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Author/s:

Heerde, JA;Hemphill, SA;Scholes-Balog, KE

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The impact of transitional programs on post-transition outcomes for youth leaving out-of-home care: A meta-analysis

Jessica A. Heerde¹, PhD, Sheryl A. Hemphill, PhD² Kirsty E. Scholes-Balog³, PhD,

¹Post-doctoral Research Associate, Learning Sciences Institute Australia, Australian Catholic University

²Professor, School of Psychology and Program Director, Learning Sciences Institute Australia, Australian Catholic University

³Post-doctoral Research Fellow, Learning Sciences Institute Australia, Australian Catholic University

Corresponding Author: Dr. Jessica Heerde, Post-doctoral Research Associate, Learning Sciences Institute Australia, Australian Catholic University, 115 Victoria Parade, Fitzroy, Victoria 3065, Australia; Telephone: +61 3 9953 3123, Facsimile: +61 3 9417 2734, email: jessica.heerde@acu.edu.au

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Abstract

Youth residing in out-of-home care settings have often been exposed to childhood trauma, and commonly report experiencing adverse outcomes after transitioning from care. This meta-analysis appraised internationally published literature investigating the impact of transitional program participation (among youth with a baseline age 15-24 years) on post-transition outcomes of housing, education, employment, mental health, and substance use. A comprehensive search of sociology (e.g. ProQuest Sociology), psychology (e.g. PsycInfo) and health (e.g. ProQuest Family Health) electronic abstraction databases was conducted for the period 1990-2014. Search terms included 'out-of-home care', 'transition', 'housing', 'education', 'employment', 'mental health', and 'substance use'. Nineteen studies, all from the United States (US), met the inclusion criteria and were included in the meta-analysis. Living independently and homelessness were the most commonly described housing outcomes. Rates of post-transition employment varied, while rates of post-secondary education were low. Depression and alcohol use were commonly reported among transitioning youth. Findings of the meta-analysis showed that attention should be given to the potential benefit of transitional program participation on outcomes such as housing, employment, and education. Moderator analyses showed that these benefits may differ based on study design, sample size and sampling unit, but not for mean age or gender. Detailed and rigorous research is needed internationally to examine the characteristics of transitional programs resulting in more successful outcomes for youth, and whether these outcomes are sustained longitudinally.

225 words

Keywords: meta-analysis, out-of-home care, transitional programs, leaving care

What is known about this topic?

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- Youth transitioning from out-of-home care commonly experience poor post-transition outcomes
- The age at which youth are required to leave out-of-home care is much earlier than many youth typically separate from the family unit
- The impact of transitional programs on post-transition outcomes is a particularly under-researched area

What is paper adds?

- Insight into whether transitional programs aid youth in their transition to independent living and the achievement of adult social and economic independence
- There exists a distinct lack of published studies from outside the United States, hence it remains to be seen whether associations between transitional program participation and post-transition outcomes differ as a function of country
- Findings draw attention to the potential benefits of transitional program participation on post-transition outcomes
- Future research should examine the sustainability of improvements in transitional outcomes following completion of transitional program participation

Introduction

For many youth residing in out-of-home care (OHC), the experience of family breakdown, childhood abuse, and neglect (Bromfield et al., 2005) contributed to their separation or removal from their family of origin through intervention by child protection authorities (Bromfield et al., 2005, Bearsley-Smith et al., 2008). As a result, these youth commonly experience poorer health, social, behavioral, and developmental outcomes (Bearsley-Smith et al., 2008, Hyde, 2005) than youth within the general population. Importantly, the age at which youth are required to leave their OHC setting is much earlier than many youth typically separate from the family unit. It has been reported that youth often experience unsystematic and irregular support following their transition from OHC settings (London and Halfpenny, 2006). In this meta-analysis, we investigate the impact of transitional program participation on post-transition outcomes for youth leaving out-of-home care. Specifically, we collate and statistically appraise evidence from internationally published studies reporting on the impact of participation in transitional programs on post-transition outcomes (housing, education, employment, mental health, and substance use) for youth leaving OHC settings. To the authors' knowledge, there have been no studies

statistically appraising extant literature in this way to examine if these programs result in better outcomes for participants.

In Australia, the Department of Families, Housing, Community Services and Indigenous Affairs' (FaHCSIA) National Framework for Protecting Australia's Children (2009 -2020) provides principal points of reference underpinning the provision of support to youth transitioning from out-of-home care settings (Department of Families, Housing, Community Services and Indigenous Affairs, 2010, 2012). Current policy within this framework requires that youth transition from their out-of-home care setting between the ages of 15-17 years (Johnson et al., 2009; Mendes, 2002). In the United States (US), legal frameworks and policies stipulate the protection of, and provision of services to, youth in OHC settings ceases between the ages of 16-18 years (Avery, 2010). National statistics estimate approximately 26,286 youth 16-18 years exited their OHC setting, due to age, in 2011 (US Department of Health and Human Services, 2012). The Children (Leaving Care) Act 2000 in the United Kingdom (UK) aims to postpone young people's transition from care, as well as improve pathway planning and financial support. Under the Act, young people between the ages of 16-17 years are required to have a written pathway plan transitioning them to independence between the ages of 18-21 years (Dixon, Wade, Byford, Weatherly & Lee, 2006).

From a developmental perspective, the period within which youth are required to transition from their OHC setting occurs within the context of other life transitions characterized by completion of the final years of secondary education, entry into employment and/or higher education, and progression to living independently of the family unit (Avery and Freundlich, 2009, Mendes, 2005b). Successful negotiation through this developmental period is an important determinant of adult social and economic independence. Although US legislation describes an expectation that youth transitioning from OHC will be assisted in their transition to independent living through the provision of transitional housing programs (Mendes, 2005a), advocacy and funding for these programs is minimal, and it is estimated approximately 30% of youth eligible to participate in transitional housing programs do not receive such assistance (Avery and Freundlich, 2009). In the UK it is estimated that the total average annual cost of services used by young people leaving care and in their transition to independence is £21,800 per person (Dixon et al, 2006). Similarly, Australian research shows that only 1 in 3 young people 18-25 years who had transitioned from care had successfully completed their secondary education, and 3 out of 4 young people were without employment and dependent on government financial assistance, with the annual cost of service provision

(e.g. unemployment, health, and housing costs) up to \$17,590 per young person (Raman, Inder & Forbes, 2005).

Defining Out-of-Home Care and Transitional Programs

Out-of-Home Care. It is commonly acknowledged that youth residing in these settings are children and young people (aged under 18 years) who are unable to live with their birth family and require alternate living arrangements. In Australia, OHC refers to the placement of children and young people away from their parents, arising from a concern(s) the child or young person is at risk of significant harm (Australian Institute of Health and Welfare, 2012). In the US, OHC is defined as: the provision of placements (and related services) to children, young people and their families, where children and young people have been separated or removed from their family home as a result of concerns for their safety through intervention by child protective authorities (United States Department of Health and Human Services, 2014). Similar definitions exist in the UK (Dixon et al, 2006). As a result, children and young people residing in OHC settings are generally under the legal custody of the Government. OHC settings may include: ‘foster care’ (overnight and longer-term care within a private household), ‘residential care’ (supported residence arrangement), ‘family group homes’ (residential care operated like family homes), ‘home-based care’ (within the home of a carer and including ‘relative/kinship care’ and ‘foster care’), and ‘independent living’ (private boarding households) (Australian Institute of Health and Welfare, 2008, United States Department of Health and Human Services, 2014).

Transitional programs. As described above, policies under-pinning when young people are required to transition from their OHC setting, and the provision of support through the transition process, vary internationally depending on government legislation and policy context, funding, and the age of the young person (Donkoh et al., 2006). Transitional programs, commonly available to youth nearing the end of, or following, the completion their OHC placement, are generally designed to assist youth in their preparation for, and transition from, OHC settings and into independent living. Such programs focus on the development of skills required for continuing and completing education, obtaining and maintaining employment and housing, daily living, and personal development (Donkoh et al., 2006). Programs are commonly delivered in group formats with the provision of additional individual support (Donkoh et al., 2006); however, they may also include supervised living conditions. For the purpose of this review, transitional programs include independent living programs, transitional living programs, transitional housing programs, housing-based independent living programs, and residential education programs.

Associations between Transitional Programs and Post-Transition Outcomes

For many youth in OHC settings, the care provided by significant adults within these settings, or caseworkers within child protective services, may be the only available source of tangible or emotional support. Transitioning from care significantly diminishes the availability of this support, at a time when these youth are required to confront challenges outside the customary personal, social, emotional, and behavioral challenges faced by most adolescents of the same age. It is not surprising post-transition outcomes for these youth, in relation to housing, education, employment, substance use and mental health, are poor (Fowler et al., 2009). Higher rates of financial insecurity and reliance on government benefits, lower levels of health care (including mental health) utilization (Courtney and Dworsky, 2006), and homelessness (citation removed for blind review) have also been reported among transitioning youth. Incidences of these transition outcomes may be attributed to the removal of support in OHC settings, in conjunction with the absence of adequate assistance from adult services who are often ill-equipped to deal with youth-related issues (Osgood et al., 2010).

There exists a need to develop understanding of how participation in transitional programs may assist in improving post-transition outcomes for these youth; **presently this is an under-researched area.** More commonly documented are the pathways young people have taken in transitioning from their OHC settings, and the incidence of numerous post-transition outcomes. It has been posited that support provided to youth both in preparing for, and following, their transition from care is unplanned and fragmented (London and Halfpenny, 2006). Conversely, where support is provided, areas such as housing, education and training, employment, physical and mental health, and financial stability are commonly addressed (London et al., 2007). However, recent findings showing housing insecurity, homelessness, and residence in temporary living situations (citation removed for blind review) among post-transition youth provide some indication that minimally supported transitions from OHC settings may not go far enough in improving post-transition outcomes for these youth.

The Present Study

Participation in transitional programs designed to improve post-transitional outcomes may be important but underutilized resources (citation removed for blind review). This meta-analysis addresses current gaps in the literature through its focus on investigating the impact of transitional programs on post-transition outcomes such as housing, employment, education, mental health, and substance use, for youth leaving out-of-home care. A number of factors may account for differences in post-transition outcomes across studies. Research

has shown that female at-risk youth experience greater health risks, engagement in health risk behavior, and risk for victimization (Kidd and Carroll, 2007; Montgomery et al., 2002), while older transitioning youth may have more positive adult outcomes (Daining and DePanfilis, 2007). From an experimental research paradigm perspective, study designs using longitudinal data allow for inferences to be made regarding the causal effects of transitional programs on specified post-transition outcomes (Ruspini, 2002). Similarly, data collected from multiple informants (the primary sampling unit, e.g. self-report and/or case records) (O'Malley, Landon, & Guadagnoli, 2007) and sample size (Tabachnick and Fidell, 2013) may also influence differences in post-transition outcomes across studies. These factors (gender, age, study design, primary sampling unit and sample size) will be examined as moderators which may account for differences observed across studies.

Method

Systematic Literature Search and Retrieval of Studies

The guidelines and criteria described by the Centre for Reviews and Dissemination (2008) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009) were applied to the systematic search and meta-analysis. Ten databases were searched using database specific controlled subject vocabulary (that is, subject headings) and/or keywords in the title and abstract to ensure the consistency of search terms was maintained across each database. Search terms described three specific subject areas: (a) youth in OHC settings; (b) youth transitioning from OHC settings; and (c) post-transition outcomes. A full list of databases and subject headings/keywords used in conducting the systematic search are provided in Table 1.

Insert Table 1 here

Eligibility Criteria

Retrieved studies were eligible for inclusion where they: (1) reported on a sample of youth (baseline age 15-24 years), (2) were published in the English language, (3) were published between the period 1990 to 2014 in peer-reviewed journals, (4) had an abstract available, (5) presented rates of post-transition outcomes (housing, education, employment, mental health, and/or substance use), and (6) reported findings from quantitative analyses describing the impact of transitional program participation on post-transition outcomes (refer 5). Systematic searches were first conducted in November 2012, and conducted again in mid-2014 to locate newly published papers over the period 2013-14. Minimum sample sizes were not stipulated. No restrictions for the country of origin of publications was stipulated; however, due to interest in critically evaluating the most up-to-date research conducted

relevant to the foci of this review, the date range for publications was restricted to those published in the past twenty-three years. Figure 1 provides the PRIMSA diagram of published studies.

Retrieved papers that were not consistent with the eligibility criteria underpinning the foci of this review were discarded, including those analyzing samples of youth who did not participate in a transitional program, and those which did not examine any of housing, education, employment, mental health, and/or substance use as outcomes of transitional program participation. Other discarded studies presented findings for youth currently residing in OHC settings or falling outside the stipulated age range (e.g., too young or old at baseline), associations between being in OHC settings and the outcomes examined in this review, or presented findings from a sample of service providers conducting transitional programs (e.g., social workers and/or case managers) rather than a sample of youth. Abstracts detailing qualitative analyses, narrative reviews, dissertations, book reviews, or non-scholarly publications (e.g., 'grey' literature and reports) were also discarded from the review.

Retrieved abstracts were examined by at least one author and relevant articles obtained. For each article, the content of the article was inspected to determine its relevance for inclusion where the relevance of the article could not be sufficiently determined through the article's abstract. At least one author thoroughly read and assessed each article for final inclusion in the review. Articles were also identified through scanning the citations of retrieved papers. A second author checked the content of 30% of retrieved papers to ensure the accuracy of extraction and interpretation of relevant information. To accurately present the specific forms of housing, employment, education, mental health, and substance use outcomes examined in included studies, this review utilizes the terms and concepts employed within each reviewed study.

Insert Figure 1 here

Meta-analysis

Studies examining participation in transitional programs and post-transition outcomes (housing, education, employment, mental health, and substance use) for youth leaving OHC settings and including sufficient data to calculate effect sizes were included in the meta-analysis. Where the same outcomes were examined across multiple studies, effect sizes were averaged across these studies. Two studies (Jones, 2011, Jones, 2010) reported analyses using the same dataset, though they examined different post-transition outcomes hence there was no duplication of data across these studies. The meta-analysis was conducted across all

studies where sufficient data were available (8 studies, 42%) regardless of whether or not the results presented in the reviewed studies were statistically significant.

Information contained in each study was coded and included in the meta-analysis. This information included the post-transition outcomes of housing (e.g. homelessness, living arrangement), education (e.g. GED, college education), and employment (e.g. part- and full-time employment), contained in the eight studies where sufficient data were available to conduct the analysis. A diverse range of statistical techniques were employed across the reviewed studies. Statistics including percentages, t-tests, means and standard deviations, chi-square, and odds ratios were reported across studies using group designs. All analyses were performed using the Comprehensive Meta-Analysis program version 2.2.064 (BioStat, 2013). In accordance with current recommendations, and in order to use a common effect size measure across all studies, study statistics were converted to the correlation coefficient r . The meta-analysis was performed by transforming effect sizes using Fisher's Z_r weighted by the degrees of freedom ($n - 3$). This weighting takes into consideration differential estimates across studies with varying sample sizes. For ease of interpretation in reporting results, and in accordance with current recommendations, effect sizes were transformed back to the correlation coefficient r . Correlation coefficients greater than .50 were considered to represent a strong degree of effect, between .30 and .49 moderate effect, and between 0 and .29 a weak effect (Tabachnick and Fidell, 2013).

Higher values of r indicate a stronger effect of participation in transitional programs on post-transition outcomes (housing, education, employment, mental health, and substance use) for youth leaving OHC settings. To account for observed and unobserved variance, random effect models were conducted for effect size analyses (Lipsey & Wilson, 2001) and weighted mean effect sizes with 95% confidence intervals were calculated. Q-statistics for tests of heterogeneity were used to examine effect size distributions. Statistically significant Q-statistics indicated sources other than sampling error may result in differences in effect sizes (Longman, Hawes & Kohlhoff, 2015). Random effects models were used to examine categorical moderators and regression analyses used to examine continuous moderator variables. To examine whether the study samples analyzed were representative of the total sample across studies, publication bias was examined through the meta-analysis using Rosenthal's fail-safe N (Rosenthal, 1979).

Results

A description of the nineteen studies meeting the eligibility criteria and retained for analysis in this review are presented in Table 2. All studies were conducted in the United

States. With the exception of eight studies (Brown and Wilderson, 2010, Courtney et al., 2001, Jones, 2011, Jones, 2010, Mallon, 1998, Pecora et al., 2006, Rashid, 2004, Senteio et al., 2009), all were cross-sectional in nature. In all studies, the analyzed sample was drawn from service-based sites (e.g., organizations delivering transitional living programs) or the examination of case records held by these sites. Most studies only analyzed data obtained from transitional program participants without a comparison group; hence, unless otherwise stipulated the results presented within this review refer to transitional program participants.

Insert Table 2 here

Types and Rates of Post-Transition Outcomes

Rates of housing outcomes were reported in all but three studies (Cook, 1994, Jones, 2010, Lenz-Rashid, 2006), employment outcomes in all but two studies (Jones, 2010, Kroner and Mares, 2011), and education in all but five studies (Brown and Wilderson, 2010, Kroner and Mares, 2011, Lemon et al., 2005, Lenz-Rashid, 2006, Nolan, 2006). Only four studies presented rates for mental health (Collins and Ward, 2011, Courtney et al., 2001, Georgiades, 2005, Lemon et al., 2005) and substance use (Courtney et al., 2001, Georgiades, 2005, Jones, 2011, Jones, 2010) outcomes. The types and rates of post-transition outcomes across reviewed studies can be obtained in the online Supplementary material, Appendices 1-3.

Housing. Various forms of post-transitional program housing and living arrangements were reported including independent and shared living arrangements, homelessness, and residence in supervised settings, with substantial variation in the rates of youth living in these settings. For instance, Mallon (1998) reported 15% and Rashid (2004) 100% of youth were living independently in their own apartment post-transition. Elsewhere, Georgiades (2005) described 16% of youth were living with relatives, former foster parents or friends, while Kroner and Mares (2011) found 21% of youth lived with relatives, biological parents, or family friends. In some studies rates of homelessness were low (Jones, 2011, Nolan, 2006), while others found that as many as 52% of participants were homeless

Employment. Most commonly reported employment outcomes included full- and part-time employment, hours of employment, and income. Rates of employment were commonly reported for the period immediately following completion of a transitional program placement. For instance, Mares (2010) stated 31% of youth had employment at the end of their placement. Other studies described rates of employment immediately following program participation of above 60% (Lenz-Rashid, 2006, Pecora et al., 2006, Rashid, 2004). Rates of part-time employment were generally higher than full-time employment. For example, Senteio et al. (2009) found rates of part-time employment were double that of full-time

employment for youth in their sample (42% compared to 21% respectively). Similarly, Georgiades (2005) found 51% and 22% of youth were employed part- and full-time, respectively.

Education. Rates of educational outcomes, most commonly current enrolment in school, school completion, and involvement in post-school educational programs, were reported across most reviewed studies. Rates of current enrolment in high school ranged from 23% (Mares, 2010) to 53% (Collins and Ward, 2011). Longitudinally, as would be expected, rates of high school enrolment decreased over the period of 6- to 24-months post-program participation (Jones, 2011, Jones, 2010). For transitional program participants, rates of high school completion ranged between 25%-60% (Courtney et al., 2001, Mallon, 1998, Mares and Kroner, 2011, Pecora et al., 2006). Several studies examined rates of post-high school education following transitional program participation. Senteio et al. (2009) found that 4% of youth had completed additional education or training one year after the completion of their program placement. Varying rates of enrolment in college education were reported. For instance, Courtney et al. (2001) found 9% of participants in their study were enrolled in college 12-18 months after leaving care, while substantially higher rates (43%) were found by Collins and Ward (2011).

Mental health. Descriptions for rates of mental health problems following transitional program participation were reported in four reviewed studies (Collins and Ward, 2011, Courtney et al., 2001, Georgiades, 2005, Lemon et al., 2005). Collins and Ward (2011) found 49% of their sample perceived their emotional health as being good or excellent. Three studies (Collins and Ward, 2011, Courtney et al., 2001, Lemon et al., 2005) investigated use of therapeutic services by youth post-transitional program participation, with rates ranging between 21% and 92%. A small number of youth described having received hospital-based psychiatric services (Courtney et al., 2001).

Substance use. Substance use following participation in transitional programs was investigated in four studies (Courtney et al., 2001, Georgiades, 2005, Jones, 2011, Jones, 2010). For example, Jones (2011, 2010) described rates of clinical/borderline alcohol, drug, and substance abuse problems 6-36 months following the completion of a transitional program, showing rates of clinical/borderline alcohol problems increased at each of the follow-up periods, while rates of clinical/borderline drug problems remained consistent (Jones, 2011).

The Impact of Transitional Program Participation on Post-Transition Outcomes

Table 3 presents the correlation coefficient effect sizes, adjusted for sampling error in a random effects model, examining the impact of transitional program participation on post-transition outcomes. Eight studies contained sufficient data from which the meta-analysis could be conducted. These studies specifically examined the post-transition outcomes of housing, employment and education; hence the findings contained herein relate to these combined outcomes. The combined random effects model for transitional program participation and post-transition outcomes showed a small statistically significant correlation ($r = 0.19$, $p < .001$, 95% confidence interval [CI] = 0.10, 0.28) indicating that transitional program participation has some benefit on post-transition outcomes. Figure 2 presents the forest plot of the study correlation coefficient effect sizes. The analysis showed a fail safe number of 80, which is greater than the critical number 60 described by Rosenthal (1979), indicating no publication bias. The funnel plot of standard error was generally symmetrical indicating little effect of publication bias (see Figure 3). The random effects model showed a statistically significant total heterogeneity statistic ($Q = 830.48$, $df = 79$, $I^2 = 90.49$, $p < .001$) indicating the likely influence of moderator variables.

Insert Table 3 and Figures 2 & 3 here

As shown in Table 3, participation in a transitional program produced a statistically significant effect for lower rates of living alone (e.g. $r = -.64$, $p < .01$, 95% CI = $-.88, .16$), and incarceration ($r = -.50$, $p < .05$, 95% CI = $-.78, .06$), and higher rates of receiving housing assistance. Similar to housing outcomes, statistically significant effect sizes were evident for some employment outcomes. Specifically, increased attainment of full- and part-time employment and lower rates of unemployment. Similar results were evident across the studies that more generally reported on having obtained employment (e.g. $r = .70$, $p < .001$, 95% CI = $.58, .79$). A small number of studies investigated education outcomes. Findings across these studies showed participants in transitional programs tended to report a greater number of years of completed education (e.g. $r = .61$, $p < .001$, 95% CI = $.46, .73$), obtaining a college education (e.g. $r = .57$, $p < .05$, 95% CI = $.07, .84$), and completing vocational education ($r = .86$, $p < .001$, 95% CI = $.80, .90$).

Moderator analysis

Table 4 presents the correlation coefficient effect sizes (r) with confidence intervals (95% CI) from the categorical moderator analysis. Several variables showed significant moderator effects. Specifically, the effect size for cross-sectional studies was larger and statistically significant ($r = .30$, $p < .001$, 95% CI = $.17, .43$) compared to that for longitudinal studies ($r = .06$, 95% CI = $-.03, .14$). The categorical moderator tests also showed statistically

significant effects for sample size and sampling unit, such that a smaller sample size and use of data collected from case records and interviews with participants at service-based sites, showed moderating effects ($r = .35$, $p < .001$, 95% CI = .21, .47 and $r = .21^*$, 95% CI = .01, .39 respectively). Continuous moderator tests, showed no significant moderating effects for mean age ($\beta = -.80$, 95% CI -2.80, 1.20, $p = .43$) or percentage of female ($\beta = .23$, 95% CI -.43, .88, $p = .50$) participants.

Insert Table 4 here

Discussion

This systematic review and meta-analysis is unique in its examination of the impact of transitional program participation on post-transition outcomes for youth leaving OHC settings. Nineteen studies were identified and reviewed, with 8 studies included in the meta-analysis. Living independently or in shared arrangements (e.g., with family or friends) and homelessness were the most commonly described housing outcomes across reviewed studies. Rates of post-transition employment varied, with higher rates of unemployment or part-time employment than full-time employment among program participants. Findings showed program participants had often completed a high school diploma, but rates of post-secondary education were low. Depression and alcohol use were the most commonly reported mental health and substance use outcomes among program participants. Substantial inconsistency across studies was evident in the rates for all examined outcomes. Findings of the meta-analysis show a small-medium correlation between participation in transitional programs and post-transition outcomes of housing, education and employment, suggesting that some of the adverse health and behavioral post-transition outcomes experienced by transitioning youth may be mitigated by participation in transitional programs which are aimed at developing independent living skills in these specific areas.

Importantly, the findings of this review showed a distinct lack of publications in peer-reviewed journals from outside the United States, thus it remains to be seen whether associations between transitional program participation and post-transition outcomes differ as a function of context or policy. Although this review was an investigation of internationally conducted studies, and no restrictions were placed on the country of origin of the publication, no studies were located which met inclusion criteria and reported analyses conducted on samples from outside the United States. Therefore, the findings of this review may not be generalisable outside of the United States context. Internationally, research is needed to investigate the influence of transitional programs on post-transition outcomes experienced by youth transitioning from out-of-home care settings.

The findings of this review make an important contribution to research efforts examining post-transition outcomes for former OHC youth, and more specifically, understanding whether transitional programs aid youth in their transition to independent living and the achievement of adult social and economic independence. The reviewed literature has predominately focused on reporting the types and rates of numerous post-transition outcomes within the context of broader outcomes such as housing, employment, and education, and to a lesser extent, mental health and substance use. Although the findings of these studies contribute to research knowledge regarding post-transition outcomes, most reviewed studies did not examine the unique contribution that transitional program participation had in these effects. Where such impacts were presented, our meta-analysis findings showed a small effect of transitional program participation on post-transition outcomes of housing, education and employment. Of the eight studies containing sufficient data for inclusion in the meta-analysis, outcomes of substance use and mental health were not reported. Hence, although the findings of this review are limited in their ability to infer program participation is specifically associated with improved post-transition outcomes, the findings draw attention to the potential benefit of transitional program participation particularly for housing, education and employment outcomes. Further research into the impact of transitional programs on these outcomes, as well as substance use and mental health outcomes is needed, and would benefit from research designs that prospectively examine how transitional program participation impacts these outcomes.

The examination of rates of post-transition outcomes in the present review suggested participation in transitional programs may improve some outcomes for youth leaving OHC, with program participants reporting higher rates of living with friends, receipt of housing assistance, temporary employment, income, and college enrolment. Results on other outcomes were variable. Additionally, the results of the meta-analysis showed some support for effects of transitional program participation on post-transition housing, employment and education outcomes. Although the size of this effect was small, it is noteworthy given that, to the authors' knowledge, this is the first meta-analysis examining the impact of post-transition programs. Importantly, given the cross-sectional nature of the majority of the reviewed studies, the findings of this review suggest grounds for the examination of characteristics of effective transitional programs longitudinally. Results reported in longitudinal studies (Jones, 2011, Jones, 2010) generally showed initial progress towards improved outcomes for those youth who participated in transitional programs. However, these effects were not always sustained over time, suggesting the need for continued post-transition support. The moderator

analysis conducted here suggested an effect for study design, whereby the effect size for cross-sectional studies was larger and reached statistical significance in comparison to longitudinal studies. Whether these improvements were the result of participation in transitional programs, or due to sample biases or factors external to program participation, requires further investigation. For instance, sample size and the sampling unit (data collection method) also showed moderating effects. Future prospective research examining the sustainability of improvements in transitional outcomes is warranted.

Youth transitioning from OHC can be susceptible to forms of exploitation such as use of illicit drugs or involvement in the production and selling of illicit substances (Avery, 2010), victimization (Duval and Vincent, 2009), and living in unstable or insecure housing or experiencing homelessness (citation removed for blind review); however, few studies were found that examined these outcomes. In this review, only four studies reported findings relating to substance use (Courtney et al., 2001, Georgiades, 2005, Jones, 2011, Jones, 2010) and mental health (Collins and Ward, 2011, Courtney et al., 2001, Georgiades, 2005, Lemon et al., 2005) respectively. Across reviewed studies, where comparisons were made between transitional program participants and non-participants, findings were inconsistent as to whether program participation resulted in reduced substance use or mental health problems. Further, the sample in two of these studies (Jones, 2011, Jones, 2010) consisted of high needs foster youth, including those unlikely to return to their biological family, and with a history of multiple foster care placements. Samples across the remaining studies were not high needs. Importantly, the studies examining substance use and mental health post-transition outcomes did not contain sufficient data for inclusion in the meta-analysis and thus effect sizes examining the strength of impact of transitional program participation on these outcomes were not possible. Hence, it is unclear whether transitional program participation is associated with reduced rates of substance use or mental health problems for specific sub-groups of transitioning youth.

No moderator effects were found for mean age or percentage of female participants. Notably, although the number of female participants was greater than male participants in majority of the reviewed studies, no reviewed study specifically compared rates of post-transition outcomes for males and females. Analyses such as these are required to gain insight into whether, for example, female youth may be particularly at risk and warrant more intensive support and prevention services, compared to male youth for specific outcomes. For instance, prior research has highlighted gender differences in health risks among at-risk youth, with females often cited as experiencing higher suicidality (Kidd and Carroll, 2007)

and drug risk behaviors (Montgomery et al., 2002). Further, at-risk female youth commonly report sexual risk behavior and experiencing sexual victimization (citation removed for blind review). Studies examining potential gender differences in post-transition outcomes are required to investigate how gender may be associated with differences in levels of adverse post-transition outcomes, and how these differences could be targeted as modifiable processes by which to reduce the incidence of such adverse outcomes.

Study limitations.

Limitations of reviewed studies. Some potential limitations to the reviewed studies are noted. Firstly, there is a paucity of published papers comparing transitional program participants with non-participants to investigate the specific effects of program participation on post-transition outcomes. Some studies analyzed longitudinal data; however, analyses conducted examined the rates of, and differences in, rates of post-transition outcomes across time, and did not include comparisons between program participants and non-participants. Secondly, there is variation in the measurement of post-transition outcomes, as well as in follow-up periods across studies.

Limitations of the current review. Several limitations to this literature review and the interpretation of the findings are acknowledged. This review has used an extensive set of search terms; however it is acknowledged that use of some alternate terms may have identified additional papers. Terms such as 'care leavers' and 'evaluation' could be used in future reviews examining this topic. Some papers captured through the search were excluded based on the study characteristics (e.g., non-reporting of rates or relationships between transitional programs and post-transition outcomes). Although 19 papers were retained for review, only eight included papers contained sufficient data for inclusion in the meta-analysis. However, this number of papers is acceptable (Valentine, Pigott & Rothstein, 2010), and our findings did not indicate publication bias. Further, of these papers, findings are limited to the impact of transitional program participation on outcomes of housing, employment, and education only. Similarly, findings of this review may not be generalisable outside of the United States, given the lack of studies reporting analyses conducted on samples from outside this context. This review has used a conservative method including only those studies examining the transition from OHC because of age. Given the predetermined inclusion criteria for the review, it is possible that some papers will have been excluded from this review. However, the primary interest for this review was in exploring impact of participation in transitional programs on post-transition outcomes specifically for youth leaving OHC settings because of chronological age.

Conclusions

Poor post-transition outcomes are commonly reported among youth who have transitioned from out-of-home care. For some of these youth, participation in transitional programs may mitigate some of these adverse outcomes. The findings of this meta-analysis are unique in drawing attention to the potential benefit of participation in such programs. Across reviewed studies, findings showed youth participating in transitional programs following their time in OHC reported variation in living arrangements, as well as in forms of post-transition employment and education. The findings of the meta-analysis suggested that participation in transitional programs may be associated with positive housing, education and employment outcomes, illustrated by small associations between transitional program participation and these outcomes. Few studies have examined whether such associations exist for specific sub-groups of transitioning youth (e.g. males versus females, high-risk youth) or youth outside the US. Detailed and rigorous research is needed to examine the characteristics of transitional programs resulting in more successful outcomes for all youth, and whether these outcomes are sustained longitudinally.

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Table 1.

Systematic search databases and search terms.

| Discipline | Databases |
|---------------------------------------|--|
| Psychology | PsycInfo |
| Sociology | ProQuest Sociology, ProQuest Social Sciences |
| Health | ProQuest Family Health |
| Social Work | SocIndex, Sociological Abstracts, Social Services Abstracts |
| Multidisciplinary | Informit, Academic Search Complete, PAIS International |
| Area | Search terms |
| Youth in OHC settings | ‘foster home care’, ‘foster children’, ‘foster care’, ‘children- institutional care’, ‘group homes’, ‘kinship care’, ‘permanency planning’, ‘institutional care’, ‘group homes for children’, ‘group homes for youth’, ‘out of home care’, ‘state care’, and ‘residential care institutions’ |
| Youth transitioning from OHC settings | ‘transition’, ‘transitional’, ‘transitional living’, ‘emancipation’, ‘independent living’, and ‘leaving care’ |
| Post-transition outcomes | housing (‘homeless*’, ‘home’, and ‘housing’) employment (‘part-time employment’, ‘full-time employment’, ‘temporary employment’, ‘unemployment’, ‘seasonal employment’, ‘underemployment’, ‘shift work’, ‘youth employment’, ‘unemployed youth’, ‘young workers’, ‘work & education’, ‘work’, and ‘employment status’) education (‘high school equivalency’, ‘community college’, ‘academic achievement’, ‘alternative education’, ‘school |

dropouts', 'higher education', continuing education', 'adult education', 'secondary education', 'high school', 'junior high school', 'middle schools', 'vocational education', 'postsecondary education', 'universities & colleges', 'university', 'undergraduate programs', 'postdoctoral programs', 'college', and 'graduate school')

mental health ('mental health', 'depression', 'anxiety', 'health problems', 'health care', and 'health service use')

substance use ('substance use', 'alcohol', 'tobacco', 'cannabis', 'marijuana', and 'drugs')

Note. An extensive search of specific outcomes was required as these outcomes were often embedded within the text of published papers.

Table 2.

Description of studies meeting review criteria.

| Author | Country of Origin | Study Design | Cross-sectional/ Longitudinal | Primary Sampling Unit | Data Collection Method | Sample Size (N) | Gender (% female) | Average Age (yrs) |
|---------------------------|-------------------|--------------|----------------------------------|--------------------------------------|--------------------------|----------------------------|-----------------------------|-----------------------------|
| Brown & Wilderson (2010) | USA | Quantitative | Longitudinal | Service-based sites | Interview | Lease/Holloway | Lease/Holloway | Lease/Holloway |
| | | | | | Monthly progress reports | House 145 Larkin Street | House 57.0 Larkin Street | House 18.5 Larkin Street |
| | | | | | Exit interview | THP 146 | THP 34.0 | THP 20.6 |
| Collins & Ward (2011) | USA | Quantitative | Cross-sectional | Case records and service-based sites | Structured interview | 96 | 63.0 | Not stated |
| Cook (1994) | USA | Quantitative | Cross-sectional | Case records | Interview | 810 | 57.0 | 21.0 |
| Courtney et al. (2001) | USA | Quantitative | Longitudinal | Case records | Structured interview | Wave 1 141 | Wave 1 57.0 | Not stated |
| | | | | | | Wave 2 113 | Wave 2 55.0 | |
| Georgiades (2005) | USA | Quantitative | Cross-sectional | Case records and service-based sites | Survey | ILP 49 | 78.0 | 20.0 |
| | | | | | | Non-ILP 18 | | |
| Jones (2011) [#] | USA | Quantitative | Longitudinal | Service-based site | Structured interview | Discharge 106 | Transitional | Wave 1 18.3 |
| | | | | | | 6-months 106 | House 59.3 | |
| | | | | | | 12-months 80 | Other living arrangements | |
| | | | | | | 24-months 50 | 62.0 | |
| Jones (2010) [#] | USA | Quantitative | Longitudinal | Service-based site | Structured interview | 36-months 25 | Total 61.5 | Attending school 18.3 |
| | | | | | | Discharge 106 | Attending | |
| | | | | | | 6-months 106 | school 54.3 | |

| | | | | | | | | |
|------------------------|-----|----------------------------|-----------------|-------------------------------------|--|--------------|---------------|----------------|
| | | | | | | 12-months 80 | Not attending | Not attending |
| | | | | | | 24-months 50 | school 63.5 | school 18.2 |
| | | | | | | 36-months 25 | Total 60.4 | Total 18.3 |
| Kroner & Mares (2011) | USA | Quantitative | Cross-sectional | Case records | Review of case records | 367 | 55.0 | 17.9 |
| Lemon et al. (2005) | USA | Quantitative & Qualitative | Cross-sectional | Case records | Survey | ILP 81 | ILP 84.0 | ILP 21.6 |
| | | | | | Ethnographic interview | Non-ILP 113 | Non-ILP 75.2 | Non-ILP 24.0 |
| Lenz-Rashid (2006) | USA | Quantitative | Cross-sectional | Case records | Review of case records | FCH 104 | FCH 41.0 | FCH 19.3 |
| | | | | | | NFCH 147 | NFCH 37.0 | NFCH 19.8 |
| | | | | | | Survey: | | |
| | | | | | | ILP 44 | Survey: | Survey: |
| | | | | | | Non-ILP 32 | ILP 63.0 | ILP 19.0 |
| Lindsey & Ahmed (1999) | USA | Quantitative & Qualitative | Cross-sectional | Service-based site | Survey & Interview | Interview: | Non-ILP 48.0 | Non-ILP 18.0 |
| | | | | | | ILP 46 | Interview: | Interview: |
| | | | | | | Non-ILP | Not stated | Not stated |
| | | | | | | Not stated | | |
| Mallon (1998) | USA | Quantitative | Longitudinal | Service-based site and case records | Survey, review of case records & Interview | 46 | 0.0 | Discharge 21.0 |
| | | | | | | | | Follow-up 24.0 |
| Mares (2010) | USA | Quantitative | Cross-sectional | Case records | Case records | 108 | 58.0 | Not stated |
| Mares & Kroner (2011) | USA | Quantitative | Cross-sectional | Case records | Review of case records | 385 | 58.0 | 18.7 |
| Nolan (2006) | USA | Quantitative | Cross-sectional | Case records | Review of case records | 40 | 42.0 | Not stated |
| | | | | | | | | Discharge Not |
| Pecora et al. (2006) | USA | Quantitative | Longitudinal | Case records | Review of case records & Interview | 1082^ | 54.6 | stated |
| | | | | | | | | Follow-up 30.5 |
| | | | | | | | Intake 43.4 | Intake 19.0 |
| Rashid (2004) | USA | Quantitative | Longitudinal | Case records | Review of case records | 23 | Follow-up Not | Follow-up |
| | | | | | | | stated | Not stated |

| | | | | | | | | |
|------------------------------|-----|--------------|-----------------|--------------------|------------------------|----------------------|---|---|
| Scannapieco et al. (1995) | USA | Quantitative | Cross-sectional | Case records | Review of case records | ILP 44 Non-ILP 46 | ILP 53.0 Non-ILP 47 Baseline 54.2 | ILP 19.3 Non-ILP 19.0 Baseline 20.3 |
| Senteio et al. (2009) | USA | Quantitative | Longitudinal | Service-based site | Survey | 24 | Follow-up Not stated | Follow-up Not stated |

Note. Service-based sites include shelters and drop-in centers. Street-based sites include street corners, populated areas/blocks, parks, alleys, bars, and fast-food restaurants.

Case records refer to client records held within the service-based site. THP = Transitional housing program, FCH = foster care history, NFCH = no foster care history, ILP = independent living program

^ Combined sample including youth who did and did not receive independent living services while having been placed in foster care.

#Same analyzed sample.

Table 3. Meta-analysis results, including correlation coefficient effect sizes (r) with confidence intervals (95 % CI) for the post-transition outcomes.

| Study | Post-transition outcome | Correlation coefficient (r) | 95% CI | z-Value |
|---------------------------------|--|--------------------------------------|--------------|-------------|
| Housing | | | | |
| Brown & Wilderson (2010) | Runaway/street | -.24 | [-.54, .12] | -1.32 |
| | Shelter | -.36 | [-.73, .17] | -1.35 |
| | Correction/detention | .00 | [-.63, .00] | -1.95 |
| | Substance abuse treatment | -.29 | [-.81, .49] | -.70 |
| | Inpatient psychiatric treatment | -.48 | [-.84, .19] | -1.44 |
| | Private residence - Individual | .06 | [-.09, .21] | .78 |
| | Private residence – Partner or spouse | -.19 | [-.68, .41] | -.60 |
| | Private residence – Parent or guardian | .12 | [-.16, .38] | .84 |
| | Private residence – Relative or friend | .11 | [-.04, .26] | 1.41 |
| | Transitional living program | -.36 | [-.73, .17] | -1.35 |
| | Group home | .32 | [-.47, .82] | .78 |
| | Living alone | -.65* | [-.88, -.17] | -2.50 |
| | Other | .16 | [-.16, .45] | .97 |
| | Georgiades (2005) | Relatives, foster parents or friends | -.16 | [-.44, .15] |
| Living independently | | .31* | [.04, .53] | 2.26 |
| Never experienced homelessness | | .04 | [-.31, .37] | .20 |
| Homeless between 1 and 3 nights | | .24 | [-.44, .75] | .67 |
| Homelessness more than 3 nights | | -.18 | [-.50, .20] | -.92 |
| Currently incarcerated | | -.50* | [-.78, -.06] | -2.19 |

| | | | | |
|--------------------------|---|---------|--------------|-------|
| Jones (2011) | Living independently (6 months post-transition) | .20* | [.01, .37] | 2.06 |
| | Number of housing moves (6 months post-transition) | .45*** | [.30, .59] | 5.32 |
| | Rent and utilities (6 months post-transition) | .41*** | [.25, .55] | 4.73 |
| | Living independently (12 months post-transition) | .22* | [.01, .42] | 2.04 |
| | Number of housing moves (12 months post-transition) | .30** | [.10, .48] | 2.87 |
| | Rent and utilities (12 months post-transition) | .11 | [-.11, .32] | .97 |
| | Living independently (24 months post-transition) | .03 | [-.24, .30] | .22 |
| | Number of housing moves (24 months post-transition) | .09 | [-.19, .35] | .61 |
| | Rent and utilities (24 months post-transition) | .28* | [.02, .51] | 2.08 |
| Lemon et al. (2005) | Without a place to sleep (Homelessness) | -.12 | [-.31, .08] | -1.20 |
| Lindsey & Ahmed (1999) | Receipt of housing assistance | .27* | [.06, .46] | 2.45 |
| | One or more episodes of homelessness | -.01 | [-.25, .23] | -.09 |
| | Living independently | .27* | [.05, .46] | 2.41 |
| Senteio et al. (2009) | Homeless or threatened with eviction | .65*** | [.34, .84] | 3.57 |
| <hr/> | | | | |
| Employment | | | | |
| <hr/> | | | | |
| Brown & Wilderson (2010) | Employed full-time | .16 | [-.03, .33] | 1.68 |
| | Employed part-time | .23* | [.06, .40] | 2.55 |
| | Unemployed | -.15 | [-.29, .001] | -1.95 |
| Georgiades (2005) | Employed full-time | .23 | [-.00, .44] | 1.93 |
| | Employed part-time | .67** | [.28, .87] | 3.02 |
| | Unemployed | -.64*** | [-.80, -.40] | -4.40 |
| Jones (2011) | Employed (6 months post-transition) | -.11 | [-.31, .11] | -.98 |
| | Unemployed (6 months post-transition) | -.27* | [-.46, -.05] | -2.40 |
| | Employed (12 months post-transition) | .13 | [-.08, .33] | 1.18 |
| | Unemployed (12 months post-transition) | -.12 | [-.34, .11] | -1.01 |
| | Employed (24 months post-transition) | -.23* | [-.43, -.00] | -1.97 |

| | | | | |
|---------------------------|--|--------|--------------|-------|
| | Unemployed (24 months post-transition) | -.36** | [-.55, -.14] | -3.15 |
| Lemon et al. (2005) | Employed | -.19* | [-.34, -.03] | -2.27 |
| Lindsey & Ahmed (1999) | Employed | .70*** | [.58, .79] | 8.68 |
| | Employed full-time | .24 | [-.03, .47] | 1.75 |
| | Employed part-time | -.07 | [-.36, .24] | -.43 |
| | Unemployed | -.24 | [-.49, .04] | -1.71 |
| Scannapieco et al. (1995) | Employed | .57*** | [.29, .76] | 3.63 |
| | History of employment | .71** | [.31, .89] | 3.09 |
| Education | | | | |
| Georgiades (2005) | Completed education | .61*** | [.46, .73] | 6.41 |
| | Average years of completed education | .53*** | [.35, .67] | 5.22 |
| | No high school diploma or GED | .19 | [-.25, .56] | .83 |
| | High school diploma or GED | .41** | [.12, .64] | 2.74 |
| | College education | .57* | [.07, .84] | 2.20 |
| Jones (2011) | Attending school (6 months post-transition) | .02 | [-.19, .23] | .20 |
| | Attending school (12 months post-transition) | -.09 | [-.29, .12] | -.80 |
| | Attending school (24 months post-transition) | -.09 | [-.29, .13] | -.78 |
| Lindsey & Ahmed (1999) | Completed high school or GED | .80*** | [.72, .86] | 11.57 |
| | Completed technical/vocational program or some college | .86*** | [.80, .90] | 14.09 |
| | Currently enrolled in college | .82*** | [.75, .87] | 12.22 |
| Senteio et al. (2009) | Completed high school diploma or GED | .65*** | [.34, .84] | 3.57 |

Note. Random effects analyses are reported. Correlation (r) is the observed correlation adjusted for sampling error.

*p < 0.05, ***p < 0.001, GED = General Education Development Program

Table 4. Categorical moderator analysis results, including correlation coefficient effect sizes (r) with confidence intervals (95 % CI).

| Moderator | K | Correlation coefficient (r) | 95% CI | Q | Df(Q) |
|--------------------------------------|----|-----------------------------|-------------|-----------|-------|
| Study design | | | | | |
| Cross-sectional | 43 | .30*** | [.17, .43] | 569.67*** | 42 |
| Longitudinal | 37 | .06 | [-.03, .14] | 141.40*** | 36 |
| Sample size | | | | | |
| 0-100 participants | 42 | .35*** | [.21, .47] | 479.88*** | 41 |
| 100+ participants | 38 | .02 | [-.05, .10] | 134.31*** | 37 |
| Sampling Unit | | | | | |
| Case records | 7 | .18 | [-.02, .36] | 37.26*** | 6 |
| Service based sites | 55 | .18** | [.07, .29] | 650.78*** | 54 |
| Case records and service based sites | 18 | .21* | [.01, .39] | 123.10*** | 17 |

Note. Random effects analyses are reported. Correlation (r) is the observed correlation adjusted for sampling error. *p < 0.05, **p < .01, ***p < 0.001, K = number of studies, Q = Cochran's heterogeneity statistic, df = degrees of freedom.

Figure 1

PRISMA diagram of published studies

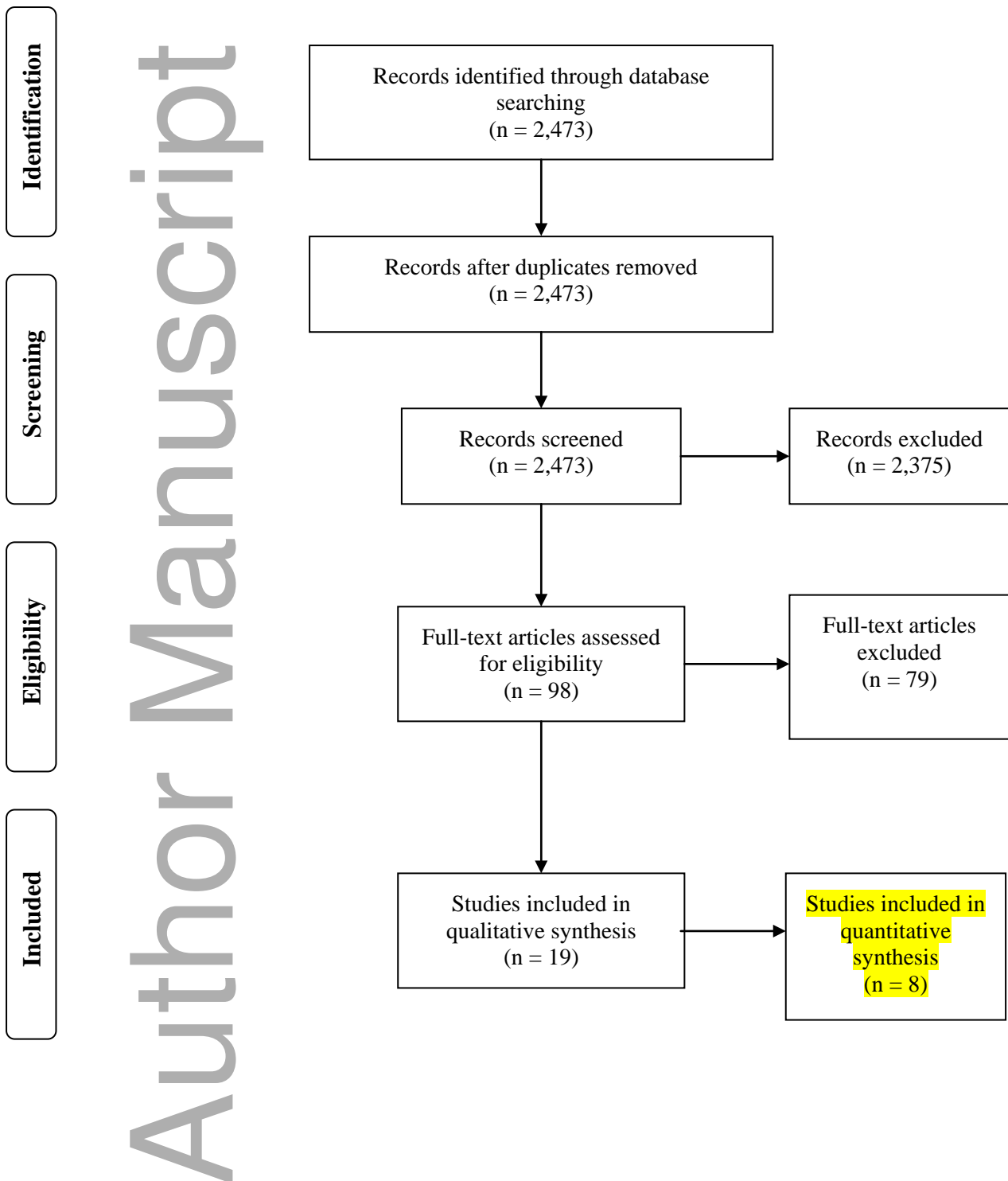


Figure 2: Forest plot of study and correlation coefficient effect sizes (r) with confidence intervals (95 % CI) for the post-transition outcomes.

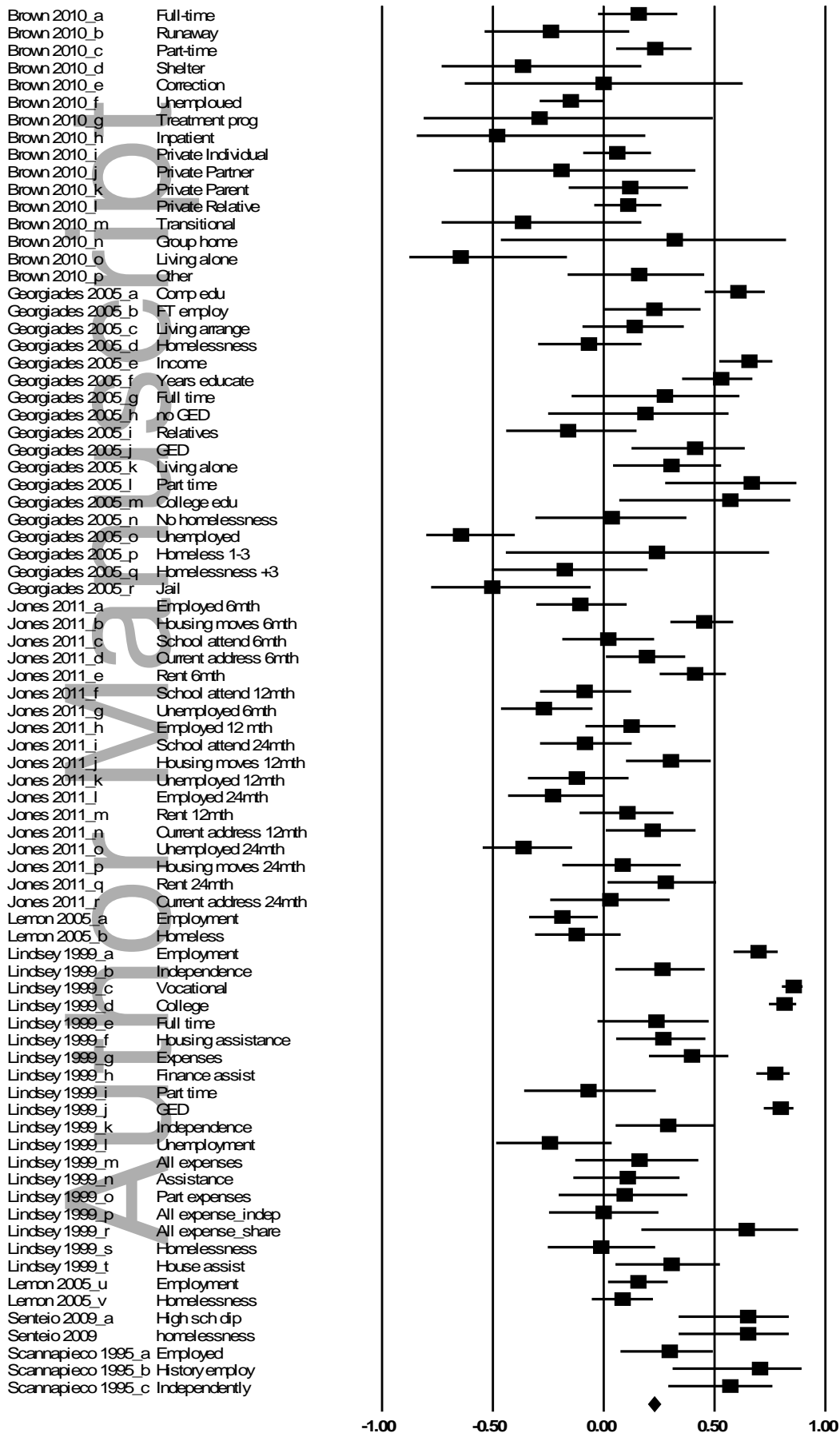


Figure 3. Forest plot of standard error for publication bias.

