are the vulnerable party within the foster parent/foster child relationship, and have little control over whether they stay in a home, they lack the freedom to explore their world and make mistakes under the supervision of a caring adult. Instead, they live in fear that the precarious placements upon which they depend might crumble at the slightest indiscretion or misbehaviour. In contrast, “teenagers living at home with their family do not have to worry about finding a new place to live if they miss curfew once too often or have a temper tantrum because they did not get their way” (Reid, 2007, p. 38).

Berzin, and colleagues (2011) suggest “a key task of emerging adulthood is moving out on one's own, away from caregivers, and securing safe, stable, and affordable housing” (Berzin et al., 2011; p. 2123). However, research indicates that former youth in care have a hard time obtaining safe and secure housing and are at a high risk of housing instability (Berzin et al., 2011; Reilly, 2003) and homelessness (Courtney et al., 2001; Pecora et al., 2006). Indeed, a disproportionate number of individuals struggling with homelessness have foster care histories (Berzin et al., 2011; Park, Metraux, Brodbar, & Culhane, 2004). Although exact numbers are hard to obtain, in the United States it is estimated that a quarter (22% - 27%) of former foster youth will experience homelessness (Courtney, Dworsky, Lee, & Raap, 2010; Pecora et al., 2006; Reilly, 2003) compared to approximately one percent of the general population (Burt, Aron, Lee, & Valente, 2001). More specifically, research suggests that 11% to 36% of foster alumni experience homelessness while transitioning out of child welfare systems into adulthood

(Dworsky & Courtney, 2010; Fowler, Toro, & Miles, 2009; White, Gallegos, O'Brien, Weisberg, Pecora, & Medina, 2011).

In Canada, it is estimated that close to half of all homeless youth were involved in the child welfare system (Novac, Serge, Eberle, & Brown, 2002). A study of 500 homeless adults, at least 19 years of age, in British Columbia looked at homelessness and incarceration among foster youth, and found that nearly half of the study participants (49%) were previously in foster care. Moreover, significantly more individuals who were incarcerated and homeless (56%) were foster care alumni than non-incarcerated individuals (35%) (Saddichha, 2014). In Toronto, almost half (48%) of the street youth seeking post transition services were previously in care (Leslie & Hare, 2000). Berzin et al. (2011) compared a sample of 133 foster youth, 458 matched youth, and 8243 unmatched youth. Berzin and colleagues (2011) analyzed data from the Longitudinal Survey of youth 2007 and found that foster alumni have greater difficulty with the transition to independent living. In addition, they are more likely to be homeless and have less housing stability. Those who do have housing tend to live in lower socioeconomic neighbourhoods and frequently rely on public welfare for assistance (Berzin et al., 2011). In this study, foster youth experienced more moves, higher levels of homelessness, and were more likely to be living independently in lower quality neighbourhoods than their matched and unmatched peers (Berzin et al., 2011). For former foster youth obtaining stable, affordable housing can be a struggle, especially if they have a history of housing instability growing up. Moving out of the family home into independent housing is often a gradual process (Arnett, 2000).

Relationship

Human beings are social creatures and relationships are an important part of development. Children learn to understand their world through their interactions with others (Siegel, 2001). Early attachment sets the foundation for relationships throughout the lifespan.

Relationships that begin in the family of origin provide the working models and internal schema for future relationships and the attachment process (Mikulincer, 1998). These relationships are thought to have a direct effect on brain development (Siegel, 2001). Research suggests that brain development is a function of interpersonal connection. According to Siegel (2001), exposure to excessive stress, abuse, and neglect in childhood can drastically influence brain development, and has many negative impacts. Our early experiences determine which neural pathways will form and how our neural networks will be created (Siegel, 2001). Some neurobiologists assert that even neural pathways that receive minimal stimulation will retain their connections (Siegel, 2001). This research may partially explain why maladaptive behaviours and thought patterns are hard to break. Relationship building in childhood is important for relationships across the lifespan. Sebanc (2003) looked at a sample of 98 preschool children and found that having friends can lead to better socio-emotional adjustment, and more pro-social behaviours (Sebanc, 2003). When a child experiences physical, emotional, or psychological abuse/neglect from a caregiver, she or he learns that the world is unsafe and the people cannot be relied upon. This has a lasting impact on the child and influences the types of relationships the child establishes throughout the lifespan (Unrau & Krysik, 1996).

As many children in the foster care system have a history of childhood abuse and neglect, forming positive relationships can be challenging, without the added instability that the foster care system provides. Youth tend to have better outcomes when they feel connected to family, school, and community (Rutman et al., 2005); however, foster youth often lack positive supports and relationships (Ferrell, 2004). Due to frequent moves, they experience disruptions in caregivers, friendships, schools, and community. This instability may lead to constantly changing relationships and lack of consistent supportive adults in their lives (Ferrell, 2004). As

such, foster youth tend to have fewer close friends in their graduating class and have lower levels of attachment than their peers, and less positive overall school and peer experiences (Christian 2003, as cited in Vacca, 2008).

Peer relations are extremely important for developing youth. There is a strong link between having friends and positive outcomes (Güroğlu et al., 2007, Clark & Drewry, 1985, Sebanc, 2003). Youth who have friends have higher self-confidence and are more cooperative (Clark & Drewry, 1985). Though friendships in general can be beneficial, the type of friendship impacts personal adjustment and functioning (Güroğlu, van Lieshout, Haselager, & Scholte, 2007). The association between peer relationships and behaviour is complicated and can lead to both positive and negative outcome. Güroğlu et al. (2007) looked at peer relationships between 5,851 youth (2,518 preadolescent, and 3,333 adolescent), examining how these relationships affect the psychosocial adjustment of adolescents. To assess psychosocial adjustment, participants filled out self-report and peer evaluation measures that looked at depression, delinquent behaviour, and addiction behaviour. Through cluster analysis, researchers identified three friendship categories, with two types of friends within each category: Socially Withdrawn friendship (Victimized Withdrawn and Prosocial Withdrawn friends), Prosocial friendship (High Prosocial and Less Prosocial friends), and Antisocial friendship (Bullying Antisocial and Antisocial friends). Results from this study indicated that Prosocial relationships lead to better adjustment overall. Whereas, youth who had Socially Withdrawn and Antisocial Friendships were the least well-adjusted, even compared to those participants without friends. Thus, although having friends can build confidence and provide youth with a sense of belonging, not all peer relationships have a beneficial impact. Research demonstrates that peer affiliation can have negative effects and lead to anti-social behaviour and delinquency (Güroğlu et al., 2007; Shook,

Vaughn, Litschge, Kolivoski, & Schelbe, 2009).

Shook and colleagues (2009) explored the relationship between deviant peer association and personality, social, and behavioural characteristics. Participants consisted of 451, 17-year-old youth involved in the child welfare system in Missouri. They found that youth with higher levels of family support had lower deviant peer association, and were more likely to be enrolled in college than youth with high deviant peer association. These youth also had lower levels of externalizing pathology, impulsivity, and narcissism. Further, they were less likely to have been diagnosed with conduct disorder or anti-social personality disorder than their peers with high deviant associations. In contrast, association with deviant peers increased the likelihood of criminal involvement and arrest, drug use, and substance abuse (Shook et al., 2009). The link between delinquent peer association and negative outcomes is interesting. Often children with behavioural problems or externalizing pathology end up in-group home settings. This peer association could partially explain why youth in group homes are at a two and a half times greater risk of delinquency than youth in foster care homes (Ryan, Marshall, Herz, & Hernandez, 2008; Shook et al., 2009).

There are a number of studies that support the notion that having at least one caring adult to support and connect with can mitigate some of the negative effects of early trauma and neglect, and act as a protective factor for youth at risk (Greeson & Bowen, 2008; Fraser, Kirby, & Smokoski, 2004; Shook et al., 2009; Werner & Smith, 2001). Even youth identify supportive adult relationships as significant. These relationships tend to occur naturally in the environments of children who are not in foster care (e.g., teachers, extended family, neighbours, family friends, and coaches; Ontario Association of Children's Aid Societies, 2006). For foster youth who lack placement stability, these relationships can be hard to develop and maintain. Studies have shown

that caring adult relationships are significantly associated with positive psychological outcomes (Ahrens, DuBois, Richardson, Fan, & Lozano, 2008; Greeson & Bowen, 2008; Munson & McMillen, 2008). It is not surprising then that children who remain connected with their birth parents and extended relatives tend to have better outcomes than those who do not (Collins, 2001).

Greeson and Bowen (2008) identified three key characteristics in a supportive relationship between foster youth and their adult mentor: “trust”, “love and caring”, and “like parent and child” (p. 1181). Trusting relationships with adults build the foundation for further relationships (Geenen & Powers, 2007). The characteristic of trust in adult/foster youth relationships was multidirectional. When adults were open and honest, they created a safe space in which youth could do the same (Greeson & Bowen, 2008). Genuine love and caring, another key characteristic identified by Greeson and Bowen, is also an important aspect of this relationship, along with being supportive and available if the youth wanted to talk. Finally Greeson and Bowen’s “like parent child relationship” is one where the adult looks out for the child, providing advice, and guidance; and emotional, informational, and tangible support (Greeson & Bowen, 2008). Many foster youth maintain contact with past foster parents, as they remain important sources of support (Rutman, Hubberstey, Feduniw, & Brown, 2006). Children and youth develop a sense of purpose and belonging through supportive peer and adult relationships (Van Bockern, Brendtro, & Brokenleg, 2000).

Identity

Identity formation is an essential part of development. The adolescent and emerging adulthood years are a crucial time of identity exploration and establishment. Giddens (1991) asserts, “self-identity is negotiated through linked processes of self-exploration and the development of intimacy with each other” (p. 97). Youth need the freedom and security to

explore their world with acceptance and support. According to Erikson (1968), during adolescence a young person will explore different roles to find their “true identity.” This process is done through trying out new activities, friends, and supports, and exploring one’s own beliefs, values, and morals. Research suggests that identity formation is a social endeavour and is developed through our interactions. The “processes of identity work extends beyond individualized projects, as they intertwine with relational development with others.” (Anthony & McCabe, 2015, p. 65). Cooley (1902) used the metaphor of the looking glass to illustrate how our perception of self is based on our interactions with others, and the reflections of self that others mirror back to us. Both parent (Beyers & Goossens, 2008; Koepke & Denissen, 2012; Schachter & Ventura 2008) and friend (Anthony & McCabe, 2015) relationships play a role in the co-construction of identity.

Identity development is an on-going process. Through exploration, the youth or emerging adult attempts to solidify self-identities that are both socially acceptable and affirming to their self-concept (Hadden & Lester 1978; Snow & Anderson, 1987). This process takes place within the social realm. Self-concepts are intertwined with the concept of relationships (Reis, Collins, & Berscheid, 2000). Developmental Systems Theory (Ford & Lerner, 1992) focused on the co-construction of identity within the context of familial, social, cultural, and physical environment. Long-term relationships, such as family, plays a key role in identify development (Kuczynski, 2003; Lollis, 2003). For the most part, families are typically there through each developmental stage as a child grows, changes, and asserts autonomy. Parents influence child development throughout the child rearing process, and at an early age children are able to identify their role within the family (e.g., smart, funny, sensitive, creative, athletic, peacekeeper, etc.).

Friend relationships, although may not hold the same longevity as familial relationships, are powerful in learning about the self from outside the family source. Peer relationships are a way to experience the self from outside the family world. These interpersonal relationships are a key part of this process and influence how one views the world and the concept of self in relation to others. According to Arnett (2004) the tasks of emerging adulthood are closely linked with identity formation. One way in which adolescents and emerging adults learn about themselves is through their difference from others (Arnett 2004). As youth emerge from childhood to adulthood they begin to identify and solidify their interests, talents, beliefs, and values. Friends and interpersonal relationships have a crucial role in this self-exploration and identity formation. Anthony and McCabe (2015) looked at the relationship between “friend talk” and identity formation, and found that verbal construction of friend relationships can impact how one identifies self within peer relationships and internalizing ideals. Adolescents and emerging adults will often become close to a friend group, a sports team, or an extracurricular club in which they develop relationship and networks with their peers. Often, a youth’s developing identity becomes tied to the ideals and people within this group (Anthony & McCabe, 2015).

Though adolescence is an important time for identity development, identity formation begins far earlier and continues throughout the life span. Children are curious about their families, culture, and background and “all of us have a fundamental right to know who we are and where we come from” (Reid, 2007, p. 38). Answers to these questions help children navigate who they are and who they want to be within their social, cultural, and familial world. Unfortunately many children in the foster care system grow up separated from their biological families and birth cultures. Instead, these children are raised in other families, often with other cultures and belief systems. Consequently, children in the foster care system struggle with

identity formation and connecting to their heritage (Reid, 2007). This cultural disconnect, in addition to living separate from their biological family, foster children may experience multiple placements, moves, and school changes, make it difficult not only to develop their own sense of identity, but also to figure out where they belong in the world. Often, these children do not know where they have come from, and/or feel disconnected from their birth family's values, history, and heritage.

Youth Engagement

Youth engagement and community involvement have many benefits for youth and emerging adults. Youth community and family engagement can lead to greater feelings of self-determination. The potential benefits of self-determination in adolescents with disabilities in foster care are well documented (Powers et al., 2001a; Powers et al., 2001b). Self-determination refers to “having the capacities and opportunities to more actively direct one's own learning and other life activities in ways leading to personally satisfying outcomes” (Field, Martin, Miller, Ward, & Wehmeyer, 1998, as cited in Geenen et al., 2015, p. 52). There are a number of interventions that assess the efficacy of youth-centred self-determination studies in regards to educational achievement and mental health. Specifically, goal setting and self-regulation are related to better educational achievement (Powers et al., 2001a; Powers, et al., 2001b). Song (2010) found that having more “social capital” or social connections lowers subjective psychological distress. In a nationally representative study of 64,246 US high school seniors (data collected from 1976-2008), relational attachment in the areas of social trust, social responsibility, and religiosity, were found to lower substance use and increase positive societal contributions (Wray-Lake, Maggs, Johnston, Bachman, O'Malley & Schulenberg, 2012).

Powers and colleagues (2001a) developed the Take Charge intervention to improve self-determination. A combination of coaching, mentoring, and parent support were used to help

participants apply self-determination skills to set and achieve their goals. Geenen and colleagues (2013) performed a longitudinal, randomized control study to evaluate the efficacy of Take Charge. A total of 133 youth were randomly assigned to either the intervention group (where participants received coaching on self-determination, goal achievement and mentoring from successful adult foster alumni) or the control group (where participants received services as usual). The intervention was successful in increasing educational planning knowledge/engagement and academic performance, and decreasing anxiety and depression among experimental group participants from pretest to posttest.

In another study, sixty-three students with learning, emotional and health impairments took part in the Take Charge intervention. Upon completion, intervention participants showed significantly higher levels of transition, planning, knowledge, and engagement; higher academic goal achievement, and higher levels of empowerment compared to the control group (Powers et al., 2001a; Powers et al., 2001b). Similar studies have been conducted with foster youth. The foster care system provides little opportunity for youth to exercise autonomy and agency, thereby prohibiting them from actively determining future plans. Children in foster care have little if any input into where they live and whom they live with. Geenen and Powers (2007) evaluated the subjective experiences of youth who aged out of foster care and found that “foster youth and alumni described a frustrating paradox where they have little to no opportunity to practice skills of self-determination while in care, but are expected to suddenly be able to control and direct their own lives once they are emancipated” (p. 1090). Participants expressed a longing to be involved in the decision making process, and to have their opinions and desires considered when planning for their futures. Results illustrated that giving youth the opportunity to “take responsibility and ownership for their lives is key to successful transition” (Geenen & Powers,

2007, p. 1090). Rather than making decisions for adolescents, research recommends that adults work collaboratively with youth, providing guidance and support while allowing youth to make their own decisions and navigate their way from adolescence into adulthood.

In another study, Powers and colleagues (2012) conducted the My Life longitudinal study. This study followed 69 youth who were either in special education and foster care for one year. The intervention encompassed 50 hours of coaching to teach self-determination skills designed to achieve the student's self-determined goals. The youth also participated in three group mentoring sessions with successful foster care alumni. At intervention completion and one year follow up, participants who had been in the experimental group reported higher levels of self-determination and greater quality of life (Powers et al., 2012). These studies illustrated the importance youth engagement and the develop self-determination for youth who experience additional barriers than their peers.

Life Skills

Life skills are closely linked to self-determination and are essential for adulthood. To live independently one needs to be able to perform a variety of basic skills, such as cooking, cleaning, laundry, personal hygiene, basic financial management, organization, and scheduling. These skills are typically learned through the process of trial and error while still in the family home (Reid, 2007). Life skills training in the family home provides adolescents with the opportunity to practice, make mistakes, and learn while still having the support of an adult. Perret-Clermont (2004) asserts that adolescence is a time that “can offer most valuable opportunities to learn life skills and ground self-identity” (p. 4). However, many foster adolescents and emerging adults have limited opportunities to learn these valuable skills and are expected to live independently at a young age, leaving them unsupported with more dire consequences. For instance, youth who are still living in the parental home can make mistakes

with money, employment, and relationships and still have access to resources to meet their needs, while if an emancipated foster youth made the same mistakes and s/he may end up without adequate resources for food, housing, or basic needs. Youth who are expected to be self-sufficient by the time they reach the age of majority have limited opportunity to safely explore their world and make mistakes.

Community and social connection are beneficial for youth moving forward into adulthood. Non-foster youth rely heavily on family support to mediate the uncertainty and difficulties of this time (Settersten, Furstenberg, & Rumbaut, 2005); as such, interventions ought to support foster youth in developing strong family and/or community connections. Moreover, teaching youth self-determination and life skills and providing youth with opportunities to practice these skills are important steps for future success. Exploration with the support of an adult enables youth to develop self-determination, and empowers them to explore freely and develop a sense of autonomy (Arnett, 2000). Life skill training and interventions can help prepare youth for independent living and adulthood. “Life skills education provides knowledge, skills, values and attitudes through the four pillars of learning: learning to know, learning to do, learning to live together and with others, and learning to be” (Delors et al., 1996; as cited in Bernhardt, Yorozu, & Medel-Anonuevo, 2014, p. 282). Providing youth with life skills training offers emerging adults with a strong foundation for exploration and stability into adulthood.

Mental Health

It is well documented that abuse, neglect, maltreatment, and domestic violence generate psychological distress and put children at risk for developing serious mental health issues (Buckner, Beardslee, & Bassuk, 2004; Burge 2007; Burns et al., 2004; Fergusson and Lynskey 1997; Flynn, Ghazal, Legault, Vandermeulen, & Petrick, 2004; Harman Childs, & Kelleher, 2000; Hussey, Chang, & Kotch, 2006). The emotional distress cause by childhood trauma does

not disappear once a child is removed from immediate danger, but rather is often magnified through systemic limitations. History of childhood trauma coupled with loss of family and familiar environment, potential rejection from foster parents/siblings, and the stigma of being in care, have an additive effect on the already vulnerable youth (Pecora, White, Jackson, & Wiggins, 2009).

“Most youth in foster care have traumatic family histories and life experiences that result in increased risk for emotional and behavioural disorders” (Pecora, et al., 2009; p. 134). As such, it is not surprising that children in foster care often struggle with emotion and behaviour regulation. While abuse and neglect can lead to both internalizing behaviours (e.g., low self-esteem, social withdrawal, anxiety, depression, etc.) and externalizing behaviours (e.g., aggression, hyperactivity, inattention, etc.) (Mills, 2004), neglected children are more likely to exhibit internalizing behaviours, have a more difficult time making friends, and are more socially isolated (Hildyard & Wolfe, 2002); whereas children who experience sexual abuse, physical abuse, and witness domestic violence are more likely to exhibit externalizing behaviours such as aggression, attention deficit hyperactive disorder (ADHD), and behavioural problems (Hildyard & Wolfe, 2002; Holt, Buckley, & Whelan, 2008). An unfamiliar environment laden with instability, non-permanence, and potential rejection often exacerbates these behaviours.

Poor mental health is a common problem for foster youth alumni who exhibit disproportionately high levels of mental health issues compared to the general population (Braod, 2005). A number of studies have been conducted to gain a better understanding of mental health in foster youth and alumni. Hamilton and colleagues (2011) looked at psychological distress, service utilization, and prescribed medication among 3,497 grade 7-12 students using the 2009 Ontario Student Drug Use and Health Survey. Results indicated that youth with child welfare

involvement were more likely to report greater psychological distress, had more doctors' visits, and were more likely to be prescribed medication for anxiety and/or depression than their peers without child welfare involvement (Hamilton, Paglia-Boak, Wekerle, Danielson & Mann, 2011).

In another study, McMillan and colleagues (2005) used the Diagnostic Interview Schedule for the DSM-IV to assess the psychological wellbeing of 373, 17-year old Missouri foster youth. They found that 37% of participants met the DSM-IV criteria for a psychiatric disorder in the past year, and 61% met the criteria for a disorder over their lifespan, with the most prevalent disorders being depression, ADHD, oppositional defiant disorder, and conduct disorder (McMillen et al., 2005). Similarly, White and colleagues (2007) surveyed 188 foster (14 - 17 years of age) in the Casey Field Office Mental Health Study. Of those surveyed, 63.3% of youth had at least one mental health diagnosis and 22.8% had three or more diagnoses. The study revealed lifetime prevalence rates of 29% for oppositional defiant disorder, 20.7% for conduct disorder, 19% for major depressive disorder, and 15.1% for ADHD. Additionally, approximately one fifth of youth indicated that they had at least one major depressive episode or panic attack (19% and 18.9% respectively). Over one-third (35.8%) indicated that they had experienced at least one mental health disorder in the last year, with 7.7% reporting three or more distinct mental health problems (White, Havalchak, Jackson, O'Brien, & Pecora, 2007). Females presented with significantly more internalizing disorders compared to males (White et al., 2007).

While exact prevalence rates vary across studies, it is clear that young adults who have been through the foster care system tend to have more mental health issues and substance abuse problems than the general population. Dealing with mental health issues can make independent living difficult (Fowler et al., 2009). One study found that approximately one third of foster

alumni had been diagnosed with some sort of mental health issue (Courtney et al., 2001). More specifically, the Foster Care Alumni study found that over half the participants who had recently exited foster care struggle with mental health problems, with 25% diagnosed with PTSD and 20% with depression (Pecora et al., 2005). This could lead to serious implications for foster youth and alumni. Substance use, misuse, and abuse are common among foster alumni; drugs and alcohol are often used to escape the emotional and mental turmoil associated with histories of neglect and abuse (English & Grasso, 2000). Barth (1990) found that 56% of youth used illegal drugs while in care, and 33% encountered drug and alcohol related problems after leaving care.

Financial Support

Financial security is a challenge for many foster alumni. Overall, former foster youth tend to have lower earnings, greater welfare use, and higher poverty rates than the general population (Buehler, Orme, Post, & Patterson, 2000; Goerge et al., 2002; Macomber et al., 2008). Increased financial support for foster youth transitioning out of care could mitigate some of these adverse outcomes. Schoeni and Ross (2005) point to the importance of both tangible support (i.e., housing, food, educational expenses, and direct cash assistance) and intangible support (i.e., advice, guidance, and encouragement) in contributing to a successful transition to adulthood. “For the majority of youth, the transition to adulthood represents a process that takes place over a period of time with the support of family and friends” (Reid, 2007, p. 34). Without these supports youth may experience a premature transition to adulthood, as they are expected to be self-reliant far before their peers. According to the 2011 Canadian Census, 59.3% of Canadians age 20 to 24 still reside in their parental home, compared to only 41.5% in 1981. Among 25-29 year olds, 25.2% still reside with their parents - almost double the number of those living at home in 1981 (11.3%) (Statistics Canada, 2012).

It is now common for young adults to remain at home and rely on parents for financial and social support into their mid to late 20's (Rutman, et al., 2005). Living at home longer and relying on parental support during emerging adulthood allows for more safety and security, while also allowing for the continued development of self-determination and life skills. In a recent study, the Vancouver Foundation (2013) surveyed 1820 British Columbians "to gain a better understanding of public attitudes, values and perceptions about youth transitioning to adulthood" (p. 3). According to this survey, 70% of British Columbians do not think that 19 year olds have the essential skills or resources to support themselves away from home. Parents of 19 - 28 year olds living at home indicated that they provide shopping and groceries (69%), free rent (69%), post-secondary education funding (60%), living supplies (56%), transportation (55%) and job advice (53%) for their adult children. Further, 80% of parents who have young adults (19 - 28 year olds) living away from home continue to provide some form of financial assistance and other supports. For the majority of young adults, parental financial support continues throughout emerging adulthood, regardless of living arrangements (Vancouver Foundation, 2013). Even parents with children under 19 years of age anticipate supporting their children into adulthood, with 83% expecting to contribute to their children's post-secondary education (Vancouver Foundation, 2013). Transitions are made easier through parental support. When asked, the majority of adults surveyed (68%) supported extending government assistance for foster children until at least 21 years of age (Vancouver Foundation, 2013). Although this still would not meet the national average age that parents are providing supports for their adult children, it would provide additional support for young adults as they transition out of care and begin living on their own.

Summary

Based on this review of the literature there is a need to evaluate interventions that target the aforementioned eight key domains for improving outcomes for adult foster alumni success (i.e., education, housing, relationships, identity, youth engagement, life skills, mental health, and financial support), and to isolate intervention components in order to gain a better understanding of what types of programs and which targeted areas yield the greatest benefit for transitioning foster youth. According to Settersten and Ray (2010), there is a misconception that adulthood requires independence and self-sufficiency, when in fact it is crucial for youth to have support systems and stable relationships to transition into adulthood. In the past, there was a push towards youth achieving independence as they entered adulthood; however, more recent research supports the idea of connectedness (Goodkind, Schelbe, & Shook, 2011) and promotes interdependence rather than independence for a successful transition (Propp, Ortega, & Newheart 2003). Research suggests that there should be a paradigm shift from the idea of obtaining independence to interdependence (Propp et al., 2003). Youth need both self-reliance and external support (Propp et al., 2003) for transitioning out of the foster care system. Community involvement and connection can increase a sense of belonging and mental health. Independence is often framed as an ideal for youth to aspire to as an indicator of self-reliance, but this perspective also rejects connections that would improve the socio-emotional growth of adolescents (Samuels & Pryce, 2008).

Though a number of social programs have been developed in North America, we have yet to see a large-scale improvement for youth who transition out of child welfare systems. This is problematic and more research is needed in order to test the efficacy of programs. The pathways that lead former foster youth to these outcomes may not be fully understood, but what

is clear is that children who grew up and aged out of child welfare systems are in need of support both socially and financially (Reid, 2007).

Chapter 3: Methodology

Methodology and Research Design

The research methodology for this review is consistent with the Cochrane Collaborative guidelines for systematic literature review and meta-analysis (Higgins & Green, 2011). Meta-analysis was used to evaluate the efficacy of interventions that improve outcomes for youth transitioning or aging out of North American foster care systems. Meta-analysis is a statistical procedure designed to standardize and compare the results of multiple studies. Gliner, Morgan, and Harmon (2003) define meta-analysis as “a research synthesis that uses a quantitative measure, effect size, to indicate the strength of relationship between the treatments and dependent measures of studies making up that synthesis” (p. 1376). A meta-analytic approach has numerous advantages in research. This method takes into account the larger picture when looking at a particular area of interest (Selby & Vaske, 2008), allowing researchers to statistically compare differences between studies, and generating a more thorough depiction of the effectiveness of interventions (Selby & Vaske, 2008). Moreover, “[m]eta-analysis provides an effective way to summarize results of a large number of studies and can uncover associations not previously identified” (Littell, Corcoran, & Paillai, 2008).

A systematic literature review was conducted to identify the most rigorous research studies on youth transition interventions. The Cochrane Collaborative defines a systematic review as “A review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. (Cochrane Collaboration, 2017). Though a meta-analysis can be conducted without performing a systematic literature review, this approach may be problematic as it is subject to publication bias, self-selection, and limited ability to replicate

results (Littell et al., 2008). As such, a systematic approach was selected for the current study in an attempt to locate both published and unpublished research studies.

Criteria for considering studies for this review

Due a vast body of research, and variation between child welfare systems across North America, it was essential to implement rigorous guidelines for inclusion. For this reason, only randomized control trials (RCT) and quasi-experimental designs with parallel cohorts were included in this review. In order to accurately assess program efficacy, only interventions including a pretest-posttest design were considered. Although it is possible to conduct a meta-analysis using pretest-posttest data from a one-group design, these studies tend to produce higher positive effects, inadvertently inflating the overall effect size (Durlak, 1995).

Studies

Studies were only included if they overtly targeted or measured outcomes for youth between the ages of 14 and 26, in one or more of the following areas: education (e.g. high school diploma, GED, post-secondary or trades enrolment), housing (e.g. homelessness, living with family, own housing, supportive housing), relationships (e.g. social support, mentorship, etc.), identity (e.g. self-exploration, new experiences), youth engagement and self-determination (i.e. employment, goal setting, skill building, etc.), life skills (e.g. daily maintenance, coping skills, financial management, scheduling, etc.), mental health (internalizing or externalizing behaviours), and financial support (tuition waivers, housing subsidy, medical, grocery vouchers, etc.). Studies of interventions targeted towards a specific subpopulation (i.e. physical or developmental disabilities, youth forensics, homelessness, pregnancy, etc.), as well as gender based analyses where one gender acts as the comparison group, were excluded.

Outcomes were assessed by (1) youth behavioural outcomes, and (2) youth self-reported outcomes. See table 1 for a complete summary of study inclusion and exclusion criteria.

Table 1: Criteria for inclusion/exclusion

Inclusion	Exclusion
1. English language from Canada and the United States	1. Study findings not in English or study location outside of Canada or the United States
2. Published 1950 or after	2. Published prior to 1950 or abstracts not available
3. RCT and quasi-experimental design with parallel cohorts control or comparison group	3. Studies of insufficient data; commentaries; studies that used statistical analyses to determine effects of changes in but did not include parallel cohorts for comparison of outcomes
4. Services included child welfare	4. Other human service fields, or studies that target a specific subgroup of child welfare, e.g., disability, pregnancy, juvenile justice, etc.
5. Described interventions designed to improve outcomes for young adult transitioning out of child welfare systems.	5. Describes general child welfare interventions or did not describe specific activities undertaken to improve outcomes
6. Included youth between the ages or 14 - 26	7. Included youth under the age or 14 and over the age of 26

7. Reported outcomes that included a behavioural or self-reported experience for the youth	7. Did not report behavioural outcomes for the youth or reported observational data from and external viewer (e.g., service provider, foster parent, teacher etc.)
8. There were visible no flaws in the study methodology or service delivery that deemed likely to threaten the internal validity of the study results	8. The research design or delivery involved a confounding variable which threatens the internal validity of results (e.g., significant difference between groups at baseline, missing statistical data, etc.)

Search Strategy

All searches were conducted using ten databases: Academic Search Complete, Social Work Abstracts, Social Science Full Text, Social Science Abstracts, PsycINFO, PsycArticles, ERIC, CINAL complete, Cochrane Central Register of Controlled Trials, and Cochrane Database of Systematic Reviews. Developing this search strategy was an iterative process. Search terms were initially too broad to determine the scope of available research and were narrowed as more relevant terms were identified. Key words and subject categories were identified from recent studies on foster care and interventions for children in care. The search terms were broken down into three categories: population (e.g. foster care, child welfare, group home), topic (e.g. education, relationship, housing), and intervention (e.g. transition, prevention, program). Table 2 provides an overview of electronic search.

Table 2: Overview of Electronic Search

OVERVIEW	
Interface:	Ebsco
Databases:	Academic Search Complete, CINAL complete, Cochrane Central Register of Controlled Trials Cochrane Database of Systematic Reviews. Dissertation Abstracts International, ERIC, PsycArticles, PsycINFO, Sociological Abstracts, Social Science Abstracts, Social Science Full Text
Date of Search	November 10 – Nov 30, 2015; Jan 16, 2016; July 15, 2016 Jan 17, 2017 (Updated)
Search Terms	Search terms were broken down into four categories: population, topic, and intervention
Study Type	No filters were applied to limit the retrieval of study type No filters were applied to differentiate location of search terms (i.e., title, abstract, author, document etc.) Date filter was added to the updated search to capture documents published between Jan 2015 and Dec 2016.

Limits	No limits were applied to the initial or refined search Date limits were applied to the updated search to target documents between Jan 2015 – Dec 2016.
Search Results	Initial Search: 4686996 Refined Search: 30,888 (9921 after duplicates removed) Updated search: 1080 (316)

The initial search for the current study was conducted in August 2015; it was updated in July 2016, and again in January 2017. As electronic databases yield duplicate results, all documents found were exported into EndNote and the “find duplicates” function was used to remove duplicate documents. A full description of the search strategy used, and relevant dates, is available in Appendix A.

In addition to electronic database searches, backwards citation searches were conducted on all relevant systematic literature reviews, meta-analyses, and selected articles identified throughout the search process. Backward citation search involved hand screening the titles of the reference lists of selected documents. A limited search on the grey literature, including government, university, and private agencies websites was also conducted (See Appendix B for complete list of sites searched). To combat the issue of publication bias, the *Journal in Support of the Null Hypothesis* was hand searched and key authors were e-mailed in an attempt to identify published and unpublished studies with non-significant results that may contribute to the analysis.

Screening and Data Extraction

Electronic database results were screened at three levels: title, abstract, and study. The purpose of such screening was to eliminate documents that were irrelevant or outside the scope of this project. Two independent reviewers conducted screening based on the inclusion/exclusion criteria. Cohen's KAPPA was used to establish inter-rater reliability between raters at each level of screening. KAPPA is a statistical procedure that evaluates agreement while correcting for chance (Cohen, 1960). At the onset of screening, both reviewers evaluated the first 100 articles independently in order to establish sufficient inter-rater reliability to continue with screening. Though there is no universally accepted cut off for KAPPA inter-rater reliability, Landis and Kosh (1977) designate .81 – 1.0 as “almost perfect agreement,” while Fleiss (1981) outlines .75 as “excellent.” These cut-off levels are arbitrary, as KAPPA values tend to be lower when there are fewer articles to code and variability is greater (Bakeman, Quera, McArthur, & Robinson, 1997). For the study at hand, raters achieved a KAPPA of .88, which was deemed sufficient to screen independently. In this case there was only one disagreement; reviewers discussed discrepancies and reached an agreement before moving on to the next phase. As this was a Master level thesis, one main reviewer screened all documents, with a second reviewer screening a randomly selected 10% of documents for inter-rater reliability at each level. Reviewers achieved 100% agreement or KAPPA 1.0 at each level of screening.

Data Analysis

The data extraction tool was adapted from the work of Littell, Campbell, Green, and Toews (2007), and is in line with the Cochrane Collaborative approach for systematic reviews (Higgins & Green, 2011). Data extracted included study characteristics, location, dates,

population, length of study, description of intervention activities, and more. The full extraction tool is available in Appendix C.

All selected research papers were analyzed at the study level in order to ensure that only independent samples were compared (Littell et al., 2008). The methodological quality and characteristics of each study were evaluated using the Cochran Collaborative Grading Recommendations Assessment, Development and Evaluation (GRADE) criteria (Dijkers, 2013). The GRADE criterion was systematically developed to identify bias in study reporting and provide a standard for accountability in reporting (Dijkers, 2013). It has since been adopted by a number of agencies worldwide (e.g. World Health Organization, England's National Institute for Health and Clinical Excellence, the Canadian Task Force on Preventive Health Care, the Norwegian Knowledge Centre for the Health Services, the CDC's Advisory Committee on Immunization Practices, the Kaiser Permanente National Guideline Program; Rehfuss & Akl, 2013). To ensure the methodological rigor for this review, studies were assessed for bias - using the GRADE criterion - in seven areas: selection, allocation concealment, performance, detection, attrition, reporting, and other biases. These seven areas contribute to the overall validity of each respective study. In the case of missing data, an attempt to contact the study's authors was made.

Based on the conceptual framework identified in the literature review, studies that met the inclusion criteria were grouped and coded based on the type of intervention and outcome evaluated (Littell et al., 2008). Each meta-analysis was assessed for its conceptually distinct outcome (e.g. relationship, housing, education, life skills, mental health, etc.). This allowed for differentiation of studies and potential isolation of the intervention components that were effective in improving outcomes.

Although every attempt to reduce publication bias was made through the search and extraction process, a statistical analysis for assessing publication bias was conducted. Whenever possible, the fail-safe n formula was used to estimate the number of additional studies needed to change the results of the meta-analysis (Orwin, 1983).

Procedures

This study took place in eight stages. First, a preliminary review of the literature was conducted to identify current transition research and key terms. Second, a search strategy was developed, and terms identified in the first stage were expanded and then narrowed based on relevance. Third, an electronic database search was conducted and all identified documents were extracted to EndNote, where duplicates were removed. Fourth, two independent reviewers screened documents at three levels: titles, abstracts, and document. Titles were screened to eliminate documents that were unrelated to child welfare research. Abstracts were then screened to eliminate documents that did not involve child welfare transition programs, or that were descriptive or qualitative in nature. Full documents were screened based on the aforementioned inclusion/exclusion criteria. Fifth, grey literature and backward citation searches of key articles were conducted and key authors were contacted to identify unpublished studies. Sixth, relevant data was extracted from studies and assessed for Bias using the GRADE criteria. When data was not available every attempt to contact study authors was made to obtain missing and unpublished data. Seven, study data was coded based on intervention type and outcome measured. Finally, studies were assessed for compatibility, studies and outcomes that were statistically and conceptually similar were compared using meta-analysis techniques.

Chapter 4: Results

Search Results

The initial electronic search, conducted in August 2015, yielded 4,686,996 results. More specific key words and concepts were used to narrow the search based on relevance and manageability. Seven search strings were used before the final search strategy was chosen. The final electronic search yielded 9701 documents after duplicates were removed; the search was updated in July 2016 and January 2017, capturing an additional 220 and 316 documents respectively. Researchers hand-searched 144 grey literature websites and contacted 7 key authors. Twelve documents, reporting eight studies, met the inclusion criteria for this review. Figure 1 contains a breakdown of the search results at each stage of screening.

Of the eight studies included in the current review, there were six distinct interventions identified. The first four interventions identified in this review were part of the John H. Chafee Foster Care Independent Program (CFCIL). The CFCIL was created in 1999 as part of the Foster Care Independence Act. This program provides funding and grants for youth transition programs that address concrete needs (e.g., employment, education, housing) as well as emotional needs (e.g., mentorship, individualized plans) across the United States (Courtney, et al., 2008a):

1. Life Skills Training (LST) – Los Angeles County, California (Courtney, et al., 2008a)
2. Intensive Care Management & Mentoring (ICMM) – Massachusetts (Courtney, Zinn Johnson, & Malm, 2011a)
3. Early Start to Emancipation Preparation (ESTEP) – Los Angeles County, California (Courtney, et al., 2008b)

4. Independent Living & Employment Services program (IL-ES) – Kern County, California (Courtney, Zinn, Koralek, & Bess, 2011b).

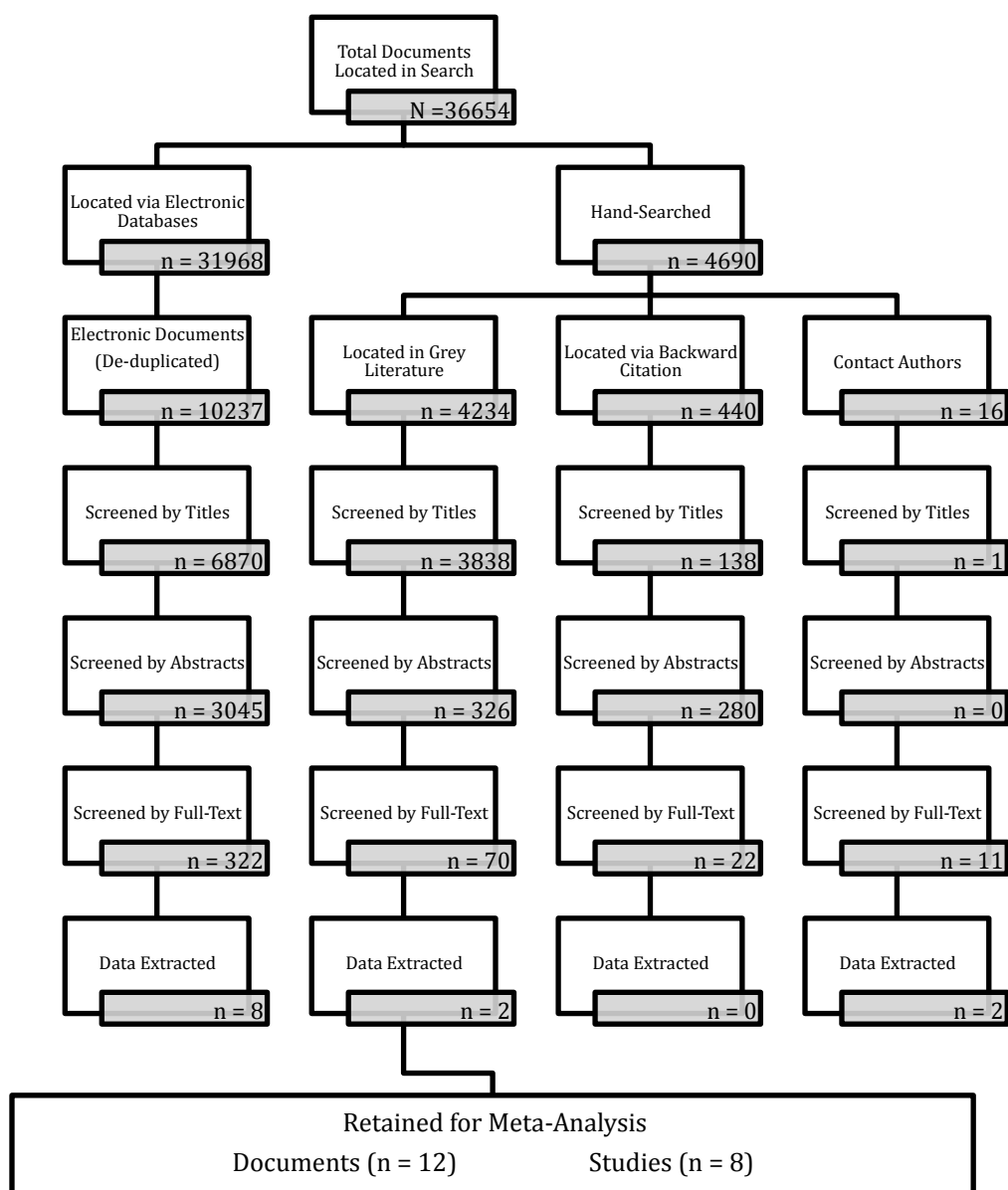
Three studies conducted and assessed variations on the TAKE CHARGE intervention model for developing self-determination.

5. TAKE CHARGE (TC) (Geenen et al., 2013)
6. Better Future (BF) (Geenen, Powers, & Phillips; 2015)
7. My Life (ML) (Powers et al., 2012)

The final intervention, took a trauma-informed approach, empowering youth to develop interdependence.

8. Creating Ongoing Relationships Effectively (CORE) (Nesmith & Christophersen, 2014).

Figure 1: Breakdown of Search Process Results



Excluded Study

One study met the inclusion criteria for the current review, but was conceptually heterogeneous to the other studies in both intervention model and outcomes. This study took a

relational approach to foster interdependence into adulthood. As a result, this study will be included in the characteristics of studies but was excluded from the meta-analysis.

The Creating Ongoing Relationships Effectively (CORE), evaluated the efficacy of creating ongoing relationships for youth in foster care (Nesmith & Christopherson, 2014). Over a 12 – 15 week period, youth (n = 88; male = 62%, female = 38%) and their foster parent would share a weekly meal together while being presented with information on relationship building skills (i.e., emotion regulation, distress tolerance, interpersonal effectiveness, mindfulness, and anger management). Following the meal the youth and foster parent would meet separately to discuss what they had learned, and then meet together again. Families would practice the skills learned throughout the remaining weeks. Youth who successfully completed the program then took on a leading role as educator for subsequent sessions.

Included Studies

Chapin Hall and the National Opinion Research Center were contracted to conduct a multi-site review of the Chafee Foster Care Independent Program Independent Living Programs (ILP). As such, although the interventions themselves differed, similar populations, methods of implementation, and outcome measures allowed for evaluation across interventions. In addition to the final reports put forth by Courtney and colleagues (2008a; 2008b; 2011a; 2011b), Zinn and Courtney (2014; 2015) published two additional articles outlining the findings of the ESTEP and IL-ES programs. Greeson and colleagues conducted secondary data analysis using multilevel longitudinal modeling to estimate social support over time in the LST (Greeson, Garcia, Kim, Thompson, & Courtney, 2015a) and ICMM (Greeson, Garcia, Kim, & Courtney 2015b) programs. As the data in these studies is not independent, for the purposes of the current study, data will be extracted from the original studies whenever possible.

The TAKE CHARGE model incorporates coaching and mentoring from young adults in college who were previously in foster care to teach self-determination skills to youth. (Powers et al., 2001). Though this intervention was originally designed for youth with disabilities, it has been adapted for foster youth who are in special education (Geenen, et al., 2013; Powers 2012) and foster youth experiencing mental health challenges (Geenen et al., 2015). A brief description of studies is provided below.

Characteristics of Studies

Life Skills Training program (LST) combined classroom curriculum and extensive outreach to provide life skills training for (n = 467, male = 41.5%) youth ages 16 and older. Youth attend a five-week program, twice weekly three-hour classes at one of 19 community colleges across Los Angeles County. The focus was on building skills in seven areas: education, employment, daily living, choices and consequences, interpersonal, computer, and survival. In addition to attending classes, youth worked closely with their outreach worker and attended a community based life skill building practicum (Courtney, et al., 2008a).

Intensive Care Management & Mentoring (ICMM) is an outreach program for (n = 194, male = 33%) youth 15 – 20 years of age who are currently living in intensive foster care. Youth work closely with their outreach workers to develop individualized plans and develop necessary skills for independence in adulthood. Outreach workers meet with youth at least once a week on an ongoing basis, focusing on the following areas: education, employment, life skills, developing permanent connections and support systems, financial assistance, housing, physical and mental health, substance abuse treatment, relationship-building through mentoring, and, for youth who have not yet achieved permanency, encouraging youth to remain in foster care after 18 (Courtney, et al., 2011a).

Early Start to Emancipation Program (ESTEP) is a home-based tutoring program for (n = 445; male = 45.6%) youth 14 – 15 years of age who are one to three years behind their same age peers in reading and/or math. The goal of this program is to provide youth with an early start to emancipation preparations. College educated tutors meet with students twice a week (up to 50 hours) for 1 year. Youth on average received 17 hours of reading and 8 hours of math tutoring during the intervention (Courtney, et al., 2008b).

Independent Living – Employment Services program (IL-ES) provides individualized job search counselling and preparation for (n = 254, male = 42.9%) foster youth over 16 years of age. Services offered to youth include job search preparation and assistance, employment related skill workshops, shopping for interviews and employment (Courtney, et al., 2011b).

The following three studies implemented variations of the same intervention: TAKE CHARGE. Geenen and colleagues (2013) (n = 123, f = 46.3%) and Powers and colleagues (2012) (n = 61, female = 41%) both evaluated the My Life intervention, which is based on the TAKE CHARGE model to enhance self-determination for foster youth in special education. My Life is a one-year program that provides an average of 50 hours of coaching to assist foster youth, in special education programs. Youth aged 14 – 18 years learned to apply self-determination skills and application strategies to identify, pursue, and achieve their goals. This intervention also incorporates four mentoring workshops with other program youth and adult foster care alumni.

Geenen and colleagues (2015) implemented the Better Futures intervention, which was adapted from the TAKE CHARGE model (Geenen et al., 2015). The Better Futures intervention was a 10-month program that includes bimonthly peer coaching, four mentor workshops, and a college campus visit. Peer mentors were under the age of 28, currently enrolled in a higher

education program, and shared similar experiences in foster care and mental health. Mentor workshops covered information on mental health and college process/applications/scholarships with foster care alumni, peer coaches, and other youth in the program. Youth (n = 67, female = 52.2%) participated in a 4-day 3-night summer institute in which they lived in college dorms, and participated in a variety of activities (e.g., university and college tours, facilitated discussions in higher education, mental health support services (or something describing what related to mental health they participated in), accommodation resource discussions, and transitional resource opportunities). See table 3 for a full breakdown on study characteristics.

Table 3: Characteristics of Studies

Characteristics of studies

Study	Intervention	Compare	I/group	C/group	Data Collection	Outcome
*Courtney et al. (2008a); Greeson et al. (2015a)	Life Skills Training Program (LST)	Services as usual	Foster care Group home 17 yrs n = 196 (m = 42%)	Foster care Group home 17 yrs n = 215 (m = 41%)	BL: 2003 – 2004 FU1: 12 months FU2: 24 months	Education Housing Engagement Life Skills Financial
*Courtney et al. (2011a); Greeson et al. (2015b)	Intensive Care Management & Mentoring (ICMM)	Services as usual	Intensive foster care 15-20 yrs (M age = 16.92) n = 88 (m = 32%)	Intensive foster care 15-20 yrs (M age = 16.85) n = 91 (m = 34%)	BL: 2005 - 2007 FU1: 12 months FU2: avg. 22 months	Education Housing Engagement Life Skills Financial
*Courtney et al. (2008b); Zinn & Courtney (2014)	Early Start to Emancipation Preparation (ESTEP)	Services as usual	Foster care; Kinship care; Group home; 14-15 yrs (M age = 14.5) n = 212 (m = 46%)	Foster care; Kinship care; Group home; 14-15 yrs (M age = 14.6) n = 190 (m = 46%)	BL: 2003 – 2004 FU1: 11 - 13 months FU2: 26.8 months	Education
*Courtney et al. (2011b); Zinn & Courtney (2015)	Independent Living - Employment Services (IL-ES)	Services as usual	Foster care 16 -21 (M age = 15.99) n = 122 (m = 38%)	Foster care 16 -21 (M age = 16.02) n = 107 (m = 48%)	BL: 2003 – 2006 FU1: 12 months FU2: 24 months	Education Housing Engagement Life Skills Financial
*Geenen et al. (2013)	Self-determination for special education TAKE CHARGE (TC)	Typical education services	Foster care 14-17 yrs. (M age = 15.79) n = 60 (f = 40%)	Foster care 14-17 yrs. (M age = 15.24) n = 63 (f = 52%)	BL: 2006 - 2010 PI : 9 months FU1: 18 months	Education Engagement Mental Health Financial
*Geenen et al. (2015)	Self-determination mental health Better Futures (BF)	Services as usual	Foster care 16-18 yrs. (M age = 16.74) n = 36 (f = 52%)	Foster care 16-18yrs (M age = 16.78) n = 31 (f = 52%)	BL: 2009 - 2013 P1: 1 month PT: 10 months FU1: 16 months	Education Identity Engagement Mental Health

**Nesmith & Christophersen (2014)	Creating Ongoing Relationships Effectively (CORE)	Traditional independent living services	Foster care 14 – 19 yrs (M age =15.3) n = 58 (f = 36%)	Foster care 14 – 19 yrs (M age = 15.2) n = 30 (f = 40%)	BL: 2009 - 2012 FU: 9 – 11 months	Relationship
*Powers et al. (2012)	Self-determination for special education My Life (ML)	Independent Living Program (ILP)	Foster care 16 -17 yrs (M age = 16.9) n = 29 (f = 41%)	Foster care 16- 17 yrs (M age = 16.8) n = 32 (f = 41%)	BL: 2003 - 2007 PT: 12 months FU1: 24 months	Education Housing Identity Engagement Mental Health Financial

Note. * RCT trial, ** parallel cohorts

All studies found were conducted in the USA

n = number participants at assessed at baseline

f = female; m = male. Gender breakdown presented in same form as original study.

All data collection times are presented in months

BL = baseline; P1 = phase 1, PT = post-test, directly after intervention completed; FU = follow-up from baseline

Six studies incorporated educational components into their interventions (Courtney et al., 2008a; Courtney et al., 2008b, Courtney et al., 2011a; Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). Of these, three took place within the student's high school (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012), two included visiting college campuses (Courtney et al., 2008a; Geenen et al., 2015), one involved exploring educational options with an outreach worker (Courtney et al., 2011a), and one entailed home based tutoring (Courtney et al., 2008b). Only one study (Courtney et al., 2011a) addressed housing as part of the intervention, and encouraged youth to voluntarily remain in care past their 18th birthday if they had not yet achieved permanency.

Five studies took a relational approach (Courtney et al., 2011a; Geenen et al., 2013; Geenen et al., 2015; Nesmith & Christopherson, 2014; Powers et al., 2012). Courtney and colleagues (2011a) encouraged ongoing relationship with youth outreach worker. Geenen and colleagues (2013; 2015) and Powers and colleagues (2012) used near peer mentoring for young adults in college who are also foster care alumni. Nesmith and Christopherson (2014) involved foster parents to create ongoing supportive connection into adulthood.

Identity and youth engagement were present in all eight interventions, though three of these built their programs on the principles of youth self-determination (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). While some variation of life skills was taught in all interventions, tangible life skills were taught and evaluated in three of the interventions (Courtney et al., 2008a; Courtney et al., 2011a, Courtney et al., 2011b). Five interventions addressed youth mental health (Courtney et al., 2011a, Geenen et al., 2013; Geenen et al., 2015; Nesmith & Christophersen, 2014; Powers et al., 2012), with three of these studies assessing mental health outcomes (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). Though no intervention offered financial support, three financial indicators of success and hardship were assessed (Courtney et al., 2008a; Courtney et al., 2011a; Courtney et al., 2011b). See table 4 for a list of intervention characteristics and outcome measure.

Table 4: Intervention Characteristics

Study	Program Activities	Duration	Outcomes Measures	Source
Courtney et al. (2008a); Greeson et al. (2015a)	College classroom setting	5 weeks	High school diploma/ GED	Student records
		2 times a week	College enrolment	Student records
	Community based practicum Life skills	3 hours each	Employment	Self-report
			Earnings and net worth	Self-report
			Experienced Hardship	Self-report
			Financial assistance	Self-report
			5-item hardship scale	Self-report
			Number of residential moves	Self-report
			Homelessness since baseline	Self-report
			Preparedness questionnaire	Self-report
			Self-Report Delinquency Scale	Self-report
			Pregnancy	Self-report
			Financial accounts	Self-report
			Important documents	Self-report
Courtney et al. (2011a); Greeson et al. (2015b)	Outreach worker education finances voluntary stay in care financial for IL courses employment services housing assistance access to health services substance abuse treatment mentor/connecting with adults	16 months avg. at least once a week	Currently in high school	Self-report
			High school diploma/GED	Student records
			College enrolment	Student records
			Grade completed	Self-report
			Employment	Self-report
			Earnings and net worth	Self-report
			Experienced Hardship	Self-report
			Financial assistance	Self-report
			3-item hardship scale	Self-report
			Number of residential moves	Self-report
			Current living arrangements	Self-report
			Homelessness since baseline	Self-report
			Preparedness questionnaire	Self-report
			Self-Report Delinquency Scale	Self-report
			Pregnancy	Self-report
			Financial accounts	Self-report
			Important documents	Self-report

Courtney et al. (2008b); Zinn & Courtney (2014)	Home-based tutoring individualized	12 months twice a week 50 hours	Woodcock-Johnson Letter-Word Identification Calculation Passage Compression Grade completed High school diploma/GED GPA	Self-report Self-report Self-report
Courtney et al. (2011b); Zinn & Courtney (2015)	Individualized one to one assistance workshops shopping interview clothes job search assistance	24 months	Currently in high school High school diploma/GED College enrolment Grade completed Employment Earnings and net worth Experienced Hardship Financial assistance 3-item hardship scale Number of residential moves Homelessness since baseline Preparedness questionnaire Self-Report Delinquency Scale Pregnancy Financial accounts Important documents	Self-report Student records Student records Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report
Geenen et al. (2013)	Individualized coaching self determination self identified goals Group mentorship other intervention youth adult foster alumni	12 months 33 hours coaching 4 mentor workshops	Postsecondary preparation Career development Accomplishments Goals Homework hours AIR Self-Determination Scale AIR: Student AIR: Teacher AIR: Parent Educational Planning Assessment (EPA) EPA: Student EPA: Teacher EPA: Parent School Attitude Measure GPA Credits towards graduation Teacher Report Form Child Behaviour Checklist Youth Self Report: Anxiety	Self-report Self-report Self-report Self-report Self-report Self-report Teacher-report Foster parent-report Self-report Teacher-report Foster parent-report Self-report School records School records Teacher-report Self-report Self-report
Geenen et al. (2015)	Individualized coaching self determination self identified goals peer support for mental health college foster care alumni Group mentoring other intervention youth adult foster alumni in college	10 months 4 day, 3 night university visit bimonthly coaching 4 mentor workshops	Postsecondary preparation Arc Self-Determination Scale AIR Self-Determination Scale Youth Empowerment Scale-Mental Health Mental Health Recovery Measure Quality of Life Questionnaire Hopelessness Scale for Children Career Decision Self-Efficacy Scale Assessing Barriers to Education Transition Planning Assessment Teachers Report Form Child Behaviour Checklist	Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report Self-report
Nesmith & Christophersen (2014)	Relationship development skill building with social worker and psychologist and foster parent	12 – 15 weeks weekly individual weekly w/foster parent	Relationship Competency Assessment Quality Youth Relationship Assessment	Self-report Self-report
Powers et al. (2012)	Individualized coaching self determination self identified goals Group mentorship other intervention youth adult foster alumni in college	12 months 50 hours coaching 4 mentor workshops	Outcome Survey Accomplishments Goals Transition services used Independent living activities Arc Self-Determination Scale	Self-report Self-report

Risk of bias

Each study assessed six aspects of bias as described by the GRADE criteria: selection, performance, detection, attrition, reporting, and other. All authors were contacted and provided additional information for assessing bias. The level of bias across 8 studies is presented in Table 5.

Table 5: Risk of Bias Assessment

Study	Selection bias		Performance bias	Detection bias	Attrition bias	Reporting bias	Other bias
	Random sequence	Allocation concealment					
**Courtney et al. (2008a); Greeson et al. (2015)	Low	Low	High	Unclear	Low	Low	High
**Courtney et al. (2011); Greeson et al. (2015b)	Low	Low	High	Low	Low	Low	High
**Courtney et al. (2008b); Zinn & Courtney (2014)	Low	Low	High	Low	Low	Low	High
**Courtney et al. (2011); Zinn & Courtney (2015)	Low	Low	High	Low	Low	Low	High
*Geenen et al. (2013)	Low	Unclear	High	Low	Low	High	High
*Geenen et al. (2015)	Low	Unclear	High	Low	Low	High	High
*Nesmith & Christophersen (2014)	High	High	Low	High	Low	High	High
*Powers et al. (2012)	Low	Unclear	High	Low	Low	High	High

* Author provided additional information

** Attempt to contacted author for additional information

Selection Bias.***Random Selection.***

Seven studies were rated as low on random assignment bias. All but one study used computer generated random number sequencing to allocate assignment. One study was rated as high risk of bias (Nesmith & Christophersen, 2015). As this study was quasi-experimental design, cluster sampling was used. A comparison matched and selected based on demographics, type of foster care agency, population, and geographical boundaries. Participants were sampled from discrete locations making crossover and group detection unlikely.

Allocation concealment.

Four studies were rated as low for allocation concealment. Courtney and colleagues (2008a; 2008b; 2011a; 2011b) used central allocation. Three studies were rated as unclear (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012); these studies were randomized post baseline assessment using their subject id numbers. One study was rated high for allocation concealment as it predetermined which participants would be in which group based on location ((Nesmith & Christophersen, 2015).

Performance bias (blinding groups).

Seven studies were rated high risk of bias, as participants in these studies were aware of their allocation (Courtney et al., 2008a; Courtney et al., 2008b; Courtney et al., 2011a; Courtney et al., 2011b; Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). However, due to the nature of field-based research, allocation concealment can be challenging in field-based research with minors. One study was rated low risk of bias as cluster sampling was used, and there was no interaction between group participants (Nesmith & Christophersen, 2015).

Detection bias.

Six studies were rated low risk of performance bias due to blinding of study personnel. However, only four studies explicitly mentioned blinding of study personnel (Courtney 2011a; Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). Courtney and colleagues (2008b; 2011a; 2001b) conducted interviews via computer; thus it was unlikely that a lack of blinding would have affected the outcomes. One study was rated high risk of detection bias (Nesmith & Christophersen, 2015). In this study interviewers were aware of which group they were interviewing; however, in an attempt to reduce bias each interview was tape recorded and independently reviewed. One study was rated as unclear because there was not enough information to assess whether blinding of interview personnel took place, or if any additional measures were taken to minimize performance bias (Courtney, et al., 2008a).

Attrition bias.

All studies were considered low risk for attrition bias, with greater than 80% retention at follow-up.

Reporting bias.

Four studies were found to be at low risk of reporting bias (Courtney et al., 2008a; Courtney et al., 2008b; Courtney et al., 2011a; Courtney et al., 2011b). Another four studies were considered high risk of reporting bias, as these did not provide data on nonsignificant results (Geenen et al., 2013; Geenen et al., 2015; Nesmith & Christophersen, 2015; Powers et al., 2012).

Other bias.

There was a high risk of other bias in all eight studies examined (Courtney et al., 2008a; Courtney et al., 2008b; Courtney et al., 2011a; Courtney et al., 2011b; Geenen et al., 2013;

Geenen et al., 2015; Nesmith & Christophersen, 2015; Powers et al., 2012). Studies all had multiple recruitment points for participants. Courtney and colleagues (2008a; 2008b; 2011b) experienced crossover rates of 26.6%, 4%, and 9.3% respectively, where participants assigned to the comparison group accessed intervention services. The remaining studies had relatively small sample size and data was collected at multiple point points over three ($n = 90$; Nesmith & Christophersen, 2015) to five years ($n = 123$, Geenen et al., 2013; $n = 67$, Geenen et al., 2015; $n = 61$, Powers et al., 2012).

Evaluation

We examined the effects of youth transition interventions on eight outcome domains. Two or more studies are required to conduct a meta-analysis; as such, when only one study provided information on a specific type of outcome or the outcomes/studies were heterogeneous, no meta-analysis was conducted. Some studies did not provide data on results that were not significant (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). In these cases, every attempt to contact study authors to retrieve missing data was made. When data was not retrievable, outcomes were excluded from the analysis.

All studies were analyzed in RevMan5 using a statistical significance level of .05 (Review Manager, 2001). All analyses were conducted using follow-up data (16 – 24 months) as our research questions focused on improving outcomes for youth transitioning into adulthood. Due to the large amount of variation in the studies included in this review, all analyses were conducted using inverse variance, random effect models. Random effect models assume that the variability beyond subject-level sampling error is random and cannot be identified (Libsey & Wilson, 2001). Inverse-variance methods were used to account for random variability at the

study level. Forest plots were used to provide a graphical representation of the data. Continuous and dichotomous variables were analyzed separately and depicted in their own forest plots.

Homogeneity of variance.

Homogeneity of variance was assessed at each level of the analysis using multiple methods. Clinical judgment was used to assess the comparability of studies. As there is variation in the interventions and the outcomes measures, additional tests for homogeneity were used. For example, a Q statistic test for homogeneity (Hegdes & Olkins (1985) was conducted. Because this method only tests for the presence of heterogeneity, a measure of I^2 was used to assess the level of heterogeneity present (0 -100%).

Analysis

A total of seven studies were included in the meta-analyses, with 1472 participants. Studies were categorized based on intervention type, and analyzed separately. As the four studies sanctioned under the Chafee Foster Care Independent Program evaluation used similar methodology and were all conducted by the same primary investigator will be compared and referred to as Independent Living Programs (ILP) (Courtney et al., 2008a; Courtney et al., 2008b; Courtney et al., 2011a; Courtney et al., 2011b) and TAKE CHARGE (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). Each program type and outcome are presented below.

Independent Living Programs (ILP).

Four studies with 1221 participants were included in the assessment of ILP programs in relation to services as usual. Sample sizes ranged from n = 179 (Courtney et al., 2011a) to n =

411 (Courtney et al., 2008a) All meta-analyses were conducted using random effect models and a 95% confidence interval. Twenty-four outcomes were assessed across six domains. Seventeen of these outcomes provided dichotomous data and were assessed using Mantel-Haenszel Odds Ratios (OR). Seven outcomes provided continuous data. Six outcomes used the same measurement scale, as they were assessed using an Inverse Variance (IV) random effect model of mean differences (MD); one outcome had variation in the outcome measure and was assessed using the IV random effects model of standardized mean differences (SMD). See table 6 for a statistical breakdown or outcome findings. There were no statistically significant results across any of these domains. Individual meta-analyses and forest plots for analyses that did not produce significant results are available in Appendix D.

Table 6: Independent Living Programs Meta-Analysis Results

Outcome	<i>N</i>	<i>K</i>	<i>d</i>	95% <i>CI</i>	<i>z</i>	<i>Q</i>	<i>I</i> ²
Education							
High school enrolment	408	2	0.31a	[0.93, 2.38]	1.66	1.38	28%
Grade completed	720	3	0.06b	[-0.02, 0.80]	0.72	3.06	35%
High school diploma/GED	1221	4	0.00a	[0.77, 1.30]	0.01	0.74	0%
College enrolment	819	3	0.06a	[0.68, 1.71]	0.33	1.38	49%
Housing							
Homelessness	819	3	-0.11a	[0.55, 1.36]	0.62	1.20	0%
Residential moves	819	3	-0.13b	[-0.39, 0.12]	1.04	0.25	0%
Identity							
Pregnancy	408	2	0.01a	[0.65, 1.56]	0.03	2.67	0%
1+ delinquent act(s)	819	3	0.04a	[0.79, 1.40]	0.36	1.34	0%
Number of delinquent acts	819	3	-0.31b	[-0.79, 0.17]	1.26	4.69	57%
Youth engagement							
Overall preparedness	819	3	-0.02b	[-0.06, 0.03]	0.68	0.79	0%
Job preparedness	819	3	-0.01b	[-0.13, 0.06]	0.24	0.36	0%
Employed last 12 months	408	2	-0.08a	[0.59, 1.38]	0.47	0.04	0%
Currently employed	819	3	-0.08a	[0.68, 1.19]	0.74	0.59	0%
Life Skills							
Bank accounts	819	3	-0.02a	[0.74, 1.30]	0.15	1.97	0%
Social Security card	819	3	0.06a	[0.62, 1.87]	0.27	0.56	0%
Birth Certificate	819	3	0.32a	[0.97, 2.32]	1.84	1.37	0%
Drivers license	819	3	0.14a	[0.59, 2.42]	0.50	9.85**	80%
State issued photo ID	819	3	0.01a	[0.72, 1.96]	0.69	3.42	42%
Financial							
Earnings 12 months	819	3	-0.36b	[-1.06, 0.34]	1.01	0.63	0%
Net worth	819	3	-0.88a	[-0.47, 1.16]	0.83	0.73	0%
Economic hardship	722	3	0.13	[-0.03, 0.29]	1.64	2.31	13%
Public financial assistance	722	3	0.05a	[0.77, 3.53]	0.20	3.27	39%
Informal financial assistance	722	3	-0.06a	[0.56, 1.54]	0.29	3.51	43%

Any financial assistance	722	3	-0.02a	[0.50, 1.92]	0.06	5.65	65%
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Note. * $p < .05$. ** $p < .01$. *** $p < .001$.
 N = number of participants; K = number of studies; d = standard difference; CI = Confidence Interval; z = standard score; Q = presence of heterogeneity; I^2 = percent of heterogeneity.
a OR used to calculate d
b MD presented

Homogeneity of variance was assessed for each outcome. One analysis containing three studies violated homogeneity of variance: driver's license, $Q(2) = 9.85$, $p = 0.007$, $I^2 = 80\%$. One study (Courtney et al., 2011a) was removed from the analysis resulting in homogeneity $Q(1) = 0.00$, $p = 0.95$, $I^2 = 0\%$; even with this study removed the results were not significant $d = 0.83$ ($z = 1.02$, $p = 0.31$). Positive trends were identified in three areas: intervention participants were more likely than control participants to remain in school $r = 0.16$ ($z = 1.66$, $p = 0.10$), were more likely to have a copy of their birth certificate $r = 0.16$ ($z = 1.84$, $p = 0.07$), and were less likely to experience economic hardship $d = 0.13$ ($z = 1.64$, $p = 0.10$). Funnel plots were used to address publication bias; however, due to the small sample size for each outcome the results were inconclusive. The fail safe n approach was not appropriate as no results were significant.

TAKE CHARGE (TC) Model.

Three studies with 251 participants were included in the assessment of TC in relation to services as usual (Geenen et al., 2013; Geenen et al., 2015) or a ILP (Powers et al., 2012). Sample sizes ranged from $n = 61$ (Powers et al., 2012) to $n = 123$ (Geenen et al., 2013). All meta-analyses were conducted using Inverse Variance (IV) random effect models and a 95% confidence interval. Two outcomes used the same outcome measure and were evaluated using MD. Six outcomes had variation in the outcome measure and were assessed using SMD. See table 7 for statistical breakdown.

Table 7: TAKE CHARGE Meta-Analysis Results

Outcome	<i>N</i>	<i>K</i>	<i>d</i>	95% <i>CI</i>	<i>z</i>	<i>Q</i>	<i>I</i> ²
Education							
College preparation	190	2	0.49	[0.17, 0.76]	3.08**	20.93***	95%
Youth engagement							
Career planning	190	2	0.86	[-0.41, 2.12]	1.33	14.96***	93%
Transition planning	251	3	0.56	[0.03, 1.10]	2.07*	8.20*	76%
Self-determination AIR	190	2	0.61	[0.00, 1.22]	1.95*	3.90*	74%
Self-determination Arc	128	2	18.66b	[4.00, 24.40]	4.96***	1.31	24%
Goals	184	2	0.39	[-0.46, 1.25]	0.91	7.24**	86%
Accomplishments	184	2	0.40	[0.10, 0.69]	2.66**	4.47*	78%
Mental health							
Quality of Life	128	2	10.27b	[5.42, 15.12]	4.15***	0.09	0%

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

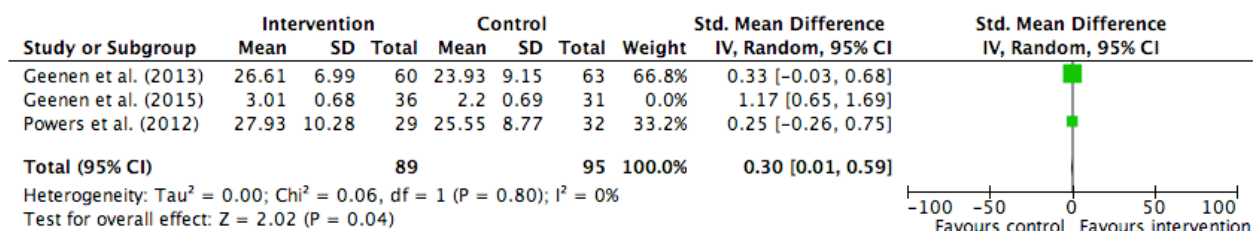
N = number of participants; *K* = number of studies; *d* = standard difference; *CI* = Confidence Interval; *z* = standard score; *Q* = presence of heterogeneity; *I*² = percent of heterogeneity.

a OR used to calculate *d*

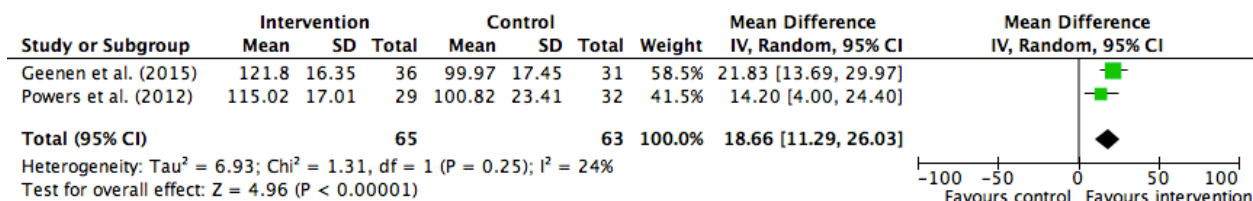
b MD presented

Homogeneity of variance was assessed in each analysis. Six out of eight analyses were heterogeneous. These studies were assessed to see if acceptable levels of homogeneity could be obtained. Of these six analyses, five only contained two studies: college preparation $Q(1) = 20.93$, $p < 0.0001$, $I^2 = 95\%$; career planning $Q(1) = 14.96$, $p = 0.0001$, $I^2 = 93\%$; self-determination AIR $Q(1) = 3.90$, $p = 0.05$, $I^2 = 74\%$; self-directed goals $Q(1) = 7.24$, $p = 0.007$, $I^2 = 86\%$; and accomplishments $Q(1) = 9.85$, $p = 0.03$, $I^2 = 78\%$. No further analysis on these studies was conducted. Heterogeneous analysis and forest plots can be found in Appendix E.

The last analysis contained three studies assessing transition planning $Q(2) = 8.20$, $p = 0.02$, $I^2 = 76\%$. Geenen et al. (2015) was removed from analysis and homogeneity of variance was met $Q(1) = 0.06$, $p = 0.80$, $I^2 = 0\%$. Results for transition planning were statistically significant $d = 0.30$ ($z = 2.20$, $p = 0.04$). Fail safe *n* results indicated that one study would be needed to change the efficacy of this result ($z = 2.79$, fail safe $n = 0.87$). See figure 2.

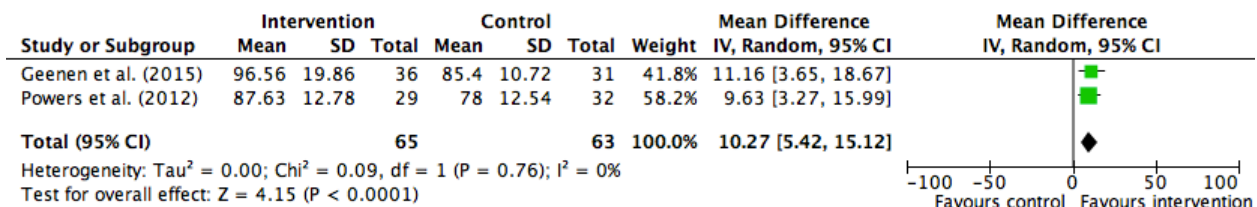
Figure 2: Transition Planning

Self-determination was evaluated using two outcome measures. First, the self-determination AIR meta-analysis compared foster parent report (Geenen et al., 2013) against youth self-report (Geenen et al., 2015); this led to heterogeneity of studies as presented earlier. Geenen and colleagues (2013) also collected youth self-report data using this measure, but the results were not significant and were not included in the published data. A second outcome measure, the Arc self-determination analysis, was statistically significant $d = 18.66$ ($z = 4.96$, $p < 0.0001$). Fail safe n was conducted ($z = 7.34$, fail safe $n = 17.91$) requiring 18 additional studies to reduce the effect to non significant. Analysis and forest plot is available in figure 3.

Figure 3: Self-Determination

Mental health was measured using the Quality of Life Assessment (QofL) across two studies. Participants in the intervention groups rated higher levels of QofL post intervention than those in the control groups $d = 10.27$ ($z = 4.15$, $p < 0.0001$). See figure 3 from QofL analysis. Fail safe n assessed a need for ten additional studies to change the overall effectiveness ($z = 5.53$, fail safe $n = 9.29$).

Figure 4: Quality of Life



Chapter 5: Discussion

Main Findings

This systematic literature review (eight studies) and meta-analysis of seven randomized control trials (1472 participants) found very few significant outcomes for youth involved in transition programs, compared to services as usual at 16 -26 months post baseline. Programs using the TAKE CHARGE (TC) model to teach self-determination through youth engagement, implemented in a RCT design, seemed to have marginally greater positive effects than pre-existing randomized Independent Living Program (ILP).

Every intervention incorporated multiple pillars to adult success. Education was the most commonly integrated domain for transition programs. Six studies included educational components into their interventions (Courtney et al., 2008a; Courtney et al., 2008b, Courtney et al., 2011a; Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). Three took place within the student's high school (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012), two involved visiting college campuses' (Courtney et al., 2008a; Geenen et al., 2015), one involved exploring educational options with an outreach worker (Courtney et al., 2011a), and one involved home-based tutoring (Courtney et al., 2008b). As multiple intervention components are present in both ILP and TC programs our study cannot conclusively pinpoint the intervention element or combination of elements that lead to more successful outcomes, however; there is evidence to suggest that relational approaches seem to have greater success than skill building approaches.

Prior research suggests that classroom-based models focusing on independent living and life skills training are no more effective than service as usual (Greeson et al., 2015; Lemon, Hines, & Merdinger, 2005). However, establishing enduring relationships with non-parental

adults can help provide tangible, emotional, and/or financial support for youth as they transition out of care (Ahrens et al., 2008; Greeson, 2013; Greeson & Bowen, 2008; Munson & McMillen, 2008). Though ILP incorporated relational elements into their interventions, relationship was not the main component (Courtney et al., 2008a; Courtney et al., 2008b; Courtney et al., 2011a; Courtney et al., 2011b). In contrast, the TC model took a relational approach. Relationship building and support were the foundational principles of this model. Studies that incorporated peer support, coaching, and mentoring, while using youth engagement to aid in identity formation and building self-determination, provided more positive outcomes for youth as they transitioned into adulthood (Geenen et al., 2013; Geenen et al., 2015; Powers et al., 2012). Our study found that relationship-based models that focused on self-determination had greater success rates than models that focused on independent living, but incorporated relational components. This is promising for emerging adults as previous research found that youth who have ongoing connection and social support into adulthood have improved adult outcomes (Geenen & Powers, 2007; Greeson & Bowen, 2008; Rutman et al., 2006; Van Bockern et al., 2000).

As social support and relationships are important for marginalized youth (Güroğlu et al., 2007, Clark & Drewry, 1985, Sebanc, 2003), instead of focusing on life skills and postsecondary training, focusing on sustaining ongoing supportive relationships for youth could inadvertently teach these skills. Ahrens and colleagues (2008) examined longitudinal data on the role of organically occurring or natural mentors for youth in foster care and found that youth with natural mentors had better physical and mental health, and experienced less antisocial behaviours. There is evidence to suggest that naturally occurring mentorship relationships are the most effective for youth leaving care, as these build confidence due to the ongoing support

received when encountering challenges (Ahrens et al., 2007; Greeson, Usher, & Grinstein-Weiss, 2010; Spencer, Collins, Ward, & Smashnaya, 2010). Unfortunately, not all youth have natural mentors in their lives.

Ahrens and colleagues (2011) looked at the role of non-parental adults in the lives of foster care alumni and suggested that models incorporate adult mentorship into transition programs. One study included in our review, Nesmith and Christophersen (2014), taught youth and foster parent relationship skills concurrently and provided opportunities for families to practice these skills and discuss what they had learned. Though this study was not included in our analysis, it is important to mention. Nesmith and Christophersen (2014) found youth who participated in this intervention scored higher than controls on the Relationship Competency Assessment, had improved relationship skills, and were more likely to indicate a desire for a lifelong relationship. Thus more research into programs that create and foster ongoing relationship are needed.

Results from our analysis found that TC programs can also improve college preparedness and increase the number of accomplishments for participating youth. Though these results were significant, the studies were not homogeneous and results were excluded. Unfortunately, due to the small number of studies and sample size, there was not enough statistical power to explore this further through a moderator analysis. Though TC programs did seem to improve outcomes across a number of domains, study authors did not provide data for non significant results. See Appendix F for a breakdown of studies and their outcome measures.

Our findings call into question the efficacy of skills-based independent living programs over and above what youth can access in their own communities. Based on this review, ILP did little to improve outcomes for youth beyond services as usual across any domain (i.e. education,

housing, relationships, identity, youth engagement, life skills, financial). Results from the current review did find that youth attending these programs were more likely to remain in school, and have a copy of their birth certificate, as well as less likely to experience economic hardship (though these results were not statistically significant). ILP did not provide any measure of mental health, so it is unclear if such programs would improve mental health for youth. It is possible that ILP offer other benefits that have not been assessed by previous studies. These studies tended to measure tangible support, but failed to address emotional, informational, and mental health outcomes. TC programs also demonstrated little benefit in relation to tangible outcomes; however, the TC programs showed marked improvement for youth in self-determination, transition planning, and quality of life.

Strengths and Limitations

Overall, results from the current study provide some insight into the efficacy on transition programs and need to be interpreted with caution. This data is preliminary and should be seen as such, rather than a global assessment of transition programs. We carefully selected methodologically rigorous studies. Every effort was made to reduce bias in this review. We developed an inclusion/exclusion criteria and screening tool ad hoc. Further, we completed a comprehensive search of the literature using computerized electronic searches, a hand search of grey literature, backward citation searches, and contacted key authors for more information and unpublished data. Kappa reliability checks were done throughout the review process. Although this approach may have resulted in literature being excluded from our data, it allowed us to focus on more methodologically sound interventions.

Authors were contacted for further clarification on study design and sampling characteristics, resulting in two studies being included (Geenen et al., 2013; Powers et al., 2015).

As the TC study was designed for youth with disabilities, and was being applied to foster youth in special education, clarification of what constituted special education was needed (Geenen et al., 2013; Powers et al., 2012). Close to half of the youth in these studies were identified as having mental/emotional/behavioural problems, with less than 10% across all studies having developmental disabilities. There were similar findings across the ILP; such programs found that approximately half the participants in each study met the criteria for mental and behavioural problems. It is well documented that abuse, neglect, maltreatment, and domestic violence generate psychological distress and put children at risk for developing serious mental health issues (Buckner et al., 2004; Burge 2007; Burns et al., 2004; Fergusson & Lynskey 1997; Flynn et al., 2004; Harman et al., 2000; Hussey et al., 2006). In addition, to being at risk for mental health problems, foster youth tend to have significant educational gaps (Courtney et al., 2001; McMillan & Tucker, 1999), and lower educational achievement (Pecora, 2012). The demographic and educational limitation of youth in these studies is consistent with prior research on foster youth.

Pervious research shows gender differences across a number of outcome domains (White et al., 2005). Overall gender breakdown was presented in each study, with gender ratios consistent across groups (i.e., intervention, comparison). The majority of studies had higher prevalence of females, ranging between 40% to 68% depending on the program. It would be interesting to see how these interventions performed across genders, and if the result remained the same. Unfortunately, there was not a not enough information available and limited power to conduct gender based analyses within this study.

Although our research methodology was vigorous it cannot account for pre-existing methodological limitations within and between studies. Overall, our assessment of bias was low

across studies; however, all had relatively small samples as well as multiple entry points. Data from these multiple points was then aggregated over time and compared as one sample.

Although this may control for the cohort effect, it adds additional confounding factors that could both positively and negatively affect the results. Because of the heterogeneity of the literature examined, all our analyses contained four or fewer studies, which made conducting funnel plot for publication bias arbitrary. Though we calculated fail safe n whenever possible, our number of included studies, study sample sizes, and effect sizes were relatively low (especially when calculating the SMD); it was therefore possible that a large study could sway the results. As studies were small, there may not have been enough statistical power to detect real differences across groups.

Chafee Foster Care Independent Program (CFCIL) funds a number of different independent living programs across the United States; only four of these programs were included in this review. It is possible that control youth were accessing these or other services. These studies had poor adherence to group assignment. In addition to the program crossover rates, where control youth accessed services offered to the intervention group, there were also a number of youth who were assigned to the intervention groups but did not assess services. For example in the ESTEP program, one third of youth did not access ESTEP tutoring services; however, a number of both control and intervention youth accessed tutoring services outside the ESTEP program. This crossover may indicate that youth who were motivated to improve their circumstances accessed transitional services elsewhere. Further, because each intervention had multiple sites across the implementation county, there was a lack of consistency in service delivery from location to location. Moreover, all assessed outcomes measures were based on the

youth's self-report. Self-report measures were subject to social desirability reporting, and youth may not have had the awareness to rate their own experience accurately.

The TC interventions contained relatively small sample sizes, which likely resulted in the studies being statistically underpowered. Though a number of outcomes favoured the intervention group, authors of these studies did not provide outcome data on results that were not significant. Researchers used stringent alpha levels to conduct their analyses; while this reduced the chance of type 1 error, it also increased the small differences between groups, which may be missed. Additionally, due to the sheer volume of outcome measures used in these studies and the considerable number of statistical analyses run by the research teams, it is possible that some of the positive findings of individual studies were due to chance. Although the majority of measures had well documented psychometric properties, a few of the measures used (i.e., postsecondary preparation, outcomes survey, adapted mental health recovery measure, adapted hopelessness scale for children) may not have had the same sensitivity to detect differences that were real. Furthermore, as the majority of measures relied upon self-reporting, there was a likelihood of over and underestimation on the part of the youth in relation to their own experiences.

Each of the TC interventions took place in single geographical urban settings, limiting the generalizability of these results. Moreover, there were slight differences in the implementation and intervention components of the TC model across sites. Dosage may play a role in individual study results. Powers and colleagues (2012) reported a greater number of positive outcomes across more domains than Geenen and colleagues (2013). Both these studies employed the TC model with foster youth in special education programs in urban school settings; however, the first study provided students with 50 hours of coaching compared to 33 hours in the latter.

Another marked difference between these studies was sample size; Powers et al. (2012) provided the intervention to 29 youth compared to 60 youth (Geenen et al., 2013).

All studies were implemented and evaluated in US child welfare systems, and thus results may not generalize to Canadian systems of care. Given that all studies took place in the United States, and had small sample sizes, generalizability to other regions, populations or child welfare systems is limited. Further exploration of ILP, and their effectiveness in different systems of care may be warranted. Finally, as all studies assessed outcomes 16 – 22 months post baseline, future research may want to examine the possibility of a delay in effects. Alternatively, it would be valuable to know if the few effects found by the current study hold up over time.

Implications for Practice

The main objective of this study was to identify whether the eight pillars (education, housing, relationship, identity, youth engagement, life skills, mental health, and financial support) are being implemented into practice, how these pillars are being used in combination with each other, and how effective they are in improving outcomes for transitioning youth. While there is a plethora of transition programs for youth across the United States and Canada; there seems to be a dearth of evaluations of these programs. The efficacy of programs is rarely being evaluated, and there are virtually no evaluations tracking the outcomes of these programs of adult former foster youth. Though some of the studies we included were categorized as longitudinal, the average age of participants across studies was 17, with the longest follow up period being 26 months. This research provides insight into how youth are doing post intervention, but does little to advance our understanding of mechanisms to improve adult outcomes for former foster youth.

As practitioners and policy makers it is vital that we look for additional ways to support young foster alumni. Based on these findings, creating independent living programs that solely focus on teaching youth independent living skills is not enough. Programs like TAKE CHARGE (Geenen et al., 2015; Geenen et al., 2013, Powers et al 2012) and CORE (Nesmith & Christophersen, 2015) focus on creating ongoing relationships for youth as they transition from foster care into adulthood. The intervention TAKE CHARGE involves youth in their own transition through mentorship while teaching self-determination skills. These youth showed improved college preparation and transition planning, had more self-directed accomplishments, and had higher ratings of quality of life. Though this research is preliminary, it shows a number of benefits to involving youth in their own transition planning through supportive relationships. In line with previous research on emerging adulthood, connecting youth with former foster youth who have experienced similar challenges and are currently attending college may help youth develop a positive future orientation (Heinz, 2009; Hermans & Dimaddio, 2007) and set attainable goals (Nurmi, 2004; Seginer, 2009).

This study found that research consistently supports a relational approach to working with youth as they transition from care. Although teaching youth tangible skills is important, programs that focused on this did not provide any additional benefit over and above services as usual (Courtney et al., 2008a; Courtney et al., 2008b; Courtney et al., 2011a; Courtney et al., 2011b). Fostering interdependence and connecting youth with social support into adulthood can teach self-reliance and life skills through ongoing connection and support (Propp et al., 2003; Samuels & Pryce, 2008). Interventions that focus on creating and maintaining ongoing relationships into adulthood, inadvertently provide ongoing life skill training (Nesmith & Christophersen, 2015). Former foster youth can benefit from knowing who to talk to when they

have questions on accessing and utilizing financial, education, and housing resources when these needs become relevant (Geenen et al., 2015; Geenen et al., 2013, Powers et al., 2012). Research supports the need to teach interpersonal skill such as emotion regulation, anger management, and effective interpersonal communication (Nesmith & Christophersen, 2015). More programs that focus on supporting ongoing relationships are needed.

As child welfare policy varies across provinces and states, it can be a challenge to develop and implement longitudinal program evaluations. Yet, as practitioners and policy makers, it is important to fully evaluate programs before wide spread roll out. Unfortunately in child welfare this is rarely done. There is an ethical dilemma of withholding a potentially life changing intervention from an already marginalized population. However, the problem with not doing evaluations is that governments and child welfare agencies could end up spending millions of dollars on an ineffective, but well liked program. One example of this is the Drug Abuse Resistance Education Program (DARE). DARE was developed in the 1980's and the initial evaluation showed positive results. By 1995 DARE was a nationally funded program with an estimated cost of about \$200 million. However, although this program was well liked, multiple research studies conducted almost ten years later found that the DARE program did not decrease drug and alcohol use for youth over five years (Becker, Agopian, & Yeh, 1992; Clayton, Cattarello, & Johnstone, 1996; Harmon, 1993). Had a proper evaluation been conducted on implementation, millions of dollars could have been saved and potentially could have been reallocated to the development of an more effective program based on what was learned from the DARE program. Though piloting longitudinal studies can be cumbersome, pilot projects are essential. Pilots are not necessarily restricted to small sample sizes, and could provide knowledge into ways to better support emerging foster adults. Even conducting a five-year follow-up could

provide a wealth of insight on the transition process. Creating longitudinal evaluations at the same time as program implementation could help researchers and practitioners gain a better understanding of the mechanisms underlying foster alumni outcomes, putting us one step closer to decreasing the social divide between former foster youth and their same age peers.

Future Research

Findings from this study have implications for future research, as well as for the development of programs for youth transitioning out of foster care systems. There is a dearth of research implementing randomized control and quasi-experimental designs assessing the efficacy of transition programs. This preliminary study supports the need for additional large-scale randomized control trials that follow youth into adulthood. Further, more research is needed to evaluate the link between interdependence, mentoring, and relationship skill building, on adult function for former foster youth. As all studies included in this review used small, geographically restricted samples across the (predominantly) Western United States, nation-wide and Canadian studies are warranted. Additional research examining how transition programs perform based on gender could help to identify and strengthen programs for foster youth as they leave child welfare systems and emerge as adults.

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Appendix A

Complete breakdown of the search strategy:

Initial Electronic Search			
	Search Terms	Returned Results	Date: 2015
1	foster OR child welfare OR ministry OR child* in care OR social services OR aging out OR transition OR alumni AND intervention OR program OR curriculum	4,686,996	Aug 22
2	foster OR child welfare OR child* in care OR social services AND aging out OR transition OR alumni OR intervention OR program OR curriculum	4,527,277	Aug 22
3	foster OR child welfare OR child* in care OR social services AND Ag* out OR transition OR alumni AND intervention OR program	4,302,240	Aug 22
4	foster care OR child welfare OR child* in care OR social services AND Ag* out OR transition OR alumni AND intervention OR program	4,225,749	Aug 22
5	foster care OR child welfare OR social services AND Ag* out OR transition OR AND intervention OR program	3,895,276	Aug 22
6	foster care OR child welfare OR social services AND Ag* out OR transition OR alumni AND intervention OR program	3,385,065	Aug 22
7	(1) foster care OR child welfare OR group home AND ag* out OR transition OR alumni AND intervention OR program/	53,451	Aug 30 - Sept 26

(2) foster care OR child welfare OR group home AND teen* OR adolescen* OR youth OR adult AND ag* out OR transition OR alumni (3) foster care OR child welfare OR group home AND teen* OR adolescen* OR youth OR adult AND intervention OR program OR treat* OR prevent*		
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Final Electronic Search			
	Search Terms	Returned Results	Date 2015
1	foster care OR child welfare AND systematic OR review OR meta-analysis	2281	Sept 26
2	foster AND ag* out OR transition education	1930	Nov 10
3	foster AND education AND intervention OR crisis OR prevent* OR rehab* OR treat*	8541	
4	foster AND ag* out AND education AND intervention OR crisis OR prevent* OR rehab* OR treat*	1263	Nov 12
5	foster OR child welfare OR group home AND ag* out OR transition OR emerg* AND education OR housing OR relation* OR identity OR engagement OR self determin* OR life skills OR mental OR finance	16,363	Nov 14 - Nov 28
6	foster OR child welfare AND youth OR adolescen* AND transition	902	July 15, 2016

	AND independen* OR adult		
7	foster OR child welfare AND independent living OR after care	1538	July 16, 2016
Updated: Filters Applied Jan 2015 - Dec 2016			
8	foster OR child welfare AND independent OR after care	198	Jan 16 2017
9	foster OR child welfare AND independent OR after care	882	

Appendix B

Grey Literature Search		Nov 2016 – Feb 2017
1	Alliance for children and families	http://alliance1.org
2	Measures of America of the social science research council	http://www.measureofamerica.org
3	American institute of research	http://www.air.org
4	American Public Health Services Association	https://www.apha.org
5	The National Association of Child Welfare Administrators	http://www.aphsa.org/content/NAPCWA/en/home.html
6	The Association of Administrators of the Interstate Compact on the Placement of Children	http://www.aphsa.org/content/AAICPC/en/home.html
7	The Annie E. Casey Foundation	http://www.aecf.org
8	Association for community affiliated plans	http://www.communityplans.net
9	Association for Neighborhood and housing	http://www.anhd.org/
10	Association to benefit children	http://www.a-b-c.org/
11	Atlanta Neighborhood development	http://www.andpi.org/
12	California Family Resource Association	http://californiafamilyresource.org/
13	California Public interest research group	http://www.calpirg.org/home
14	Campbell Collaborative	https://www.campbellcollaboration.org/library.html
15	Canadian mental health association	http://www.cma.ca/
16	Canadian policy research network	http://cprn.org/index.cfm
17	Carnegie Corporation of New York	https://www.carnegie.org
18	Center for American Progress	https://www.americanprogress.org
19	Center for Urban Future	http://nycfuture.org/
20	Center for Adolescent Health and the Law	http://www.cahl.org/
21	Center for Effective Public Policy	http://cepp.com/
22	Center for Immigration and Child Welfare	http://cimmcw.org/
23	Center for Social inclusion	http://www.centerforsocialinclusion.org
24	Center for the Study of Social Policy	http://www.cssp.org/
25	Centre for Social Justice	http://www.socialjustice.org/
26	Brown Centre for the Study of Children at Risk	https://www.brown.edu/research/projects/children-at-risk/
27	Chapin Hall Center for Children	http://www.chapinhall.org
28	Child Health and Development Institute of Connecticut, Inc.	http://www.chdi.org
29	Child Trends	http://www.childtrends.org/
30	Child Welfare League of America	http://www.cwla.org/
31	Children Now	http://www.childrennow.org/index.php/
32	Children's Bureau	https://www.acf.hhs.gov/cb
33	Commission for Public's Health Systems	http://www.cphsny.org/cphs/

34	Community Foundation of Anne Arundel	http://www.cfaac.org/
35	Community Service Society of New York	http://www.cssny.org/
36	Community Voices	http://www.communityvoices.org/index.aspx
37	Conference Board of Canada	http://www.conferenceboard.ca/
38	CORE group	http://www.coregroup.org/index.php
39	Corporation of Supportive Housing	http://www.csh.org/
40	Count the Costs	http://www.countthecosts.org/
41	DC Action for Children	http://www.dcactionforchildren.org/
42	David Lucile Packard Foundation	http://www.packard.org/
43	DC Appleseed Center	http://dcappleseed.com/
44	Delaware, Department of Health and Social Services	http://dhss.delaware.gov/dhss/
45	Economic Social and Research Council	http://www.esrc.ac.uk/
46	Economic Social and Research Institute	http://www.esresearch.org/
47	Education Development Centre Inc.	http://www.edc.org/
48	Families for excellent schools	http://www.familiesforexcellentschools.org/
49	Families USA	http://www.familiesusa.org/
50	Family Caregiver Alliance	http://www.caregiver.org/caregiver/jsp/home.jsp
51	First Focus	http://www.firstfocus.net/
52	Florida, Department of Children and Families	http://www.dcf.state.fl.us/
53	Foundations for Child Development	http://fcd-us.org/
54	Frameworks Institute	http://www.frameworksinstitute.org/
55	Frontier Centre for Public Policy	http://www.fcpp.org/
56	Future of Children	http://www.futureofchildren.org/
57	Georgetown University, Center for Child and Human Development	https://gucchd.georgetown.edu
58	Georgia, Department of Human Services	http://dhs.georgia.gov
59	Greater New Orleans Community Data Center	http://www.gnocdc.org/
60	Harvard Center for Population and Developments Studies	http://www.hsph.harvard.edu/population-development/
61	Harvard University, Centre on the Developing Child	http://developingchild.harvard.edu/
62	Harvard University, Humanitarian Initiative	http://hhi.harvard.edu/
63	Hastings Center	http://www.thehastingscenter.org/
64	Healthy Youth Colorado Alliance	http://www.healthycoloradoyouth.org/
65	Healthy Youth Alliance	http://healthyyouthalliance.com/
66	Henry J. Kaiser Family Foundation	http://kff.org/
67	Herndon Alliance	http://herndonalliance.org/
68	Human Rights Campaign	http://www.hrc.org/
69	Human Rights Campaign Foundation	http://www.hrc.org/the-hrc-story/hrc-foundation

70	Human Rights Watch	http://www.hrw.org/
71	Human Sciences Research Council	http://www.hsrc.ac.za/
72	Institute of Family Health	http://www.institute2000.org/
73	Institute of Developmental Studies	http://www.ids.ac.uk/publications
74	Inter-Agency Council on Child Abuse and Neglect	http://ican4kids.org/
75	Jim Casey Youth Opportunity Initiatives	http://www.jimcaseyyouth.org/
76	John Hopkins University, Center for Civil Society Studies	http://ccss.jhu.edu/
77	Langer Research Associates	http://www.langerresearch.com/
78	Lewin Group	http://www.lewin.com/
79	Massachusetts, Executive Office of Health and Human Services	http://www.mass.gov/eohhs/researcher/
80	Maternal and Child Health Policy Research	http://mchpolicy.org/
81	McGill University, Centre for Research on Children and Families	https://www.mcgill.ca/crcf/centre-research-children-and-families
82	Michigan's Children	http://www.michiganschildren.org/
83	Minnesota Center Against Violence and Abuse	http://www.cehd.umn.edu/ssw/mincava/
84	Minnesota, Department of Human Services	http://mn.gov/dhs/
85	Murdoch Children's Research Institute	https://www.mcric.edu.au/
86	My Brother's Keeper Task Force	https://www.whitehouse.gov/my-brothers-keeper
87	National Alliance to Advance Adolescent Health	http://www.thenationalalliance.org/
88	National Association of Social Workers	http://www.naswdc.org/
89	National Association of Social Workers, Center for Workforce Studies	http://workforce.socialworkers.org/
90	National Center Assisted Living	http://www.ahcancal.org/nca/Pages/default.aspx
91	National Center for Social Research	http://www.natcen.ac.uk/
92	National Coalition for Homelessness	http://nationalhomeless.org/
93	National Partnership for Women & Families	http://www.nationalpartnership.org/site/PageServer
94	New Jersey, Department of Human Services	http://www.state.nj.us/humanservices/
95	New York Center for Child Development	http://www.nyccd.org/
96	New York City, Administration for Children's Services	http://www.nyc.gov/html/acs/html/home/home.shtml
97	New York University Silver School of Social Work	https://socialwork.nyu.edu/
98	North Carolina, Department of Health and Human Services	http://www.ncdhhs.gov/
99	Oklahoma, Department of Human Services	http://www.okdhs.org/divisionsoffices/visd/asd/

100	Open Society Foundations	http://www.opensocietyfoundations.org/
101	Oregon, Department of Human Services	http://public.health.oregon.gov/PHD/ODPE/HPCDP/Pages/index.aspx
102	Pennsylvania State University, College of Health and Human Development	http://etda.libraries.psu.edu/
103	Princeton University, Center for Health and Wellbeing	http://www.princeton.edu/chw/
104	RAND Corporation	http://www.rand.org/
105	Reason Foundation	http://reason.org/
106	Reclaiming Futures	http://www.reclaimingfutures.org/blog/
107	Research! America	http://www.researchamerica.org/
108	Rhode Island KIDS COUNT	http://www.rikidscount.org/
109	Robert Wood Johnson Foundation	http://www.rwjf.org/en.html
110	RTI International	http://www.rti.org/
111	Russell Sage Foundation	http://www.russellsage.org/
112	Rutgers University, Youth Education and Employment Success Centre	http://www.teemgateway.rutgers.edu/
113	Save the Children Federation, Inc	http://www.savethechildren.org/
114	Simon Fraser University	http://www.sfu.ca/
115	Society for Human Research Management	http://www.shrm.org/Pages/default.aspx
116	Social Care Institute of Excellence	http://www.scie.org.uk/
117	Stanford University	http://www.stanford.edu/
118	Statistics Canada	http://www.statcan.gc.ca/start-debut-eng.html
119	Teenwise Minnesota	http://www.moappp.org/
120	U.S. Public Interest Research Group	http://www.uspirg.org/
121	United Nations Development Programme	http://www.undp.org/content/undp/en/home.html
122	United Nations International Children's Fund	http://www.unicefusa.org/
123	United States Health and Human Services, Administration of Children and Families	https://www.acf.hhs.gov
124	United States, National Institute of Child Health and Human Development	https://www.nichd.nih.gov/health/Pages/index.aspx
125	University of British Columbia, Centre for the study of Services to children and families	http://csscf.ok.ubc.ca
126	University of California, Berkley, Center for Social Services Research	http://cssr.berkeley.edu/
127	University of California, Los Angeles	http://www.ucla.edu/research/research-centers-and-institutes
128	University of California, San Francisco, Center for Vulnerable Populations https://cvp.ucsf.edu	https://cvp.ucsf.edu

129	University of California, San Francisco, National Adolescent and Young Adult Health Information Center	http://nahic.ucsf.edu
130	University of Michigan, Institute of Social Research	http://home.isr.umich.edu/
131	University of Michigan, National Poverty Center	http://www.npc.umich.edu/
132	University of Ottawa	http://www.uottawa.ca/welcome.html
133	University of Toronto	http://www.utoronto.ca/
134	University of Western Ontario	http://www.uwo.ca/
135	Urban Institute	http://www.urban.org/
136	Utah, Department of Human Services	http://www.dhs.utah.gov/
137	W.K. Kellogg Foundation	http://www.wkkf.org/
138	Washington State, Department of Social & Health Services, Research and Data Analysis	http://www.dshs.wa.gov/rda/
139	Washington University, George Warren Brown School of Social Work	http://brownschool.wustl.edu/Pages/ Home.aspx
140	Wellesley institute	http://wellesleyinstitute.com/
141	Westat, Inc.	http://www.westat.com/
142	Wilder Research Center	http://www.wilder.org/Wilder- Research/Publications/Pages/default. aspx
143	World Health Organization, Department of Child and Adolescent Health and Development	http://www.who.int/child_adolescent health/en/
144	Yale University, Institution for Social and Policy Studies	http://isps.research.yale.edu/

Appendix C

Data Extraction Tool

Level 1: Initial Screening

1. Is this document about youth aging out of foster care
 - Yes
 - No
 - Unsure

2. What is it
 - Transition Program Evaluation
 - Review of Transition Programs
 - Descriptive, correlation, or case study
 - Qualitative
 - Unsure

Level 2: Eligibility Decision

1. Does this study include an intervention/program for youth transitioning out of foster care
 - Yes
 - No
 - Unsure

2. Does this study include two or more parallel cohorts (groups that received different interventions and were assessed at the same point in time?)
 - Yes

- No
 - Unsure
3. Is it a randomized experiment?
- Yes
 - No
 - Unsure
4. Does it include youth aged 14-21 currently in foster care
- Yes
 - No
 - Unsure
5. Is this study targeted for youth with development disabilities?
- Yes
 - No
 - Unsure

Level 3: Data Extraction: Study Level

Research methods

1. How were comparison/control groups formed?
 - Random assignment
 - Other (specify)

2. If random assignment, specify design
 - Simple/systematic
 - Stratified/blocked (identifying variables)

- Yoked pairs (created by timing of enrollment into the study)
 - Matched pairs (identify matching variables)
 - Cluster (group) randomization
 - Other (specify)
 - Not specified
3. Who performed condition assignment
- Research staff
 - Program staff
 - Other (specify)
 - Not specified
4. How was random assignment performed?
- Computer generated
 - Random numbers table
 - Coin or dice
 - Other (describe)
 - Not specified
5. How many separate sites were included in the study?
- One
 - Two
 - Three
 - Four
 - Five or more
6. Was random assignment performed in the same way in all sites?

- Yes
- No
- Not specified

7. How many different control/comparison groups were there (i.e., different intervention, not different sites)

- One
- Two or more (explain)

Setting

8. Location of intervention (check all that apply)

- Urban
- Suburban
- Rural
- Cannot tell

Samples

9. Location details (city, county, state/province, country)

10. Primary service sector

- Child and Youth Care
- Child and Youth Mental Health
- Child Welfare
- Other (specify)

11. Sample size

Number of cases	Intervention	Comparison	Total	Notes/pg#
Referred				
Consented				
Assigned to condition				
Started study				
Completed study				
Completed post data				
Completed follow up				

12. Sample characteristics

	Intervention	Comparison	Total	Notes/pg#
Gender (% female)				
Youth ages (Range)				
Youth ages (Mean)				
Race/ethnicity (%)				
Placement History				
Current Education				

13. Were there baseline differences between intervention and comparison group?

- Yes (describe)
- No (how do we know)
- Cannot tell

14. Was attrition assessed?

- Yes (describe)

- No (how do we know)
- Cannot tell

15. Was there any analysis of difference between intervention group completers and dropouts?

- Yes
- No
- Cannot tell

16. Was there any difference between intervention group completers and dropouts?

- Yes (what were the differences)
- No
- Cannot tell

17. Was there any analysis of difference between comparison group completers and dropouts?

- Yes
- No
- Cannot tell

18. Was there any difference between comparison group completers and dropouts?

- Yes (what were the differences)
- No
- Cannot tell

Services

19. Service Characteristics

	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Notes & Pg#</i>
--	------------	------------	-------------	-----------	------------------------

Duration in

- Days
- Weeks
- Months

Hours of contact

- Per week
- Per month
- Other (explain)

Total hours of contact

20. Other intervention characteristics

21. Characteristics of intervention staff (education, demographics, etc)

22. Describe methods used to insure quality of intervention (supervision, training, etc)

23. Is there any information on program adherence (fidelity)

Services to comparison group

24. Type of comparison group

- Services as usual

- Alternative service (explain)
- No service

25. Describe services provided

26. Characteristics of intervention staff (education, demographics, etc)

Level 4: Outcomes

Measures

1. When was data collected? (check all that apply)

- Baseline
- Time 1 _____
- Time 2 _____
- Time 3 _____
- Follow-up 1 _____
- Follow-up 2 _____
- Follow-up 3 _____

2. Who conducted assessments?

- Research staff
- Program staff
- Both

3. Was data collected in the same manner for the intervention and comparison groups?

- Yes
- No (describe differences)

- Cannot tell

4. Outcome Measures

Please enter outcome measures in the order in which they are described in the report. Note that a single outcome measure can be completed by multiple sources and at multiple points in time (data from specific time points and sources will be entered later)

#	Topic	Reliability & Validity	Format	Source	Direction	Source	Model Admin	Blind
1	Code:	Info from:	- Dichotomous	High score	- Youth	- Self admin	- Yes	
	Definition	- Other samples	- Continuous	or event is	- Foster parent	- Interview	- No	
		- This sample		- positive	- Teacher	- Other	- Un	
		- Unclear		- negative	- Program staff			
		Info provided:		- cannot tell	- Other			
					- Unclear			

Topic codes

Data

5. Please enter outcome data in the tables provided below. Enter dichotomous outcomes first, then continuous outcomes. Outcome # refers to the measures described above.

Dichotomous outcome data

Enter data only if it is provided (do not perform calculations. OR = odds ratio. Enter exact *p* values if available. If covariates (control variables) are used in the analysis, please identify these variables under Statistics (cov).

Outc #	Timing	Source	Valid Ns	n w/ event	% w event	Statistic
	- Pre tx	- Youth	Intervention	Intervention	Intervention	OR
	- T1	- Foster parent				95%

- T2	- Teacher				X2
- T3	- Program staff				Df
- F1	- Other	Comparison	Comparison	Comparison	<i>p</i> val
- F2	- Unclear				Other
- F3					Cov

*Repeat as often as needed

Continuous outcome data

If change/gain scores are provided, enter under “other data.” If covariates (control variables) are used in the analysis, please identify these variables under Statistics (cov).

<i>Outc #</i>	<i>Timing</i>	<i>Source</i>	<i>Valid Ns</i>	<i>n w/ event</i>	<i>SDs</i>	<i>Statistic</i>
- Pre tx	- Youth		Intervention	Intervention	Intervention	<i>p</i>
- T1	- Foster parent					<i>t</i>
- T2	- Teacher					<i>F</i>
- T3	- Program staff					<i>ES</i>
- F1	- Other	Comparison	Comparison	Comparison		Other
- F2	- Unclear					Cov
- F3						

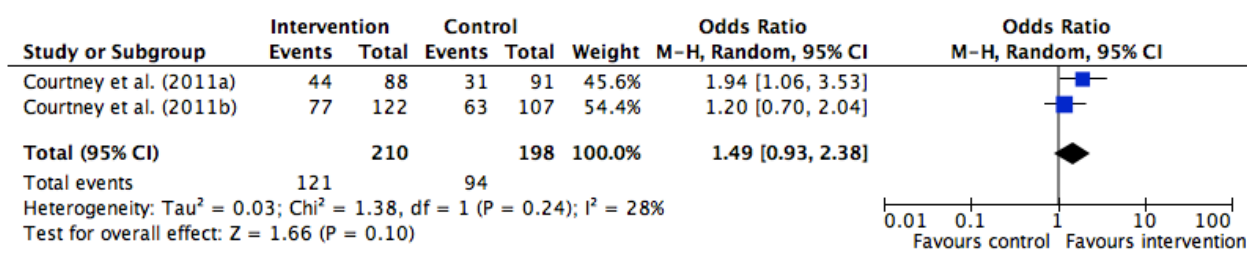
*Repeat as often as needed

Appendix D

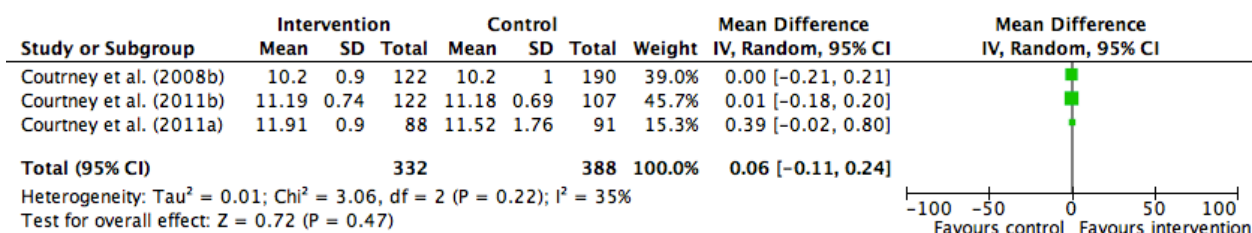
Full list of analyses that did not produce significant results, broken down by outcome:

Education

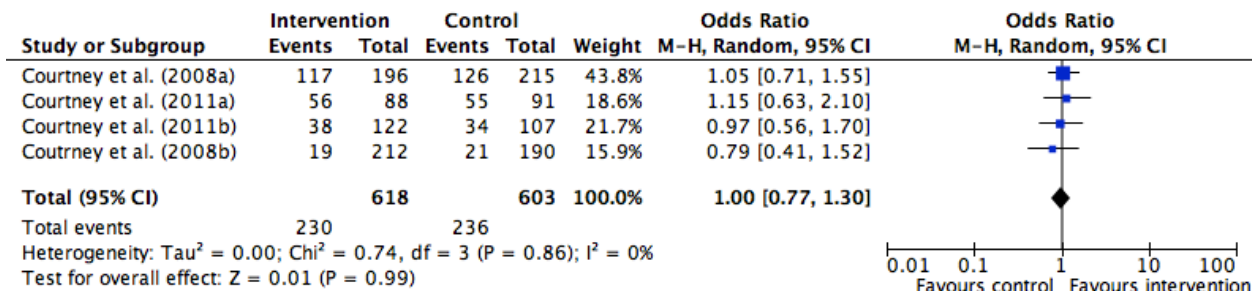
High school enrolment



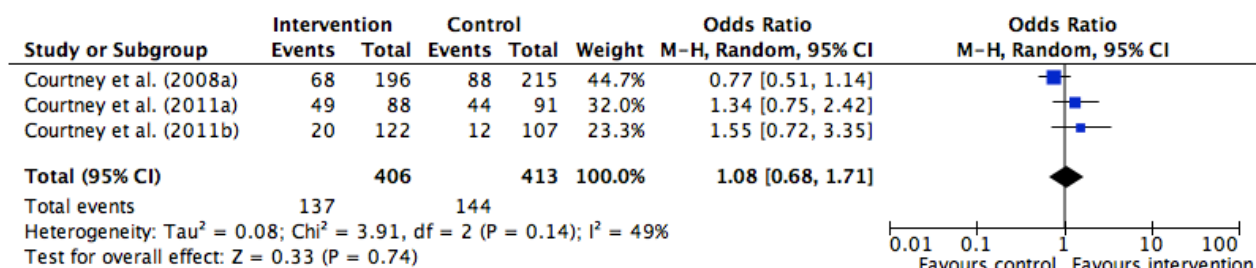
Grade completed



High school diploma/GED

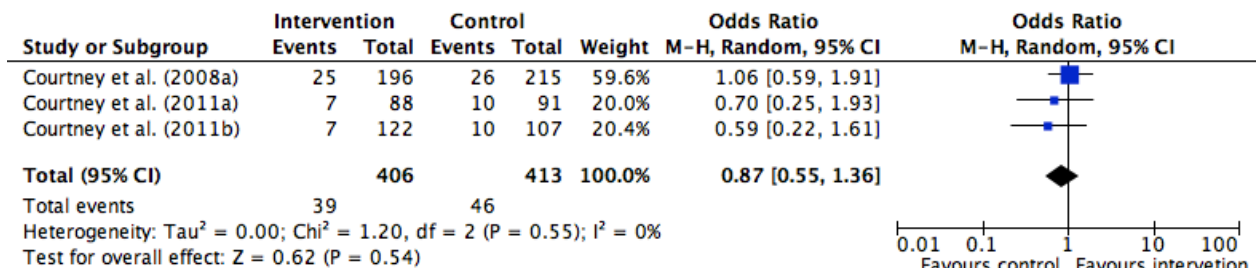


College enrolment

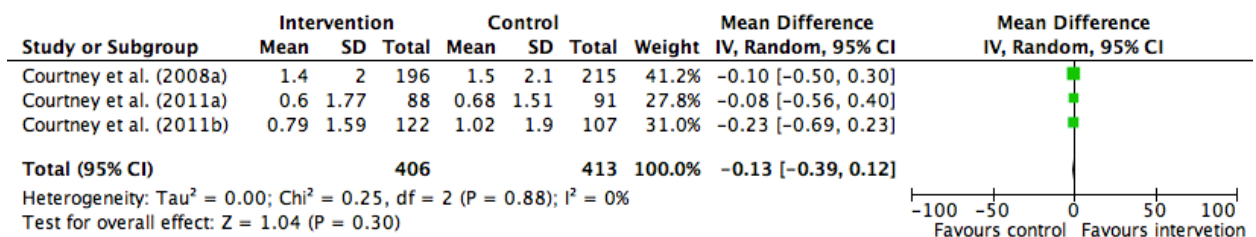


Housing

Homelessness since baseline

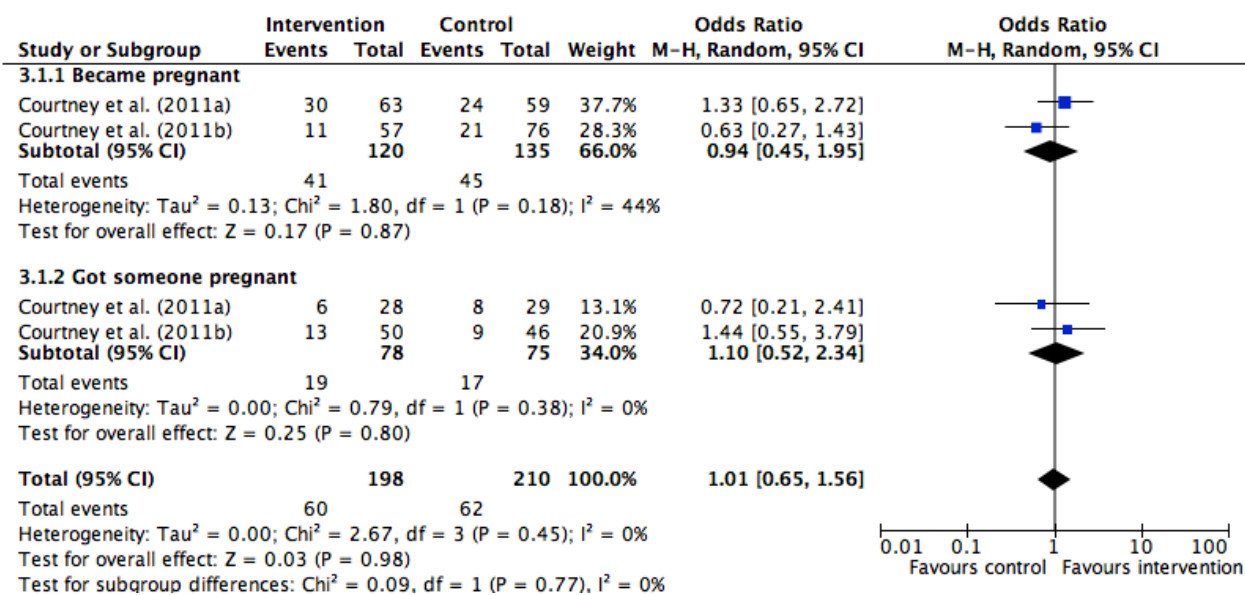


Number of residential moves

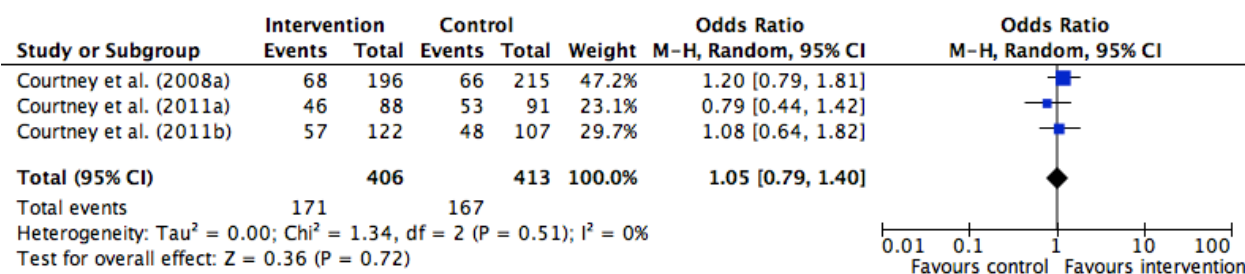


Identity

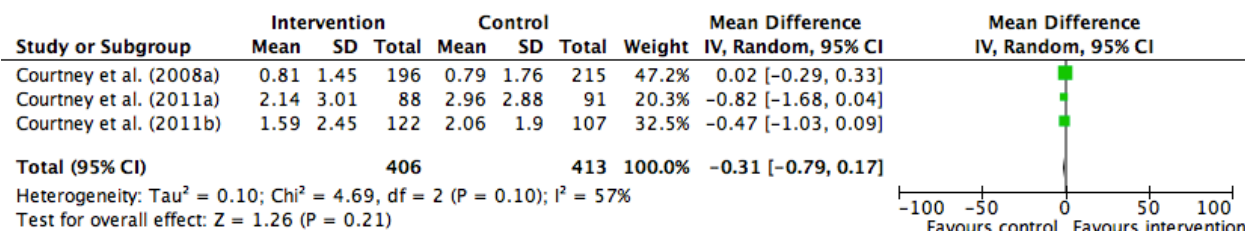
Pregnancy



1+ delinquent act(s)

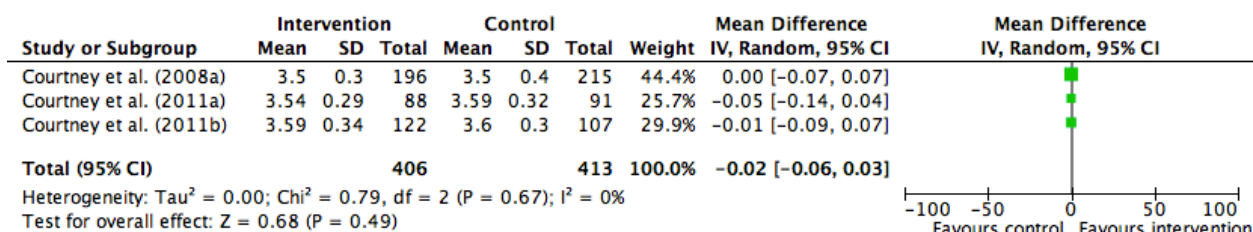


Number of delinquent acts

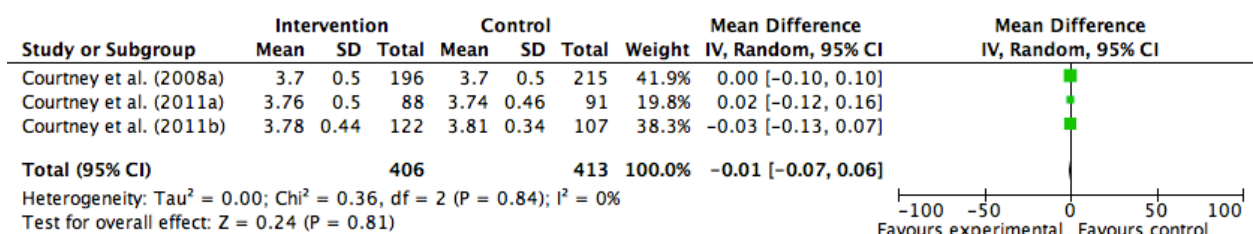


Youth engagement

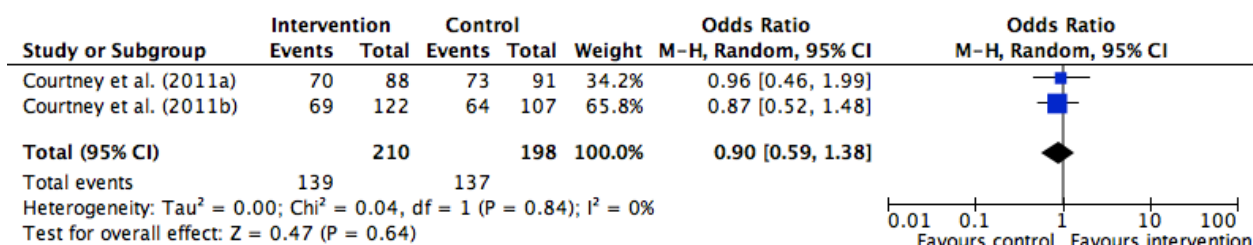
Overall preparedness



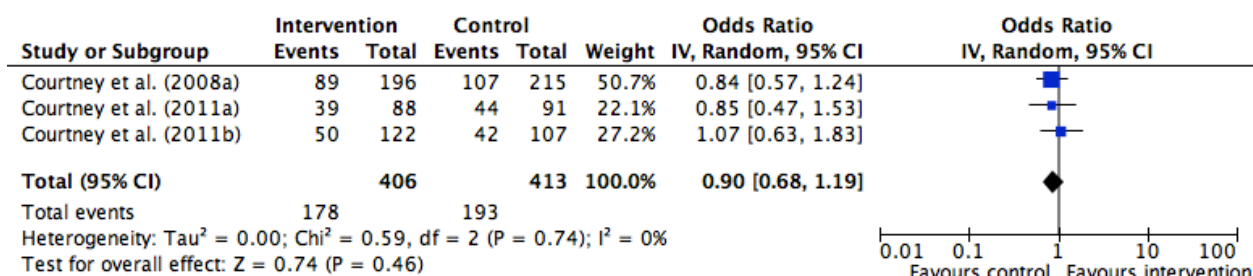
Job preparedness



Employed last 12 moths

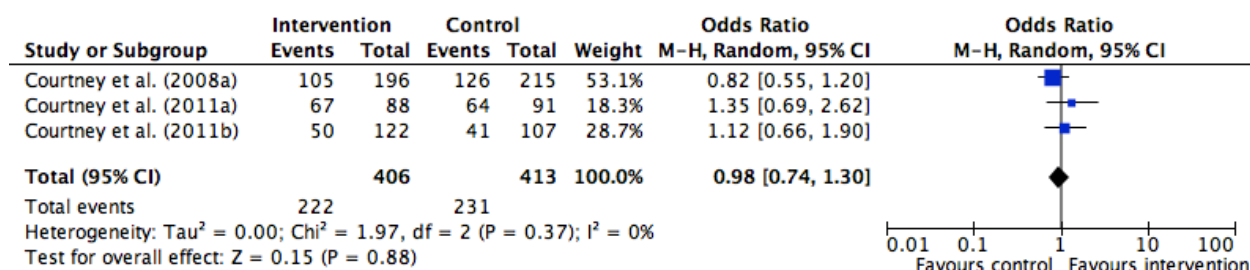


Currently employed

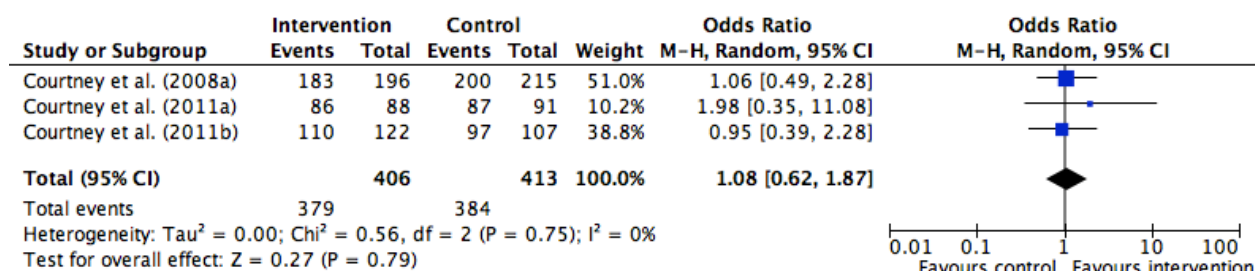


Life Skills

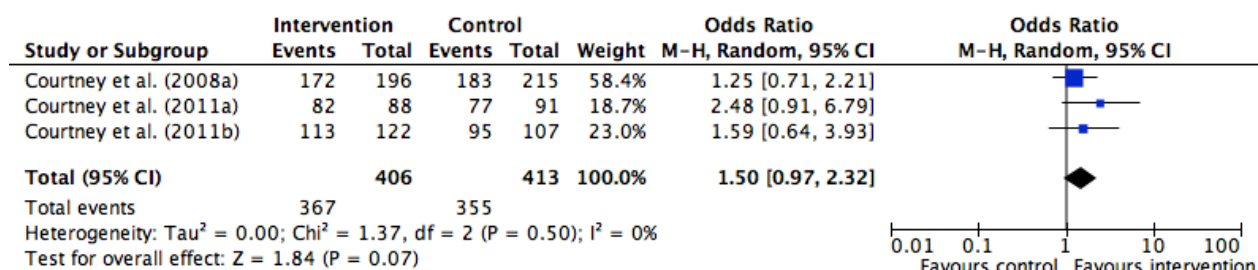
Bank accounts



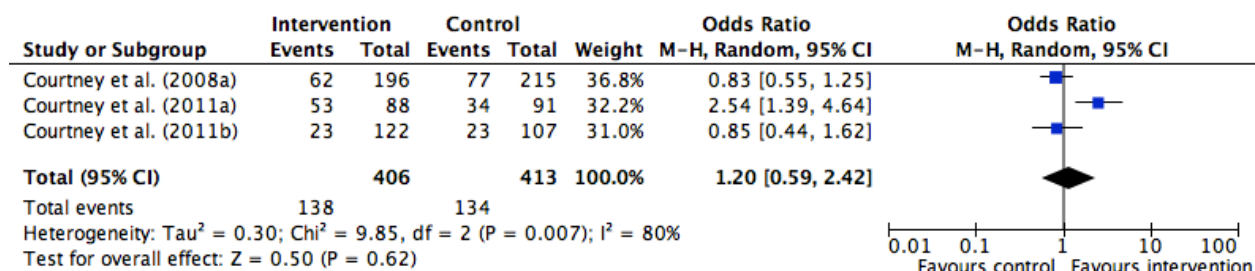
Social Security card



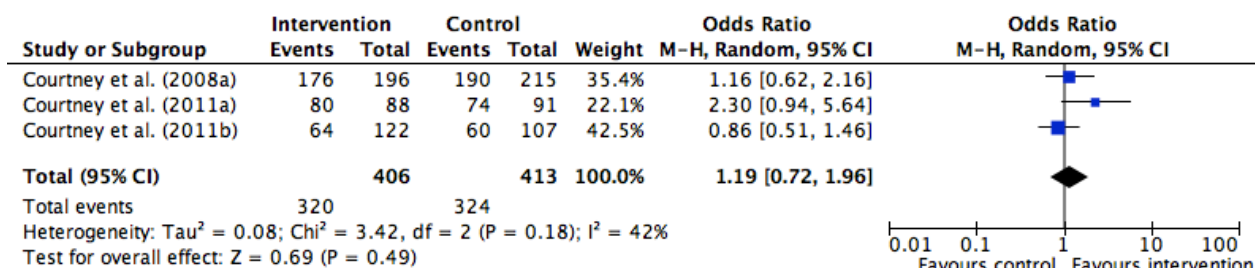
Birth Certificate



Drivers license

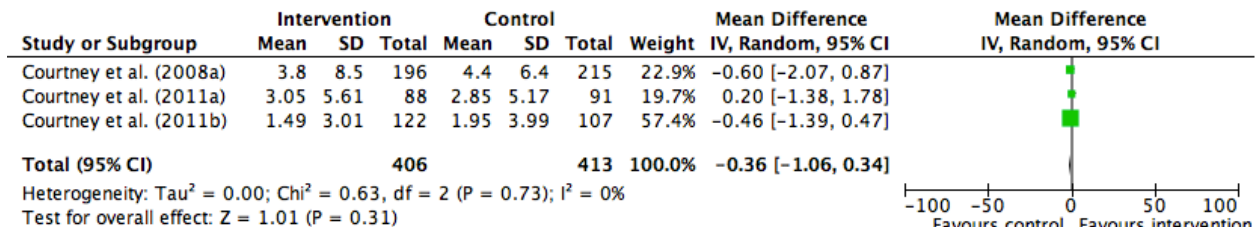


State issued photo ID

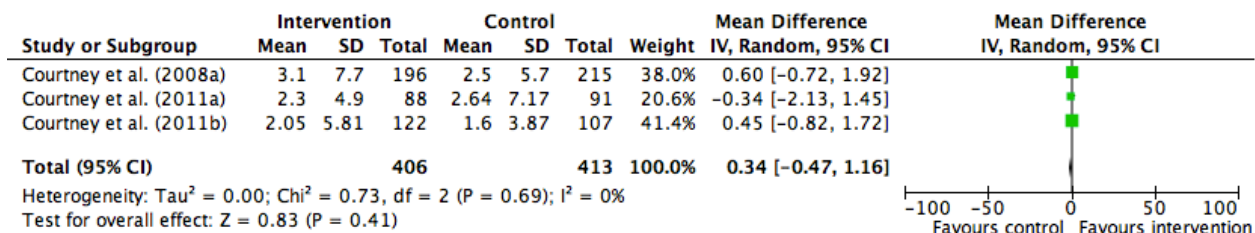


Financial

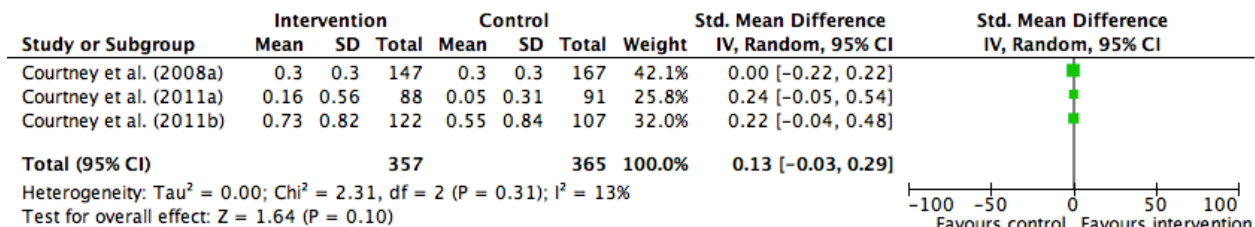
Earnings 12 months



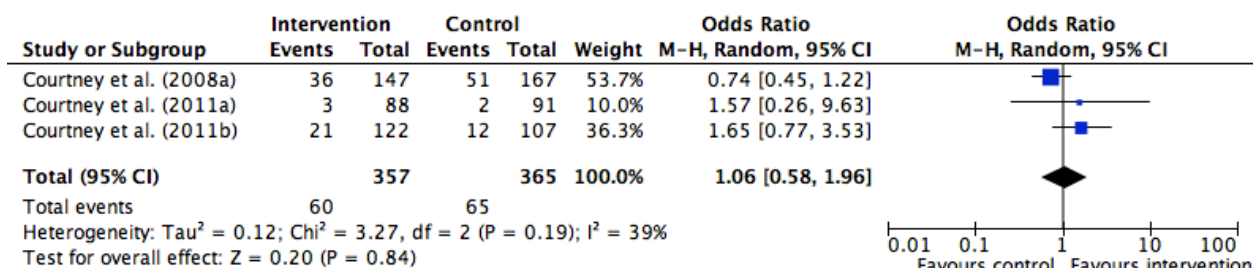
Net worth



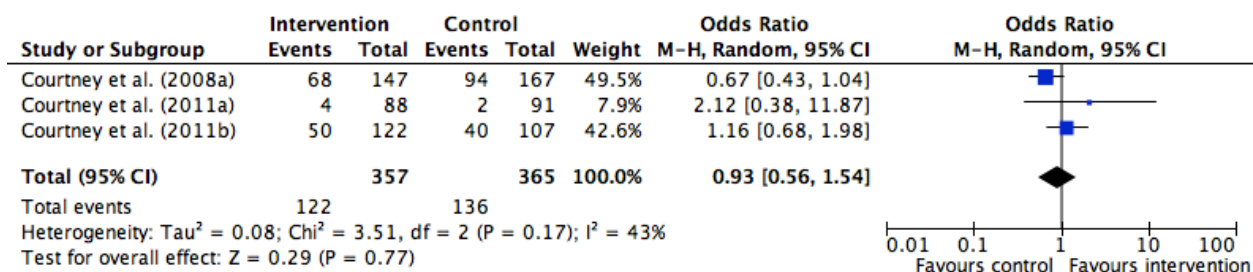
Economic hardship



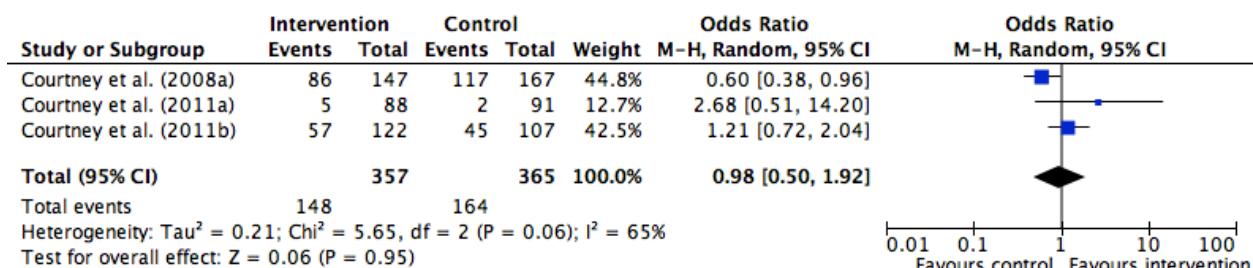
Public financial assistance



Informal financial assistance



Any financial assistance

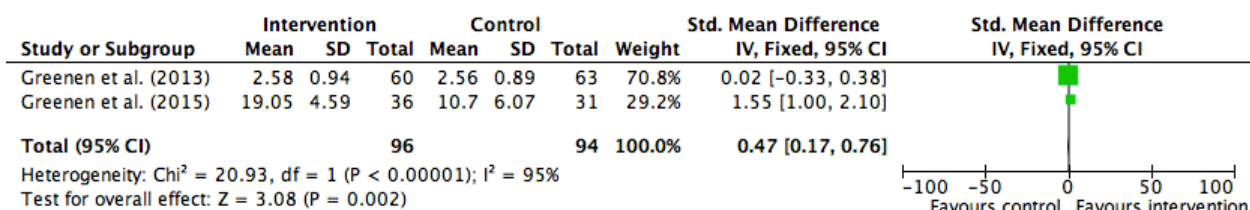


Appendix E

Full list of analyses that were heterogeneous, broken down by outcome:

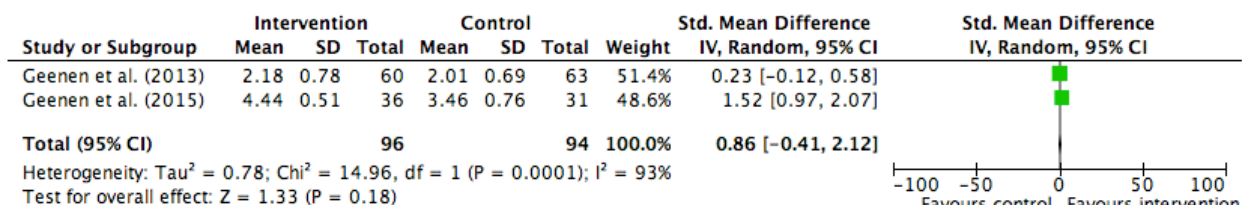
Education

College preparation

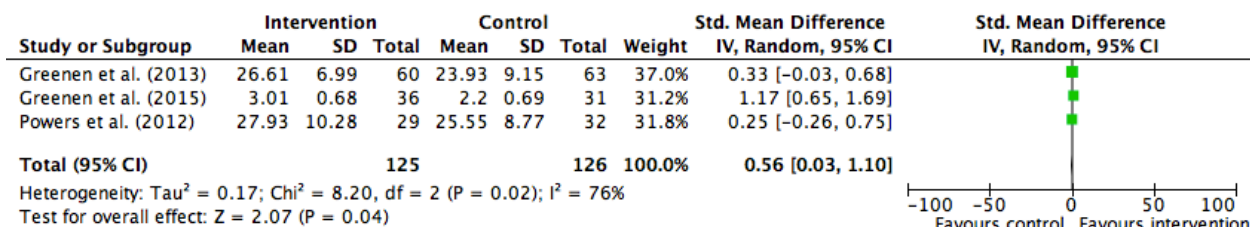


Youth engagement

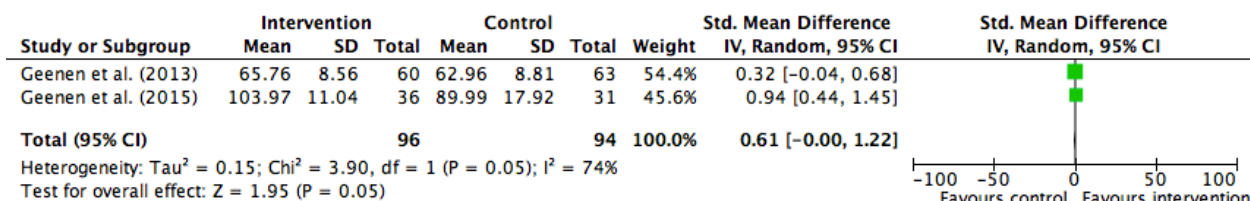
Career planning



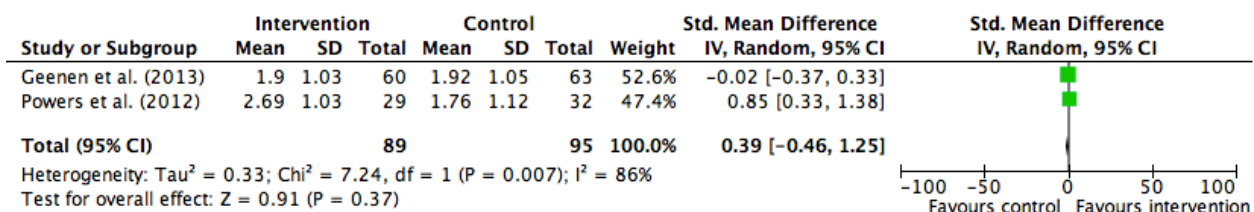
Transition planning



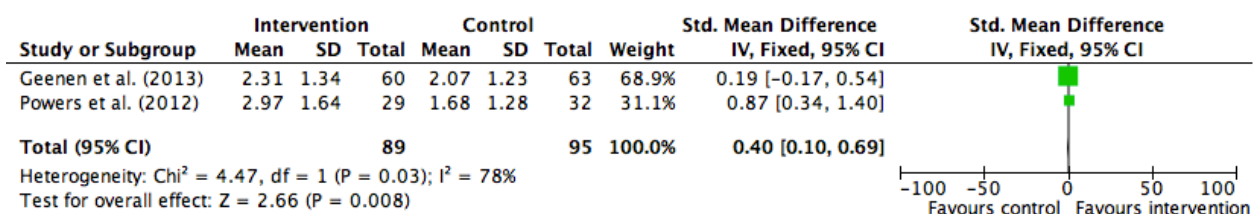
Self-determination AIR



Goals



Accomplishments



Appendix F

List of outcome measures for each study.

Outcome	Measure	Variables	Study
Education			
Achievement	Grade completed	continuous	1, 3, 4
	School grade score	continuous	3
	GPA	continuous	5
	Credits earned towards graduation	continuous	5
	Post-secondary preparation	continuous	5
	High school diploma or GED	dichotomous	1, 2, 3, 4
	College enrolment	dichotomous	1, 2, 4
	Career development	continuous	5
	Woodcock-Johnson letter-word identification calculation passage comprehension	continuous	3
Behaviour	Currently enrolled in school	dichotomous	1, 4
	Time spent on homework	continuous	5
	School behaviour	continuous	3
	School drop-out	continuous	5
Attitude	School Attitude Measure (SAM) Motivation for Schooling Student's Sense of Control over Performance Scales Self-report scales	continuous	5
Housing	Currently in foster/group home	dichotomous	1
	Living on own	dichotomous	1
	Currently homeless	dichotomous	1
	Homelessness since baseline	dichotomous	1, 2, 4
	Number of residential moves	continuous	1, 2, 4
	Placement Stability	continuous	5, 6, 8
Relationship	Relationship Competency Assessment motivation relationship skills current support Quality of Relationship Assessment	continuous	7 7 7 7 7
Identity			
Transition planning	Career Decision Self-Efficacy Scale Assessing Barriers to Education Transition Planning Assessment	continuous	6 6 6, 8
Youth Engagement			
Self-determination	Arc Self-Determination Scale AIR Self-Determination Scale AIR: Student	continuous	6, 8 6 5

	AIR: Teacher	continuous	5
	AIR: Parent	continuous	5
Education planning and engagement	EPA: Student	continuous	5
	EPA: Teacher	continuous	5
	EPA: Parent	continuous	5
Delinquency	15 item delinquency checklist	continuous	1, 2, 4
	Number of delinquent acts	continuous	1, 2, 4
	1 or more delinquent acts	dichotomous	1, 2, 4
Pregnancy	Became pregnant	dichotomous	1, 2, 4
	Got someone pregnant	dichotomous	1, 4
Life Skills			
Preparedness	18 area questionnaire	continuous	1, 2, 4
	overall preparedness	continuous	1, 2, 4
	job preparedness	continuous	1, 2, 4
Bank Accounts	Checking account	dichotomous	1, 2, 4
	Savings account	dichotomous	1, 2, 4
	Other accounts	dichotomous	2
	Any bank account	dichotomous	1, 2, 4
Important Documents	Social Security card	dichotomous	1, 2, 4
	Birth certificate	dichotomous	1, 2, 4
	Drivers license	dichotomous	1, 2, 4
	Drivers license/State ID card	dichotomous	1, 2
Mental Health	Youth Empowerment Scale-Mental Health	continuous	6
	Mental Health Recovery Measure	continuous	6
	Youth Self Report (YSR)	continuous	6
Quality of Life	Quality of Life Questionnaire (QofLQ)	continuous	6, 8
	Hopelessness Scale for Children (HS-C)	continuous	6
Emotional and Behavioural Problems	Teacher Report Form (TRF)	continuous	5, 6
	Child Behavior Checklist (CBCL)	continuous	5, 6
	Youth Self Report (YSR)	continuous	5, 6
Financial			
Employment	Any time over last 12 months	dichotomous	1, 2, 4
	Currently employed	dichotomous	1, 4
	Employment status	continuous	5, 6, 8
Earning/Net Worth	Earnings over the last 12 month	continuous	1, 2, 4
	Net worth (in thousands)	continuous	1, 2, 4
Economic Hardship	Begged, sold plasma, pawned, recycled	dichotomous	1, 2, 4
	Barrowed money/soup kitchen/went hungry	dichotomous	1, 2, 4
	Did not pay rent/bills	dichotomous	1, 2, 4
	3/5-item hardship scale	continuous	1, 2, 4
Economic Assistance	Received public assistance	continuous	1, 2, 4
	Received informal financial assistance	dichotomous	1, 2, 4
	Received any financial assistance	dichotomous	1, 2, 4

1. Life Skills Training Program (LST). Courtney et al., (2008); Greeson et al., (2015a)
2. Independent Living Program (ILP). Courtney et al., (2008); Greeson et al., (2015b)
3. Early Start to Emancipation Preparation (ESTEP). Courtney et al., (2008); Zinn & Courtney (2014)
4. Independent Living – Employment Service Program (IL-ES) Courtney et al., (2011); Zinn & Courtney (2015)
5. TAKE CHARGE (TC). Geenen et al., (2013)
6. Better Future (BF). Geenen et al., (2015)
7. Creating Ongoing Supportive Relationships (CORE). Nesmith & Christophersen (2014)
8. My Life (ML). Powers et al., (2012)