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# From care to education and employment: A meta-analysis

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ABSTRACT

This study aimed to review and analyze the pathways from care to education and employment, using meta-analysis. Ten meta-analyses were conducted, five to examine the association of placement stability, race, mentoring, gender and education with employment outcomes; and five to examine the association of placement stability, race, mentoring, gender and maltreatment with education outcomes. A systematic literature search in five data bases (PubMed, PsycINFO, ProQuest and Web of Science) identified 12 publications with employment outcomes for youth out of care ($N$ = 9392) and 12 publications with education outcomes ($N$ = 6781). Being a girl and having a high school diploma were found to be related to higher odds of employment. However, no significant overall effects for employment outcomes were found for placement stability, race and mentoring. As regards to education outcomes, meta-analytic results indicated that placement stability is linked with a higher probability of having a high school diploma. The other meta-analyses pointed out the nonexistence of significant differences of educational level considering the variables race, gender, mentoring and type of maltreatment. This study indicated that placement instability in might be where the problem of achieving improvements in care leavers' education and employability actually lies. Limitations, such as sample size and a bias regarding the origin of the studies included, should be considered in interpreting results. Research on factors influencing the trajectories of young people leaving care is still limited, therefore, it is important that more effective studies will be conducted to draw valid conclusions for different child welfare contexts and countries.

## 1. Introduction

For approximately 2.7 million children and adolescents that suffer from abuse and neglect around the world, being taken into care by the child welfare system is a reality (Petrowski, Cappa, & Gross, 2017). Out-of-home care is a protective temporary or permanent living arrangement with different formats and characteristics depending on the country and region where the child lives. Recent studies have shown that the most effective and desirable type of placement is a foster family (Barth, 2002; Dozier et al., 2014; Li, Chng, & Chu, 2017; Van IJzendoorn, Bakermans-Kranenburg, & Scott, 2015). For a large part of the European continent, as well as for high income economies such as the United States, Canada and Australia, the vast majority of out-of-home placements are in foster families, although the distribution of resources and placement policies differ greatly between those countries. In Sweden and England, the majority of children in the protection system are placed in non-relative foster families, while in countries like Australia and Spain kinship care is the most frequent type of placement (AIHW, 2017). However, foster care is far from being the only formal type of out-of-home care existing, and even in some high-income economies like Germany, half of children are in residential care. In low and some middle-income economies, like Portugal and countries in South America, residential care remains the most common type placement, and there is a very low incidence of placement in foster care (Delgado, 2010; Montserrat & Casas, 2014; Pinto, Oliveira, Ribeiro, & Melo, 2013; Rubilar, 2015). According to the United Nations, residential care is care provided by any non-family-based group setting, including group homes, which can last for short or long periods of time (UNGA, 2010). Residential care centers also differ significantly from one context to another. The diversity ranges from institutions that are still sheltering a large number of children, to contexts where residential care is provided in group homes of 6 to 9 children, to those in which residential care is understood specifically as a therapeutic resource (Whittaker et al., 2016).

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### 1.1. Young people leaving care

Regardless the setting where children experience out-of-home care, their path of vulnerability lead them to be at greater risk of developmental disadvantages (Bick et al., 2015; Humphreys, Nelson, Fox, & Zeanah, 2017; Turney & Wideman, 2016) and if they reach the age of emancipation while in the protection system, in many countries they will have to continue life on their own, whether they are prepared for it or not. The harsh trajectory faced by youth transitioning from care to independent living has been object of researchers worldwide and efforts are being made to explain it theoretically and contextually (Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001; Greeson, 2013; Montserrat & Casas, 2014). Greeson (2013) developed a model, based on Gotlib and Wheaton (1997), entitled "The pathway from emancipation to lifelong disadvantage and dependence". The author alleges, based on the fact that most youth leaving care have inadequate independent life skills and lack of relationship with caring adults, that immediate outcomes are usually negative. Early outcomes tend to worsen due to the adverse context awaiting for them, composed of restricted options and strained coping strategies to deal with so. This chain of adversities eventually leads to persistent hardship and dependence even after many years have passed (Greeson, 2013).

Recent studies indicate that youth who aged out of care are less likely to be employed (Courtney & Dworsky, 2006; Hook & Courtney, 2011; Okpych & Courtney, 2014), have higher rates of school dropout (Smithgall, Gladden, Howard, George, & Courtney, 2004; Stott, 2013), and less chances of attending or engaging in college (Kirk, Lewis, Nilsen, & Colvin, 2011; Urnau, Font, & Rawls, 2012) when compared to youth with no out-of-home care experience. Also compared to general population, emancipated youth are at greater risk of substance abuse (Hudson & Nandy, 2012; Lenz-Rashid, 2006), mental health problems (Courtney & Dworsky, 2006; Dixon, 2008), unsafe sexual behavior and undesired pregnancy (Hudson & Nandy, 2012; Oshima, Narendorf, & McMillen, 2013), engaging in criminal behavior (Mersky & Janczewski, 2013), as well as of receiving government benefits (Courtney et al., 2016).

Regardless of all risk factors involved in the process of transitioning from care to adult life, there is always the possibility of overcoming and achieving positive outcomes. Studies have demonstrated that around 37 to 47% of young people aging out of care can exhibit a resilient profile with characteristics like pursuing educational and employment opportunities with success, financial independence, being engaged with community and in intimate relationships with partners, family and friends (Del Valle, Bravo, Alvarez, & Fernanz, 2008; Yates & Grey, 2012). To achieve better outcomes, youth with resilient profiles possibly experienced protective factors during their development that moderated the effects of adversity (Masten, 2001). One major protective factor that has widely been reported as the most important predictor of better outcomes is the relationship with at least one caring prosocial adult (Masten & Coatsworth, 1998). Together with environmental qualities, individual qualities such as future expectations, good intellectual functioning, optimism, autonomy, high self-esteem and prosocial behavior are important predictors of better outcomes in general population exposed to adversity (Luthar, 2006; Masten & Coatsworth, 1998; Masten & Garmezy, 1985; Rutter, 1985).

### 1.2. Potential factors influencing after care outcomes

Regarding young people aging out of care, numerous studies have been conducted to investigate the potential factors influencing after care outcomes (Daly, 2012; Dinisman, 2014; Mitchell, Jones, & Renema, 2014; Rutman & Hubberstey, 2016). Not surprisingly most research on this topic comprised measures and instruments of social and emotional support, interpersonal relationships and other variables related to support from different sources (Cashmore & Paxman, 2006; Collins, Spencer, & Ward, 2010; Rutman & Hubberstey, 2016). Aligned with resilience studies, one type of support that has consistently been reported as predictor of good outcomes after leaving care is having a mentor (Greeson, Usher, & Grinstein-Weiss, 2010; Munson & McMillen, 2009; Osterling & Hines, 2006). Mentoring is a relationship that connects youth with caring adults to offer guidance, support, and encouragement aimed to developing the competence and character of the young person (Rhodes, 2005). One of the many advantages of having a mentor is the stability offered by this type of relationship. Placement changes, and consequent changes of caregivers, are common life events for children protected by the welfare system (James, Landsverk, & Slymen, 2004). Placement instability is an important risk factor for child development and has also being linked to negative outcomes for young people leaving care (Barth & Jonson-Reid, 2000; Humphreys et al., 2017; Pecora et al., 2005). A number of individual characteristics have also been investigated as predictors of better outcomes for care leavers, such as: socio demographic characteristics (gender, age, ethnicity) (Barnow et al., 2015; Berzin, 2008; Collins & Ward, 2011); mental health (Dixon, 2008); educational level (Leathers & Testa, 2006; Lenz-Rashid, 2006); and type of maltreatment (Okpych & Courtney, 2014; Scannapieco, Smith, & Blakeney-Strong, 2015).

### 1.3. Current Study

Light has been shed to the importance of investigating factors influencing the trajectory of young people aging out of care by numerous recent publications, some of which we have cited here. Yet it seems important to review and analyze in a systematic way all the important results produced with focus on outcomes of young people leaving care, especially of the studies with quantitative methodologies, representative samples and multivariate analyses. In the current study, the technique of meta-analysis was used to summarize results of multiple studies of this kind (Walker, Hernandez, & Kattan, 2008). Summarizing results is especially important and useful in the field of development of care leavers, considering it is a research area characterized by a wide variety of conflicting findings which hinders getting a correct overview of the domain. Another advantage of using meta-analysis in this field refers to the fact that this technique allows obtaining a more reliable overall effect size than is available from the individual studies (Borenstein, Hedges, Higgis, & Rothstein, 2009; Cooper, Hedges, & Valentine, 2009). This is particularly helpful in a study domain like aging out of care, normally characterized by small studies with possibly biased samples (Jackson, Gabrielle, Tunno, & Hambrick, 2012).

A correct overview of research on aging out of care can enable researchers to design future investigations, practitioners to improve clinical practice and policy makers to hammer out the best policies for this public. The urgent need to find answers to better support youth who aged out of care, demonstrated by vast scope of literature on that matter worldwide, justifies summarizing these efforts in an attempt to point the direction to which new studies and practices should concentrate. For that purpose, we examined (i) the association of employment outcomes with placement stability, race, mentoring, gender and education; and (ii) the association of education outcomes with placement stability, race, mentoring, gender and maltreatment. Variables possibly related to educational and employment outcomes were identified a priori, based on literature review, and included in the meta-analysis if enough studies were found to investigate the relation.

In sum, we aimed to assign and detail which factors are most likely to be related to outcomes of young people leaving care, considering the scope of literature existing on that matter. No specific hypotheses are formulated regarding the relation of each variable with education and employment outcomes, because earlier studies reported inconclusive finding on these relationships.

## 2. Method

### 2.1. Selection of studies

Three different search strategies were used to find all available

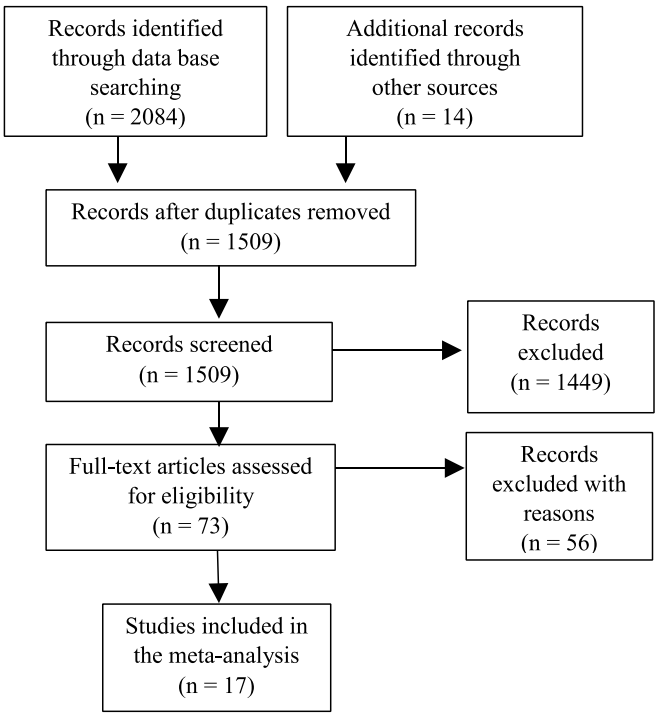


**Fig. 1.** Flow diagram of all stages of the literature search.

studies published before September 2016. Relevant literature was first searched in four different electronic databases (PubMed, PsycINFO, ProQuest and Web of Science) in the period from July to September 2016. The search terms used were from three types: (1) "foster care" OR "foster youth" OR "young people" OR "young adult" AND (2) "transitioning from" OR "aging out" OR "leaving" OR "independent living" OR "autonomy" AND (3) "foster care" OR "residential care" OR "out of home care" OR "care system". One at a time searches were performed, using all possible combinations of one term from each group (1 + 2 + 3), without using limiters. Second, the reference lists of the collected studies were searched to identify more relevant sources. Finally, experts were consulted to provide other pertinent studies.

The search resulted in 1509 records as shown in the flow diagram presented in Fig. 1. Records were screened by two independent reviewers using a screening form that was developed a priori containing all eligible criteria and reviewer's final decision for each study (included/not included). Discrepancies were resolved by consensus after argument between both reviewers. At stage one studies were screened using abstracts, and 1449 records were excluded. The same procedure was adopted in stage two, by reading full text, resulting in 56 records excluded because they did not meet the inclusion criteria.

To be included in the meta-analysis, studies had to include young people aging out of care (between 16 and 30 years old). Besides that, we were interested in studies investigating factors influencing two types of outcomes: employment and education. Because multiple studies investigated both types of outcome (Ahrens, DuBois, Richardson, Fan, & Lozano, 2008; Garcia, Pecora, Harachi, & Aisenberg, 2012; Scannapieco et al., 2015) and participants can only be included in a meta-analysis once, two separated meta-analysis were conducted, one for each type of outcome. Both employment and education had to be measured as dichotomous variables: currently employed (yes/no) and completing high school or having a high school diploma (yes/no). Also, there were studies that included outcomes related to employment and education as parts of an overall measure (composite scores together with variables such as housing, substance abuse, interpersonal relationships, etc.). Those studies, in which no separate measure of employment and/or education was reported, were also excluded (Cashmore & Paxman, 2006; Daining & DePanfilis, 2007; Del Valle, Bravo, Alvarez, & Fernanz, 2007).

Another exclusion reason was that if two or more articles were based on the same sample, we chose to include the one with the larger sample size (Collins & Ward, 2011; Courtney & Dworsky, 2006; Courtney, Hook, & Lee, 2012) or the one with more detailed information (Berzin, 2008). After screening for all of these inclusion and exclusion criteria, one last study was excluded (Lenz-Rashid, 2006), because it reported results of aspects influencing employment outcomes after an intervention, which could bias the overall effect size of the meta-analysis and cannot be meaningfully compared with studies wherein the young people did not receive an intervention. No restriction was made concerning country or region where study was conducted. As a result, a total of 17 studies were included on the meta-analysis. With regard to quality of individual studies, every record included on the sample was published in a peer review journal, with impact factors ranging from 0.29 to 5.80.

### 2.2. Coding procedure

Two series of five meta-analyses were conducted. For the first series on education we extracted effect sizes on the relations with race; gender; placement stability; type of maltreatment and mentoring. For the second series on employment we coded on race; gender; placement stability; education and mentoring. The choice of coding for those variables was based on literature review and the availability of at least three studies for variables of interest because this is the minimum to perform a meta-analysis. Some factors that could potentially influence employment and education outcomes, such as mental health, for example, could not be included because not enough studies reported data about this relation. The same happened with the variable mentoring related to employment outcome. Age was another factor of interest based on the literature review, but because of the heterogeneity in reporting (i.e., age at the time the study took place, age at leaving care; age at entering care) we could not meaningfully combine them.

After the choice of variables was made, data from text and tables were extracted and used to compute meta-analysis. Information of each study was coded using a standardized coding scheme developed a priori (available upon request). All effect sizes were converted to odds ratios (OR) prior to analyses. An OR represents the odds that an outcome (e.g., high school diploma, employment) will occur given a particular exposure (e.g., placement stability, mentoring, etc.), compared to the odds of the outcome occurring in the absence of that exposure (Szumilas, 2010). Most studies contained odds ratios for all samples reported. However, for studies not containing OR, they were computed using other data (e.g., correlations). For articles that included multiple independent samples (e.g., different states, boys and girls) data were inserted in the meta-analysis separately. If articles included multiple dependent samples (e. g. different informants for the same study population) the findings were averaged in the meta-analysis (Borenstein et al., 2009).

In order to describe the studies included in the meta-analyses, studies were also coded on mean age, age range, sample sizes, percentage of females, country, informant, outcome measures and study design. Two of the authors independently extracted the data for each study, as well as the sample size and moderators. Differences between authors were discussed and resolved by consensus. Prior to discussion inter rated reliability between authors was of 83%.

### 2.3. Effect sizes

The program Comprehensive Meta-Analysis Version 2 (Borenstein, Hedges, Higgis, & Rothstein, 2005) was used to perform the meta-analyses. *P*-values for correlations were used to compute the effect size for most of the articles. However, we also used the correlation and sample size, odds ratios and confidence intervals, log odds ratios and

**Table 1**
Characteristics of the studies included in the meta-analyses.

| | Year | Country | Sample size | Age rage/mean | Design | Study interval | Girls | Informant | Analysis | Outcome | Variables |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ahrens, DuBois, Richardson, Fan, & Lozano. | 2008 | USA | 310 | 16 (wave 1) | L | 6 years | 57% | Youth | Logistic regression | Em/Ed | Me |
| Barnow, Buck, O'Brien, Pecora, Ellis, & Steiner. | 2015 | USA | 1058 | 17–23 | C | NC | 58.40% | Youth | Logistic regression | Em/Ed | R/G/E |
| Berzin, | 2008 | USA | 136 | 12–18 | L | 7 years | 49.30% | Youth and foster parent | *t*-tests, chi-squared, logistic regression | Ed | R/G |
| Collins, Spencer, & Ward. | 2010 | USA | 96 | 19 and up | C | NC | 63% | Youth | Correlations | Ed | Me |
| Dixon. | 2007 | UK | 106 | 16–18 | L | 1 year | 53% | Youth | A p-value is reported[a] | Em | PS |
| Dworsky, White, O'Brien, Pecora, Courtney, Kessler, … & Hwang. | 2010 | USA | 992 | 19–21 | L | 3 years | NC | Youth | Chi-squared, logistic regressions | Em/Ed | R |
| Garcia, Pecora, Harachi, & Aisenberg. | 2012 | USA | 1087 | 28–31 | C | NC | 48.50% | Youth | Chi-squared, logistic regressions | Em/Ed | PS/Me/G |
| Jones. | 2012 | USA | 97 | 18–21 | C | NC | 59.80% | Youth | Correlations, linear regressions | Ed | G |
| Kroner & Mares. | 2009 | USA | 455 | 16–20 | C | 5 years | 56% | Case records | t-tests, chi-squared, ANOVAS | Em/Ed | R/G |
| Leathers & Testa. | 2006 | USA | 416 | 17–19 | C | NC | 55% | Caseworkers | t-tests, chi-squared, ANOVAS, logistic regression | Em/Ed | R/G/E |
| Munson & McMillen. | 2009 | USA | 339 | 18.04 | C | 2 years | 67% | Youth | t-tests, chi-squared, ANOVAS, linear regressions | Em | R/Me/G |
| Okpych & Courtney. | 2014 | USA | 564 | 25–26 (wave 5) | L | 9 years | 58.5% | Youth | F-test, logistic regression, tobit regression. | Em | PS/R/G/E |
| Pecora, Williams, Kessler, Hiripi, O'Brien, Emerson, … & Torres. | 2006 | USA | 1087 | 30.5 | C | NC | 54.60% | Case records | Logistic regression | Ed | PS/R/G/Ma |
| Sala Roca, García, Biarnés, & Rodríguez. | 2009 | Spain | 143 | 20–23 | C | NC | 53% | Caseworkers | t-tests, chi-squared, discriminant analysis | Em | G/E |
| Scannapieco, Smith, & Blakeney-Strong. | 2015 | USA | 329 | 16–25 | C | NC | 58.40% | Case records | t-tests and linear regressions | Em/Ed | PS/R/Ma |
| Stewart, Kum, Barth, & Duncan. | 2014 | USA | 3301 | 18 (wave 1) 24 or 30 (wave 2) | L | NC | 58.1% | Case records | Least squares regressions, logistic regression; Cox hazards model | Em | PS/R/G |
| Vinnerljung & Sallnäs. | 2008 | Sweden | 718 | 28–32 | C | NC | 48.46% | Case records | Logistic Regressions | Ed | PS/G/Ma |

*Note.* C = Cross-sectional; L = Longitudinal; Ed = Education; Em = Employment; E = Education; PS = Placement Stability; G = Gender; Me = Mentoring; Ma = Maltreatment; R = Race.

[a] Information about the type of analysis is not reported.

**Table 2**
Meta-analyses on employment outcomes for care leavers.

| | *k* (samples) | *N* | OR (95% *CI*) | *p* | *Q* (*p*) | $I^2$ | Kendall's τ (*z*, *p*) |
|---|---|---|---|---|---|---|---|
| Employment × Plac. Stability | 5 (7) | 5321 | 1.10 (0.99, 1.22) | 0.090 | 10.03 (0.12) | 40.183 | 0.28 ($z = 0.90$, $p = .37$) |
| Employment × Race | 8 (13) | 8043 | 1.28 (0.94, 1.74) | 0.112 | 51.64 (0.00) | 78.70 | 0.14 ($z = 0.62$, $p = .54$) |
| Employment × Mentor | 3 (3) | 1454 | 1.00 (0.80, 1.24) | 0.983 | 1.85 (0.40) | 0.00 | −0.33 ($z = 0.00$, $p = 1.00$) |
| Employment × Gender | 7 (11) | 7597 | 1.28 (1.08, 1.52) | 0.004 | 21.84 (0.02) | 54.20 | −0.07 ($z = 0.31$, $p = .76$) |
| Employment × Education | 4 (4) | 3158 | 1.83 (1.19, 2.81) | 0.006 | 9.02 (0.03) | 66.73 | 0.00 ($z = 0.00$, $p = 1.00$) |

log standard errors, chi square and rates to compute the effect sizes. If studies reported that there was no significant effect, the effect size for this study was fixed at $p = 1.00$ (Li et al., 2017). The analyses were done using a random-effects model, which means we assumed that the effect sizes were not the same across studies. According to Borenstein et al. (2009), this model is more appropriate for meta-analyses based on literature review than a fixed effect model.

We tested the homogeneity of effect sizes using the *Q* test. When the *Q* test is significant, true heterogeneity between the effect sizes of the studies can be assumed. The $I^2$ is the percentage of total variability in a set of effect sizes due to true heterogeneity (Huedo-Medina, Sánchez-Meca, Marín-Martínez, & Botella, 2006).

### 2.4. Publication bias

Publication bias is an important thing to consider when conducting a meta-analysis. According to Walker et al. (2008) the risk of excluding studies with non-significant or negative results because they are not published, is one of the critical issues in a meta-analysis design. To identify the risk of publication bias we used Duvall-Tweedie's trim-and-fill procedure, and Kendall's τ method. In the 'trim and fill' method the effect sizes of the studies are plotted against the sample size or standard error in what is called a 'funnel plot'. If the plot is shaped like a funnel no publication bias is present. However, the plot can also be asymmetric in the occurrence of, for example, non-published articles. With the trim and fill method, effect sizes are repeatedly imputed until the error distribution closely approximates normality (Duvall & Tweedie, 2000). We also used Kendall's τ method that represents the association between the standardized effect sizes and the variance of this effect sizes. A nonsignificant Kendall's τ suggest the absence of publication bias, and a significant Kendall's τ indicates that small studies with non-significant results tend not to be published (Rothstein, Sutton, & Borenstein, 2006).

## 3. Results

Ten meta-analyses have been carried out: five on education outcomes and five on employment outcomes. We examined the relation between employment outcomes (having a job or not) and five variables: placement stability, race, mentoring, gender and education. For education (having a high-school degree or not), we examined the relation with the following five variables: placement stability, race, mentoring, gender and maltreatment. Descriptive information for the studies that have been included in the meta-analyses is given in Table 1 (e.g., characteristics of the individual studies and samples, such as range and mean of sample sizes, age and gender distribution, country, etc.).

The findings of the meta-analyses are presented on the basis of a table and forest plot, which give an overview of findings. In the tables, the *k* indicates the number of studies eligible for inclusion in the meta-analysis, the # studies indicates the different sub-samples included in the studies (e.g., different states, boys and girls), and the *N* characterizes the number of foster children that were included in each meta-analysis. The results are represented by OR and its corresponding confidence intervals (*CI*) and the *p* value. Furthermore, the *Q* statistic, $I^2$ and Kendall's τ are reported. In the forest plots, a graphic representation of the effect sizes of the included studies is given as well as the overall effect size.

### 3.1. Descriptive analysis and meta-analyses on employment outcomes for care leavers

We found 12 studies (Table 1) on employment outcomes for care leavers ($N = 9392$). All studies were published in peer-reviewed journals with JCR impact factor. Ten studies were performed in USA, one in the UK and one in Spain. All studies made use of only one informant, although the type of informant differed: seven youth reports, three case records and two caseworkers or staff reports. The sample sizes of the studies ranged from 106 (Dixon, 2007) to 3593 (Stewart, Kum, Barth, & Duncan, 2014). The age of the youth ranged from 16 to 31 years old. Studies that included young people under 18 either had a longitudinal design (following participants before and after discharge) or had mixed samples of youth who aged out and youth still in a transitioning process.

The characteristics and results for the meta-analyses on employment outcomes for care leavers are displayed in Table 2. Two of the five meta-analyses were statistically significant (forest plots provided in Fig. 2). Gender and education appeared to be related with the employment outcomes of young care leavers. Being a girl and having a high school diploma are related to higher odds of employment. However, the meta-analyses for placement stability, race, and mentoring were not significant. This means that the employment outcomes of the youth out of care do not differ with respect to placement stability, race and mentoring.

Kendall's τ suggested the absence of publication bias for each meta-analysis on employment (Table 2). For the meta-analyses on placement stability, mentoring and education the Duvall and Tweedie's trim-and-fill procedure suggested that the analyzed studies yielded an unbiased estimate that was the same as the observed effect size. For the meta-analyses on race, the Duvall and Tweedie's trim-and-fill procedure suggested that an imputation of one study to the right of the mean would shift the observed point estimate to 1.32 (95% CI: [0.98, 0.18]) which is still not significant. For the meta-analysis on gender, three studies to the right of the mean would shift the observed point estimate to 1.34 (95% CI: [0.18, 1.56), which is still not significant.

### 3.2. Descriptive analysis and meta-analyses on education outcomes for care leavers

We found 12 studies (Table 1) about education outcomes for youth out of care ($N = 6781$). All studies were published in peer-reviewed journals with JCR impact factor. Eleven studies were performed in USA and one in Sweden. Almost all studies made use of only one informant: six youth reports, four case records and one caseworkers or staff reports. One study made use of two informants: the young participant and a foster parent (Berzin, 2008). The sample sizes between studies ranged from 96 (Collins et al., 2010) to 1087 (Garcia et al., 2012; Pecora et al., 2006). The age of the youth ranged from 16 to 31 years old.

The characteristics and results for the meta-analyses on education outcomes for youth leaving care are displayed in Table 3. The forest plots are provided in Fig. 3. The meta-analysis on placement stability appeared to be statistically significant.. Placement stability is linked with a high probability of having a high-school diploma for the care

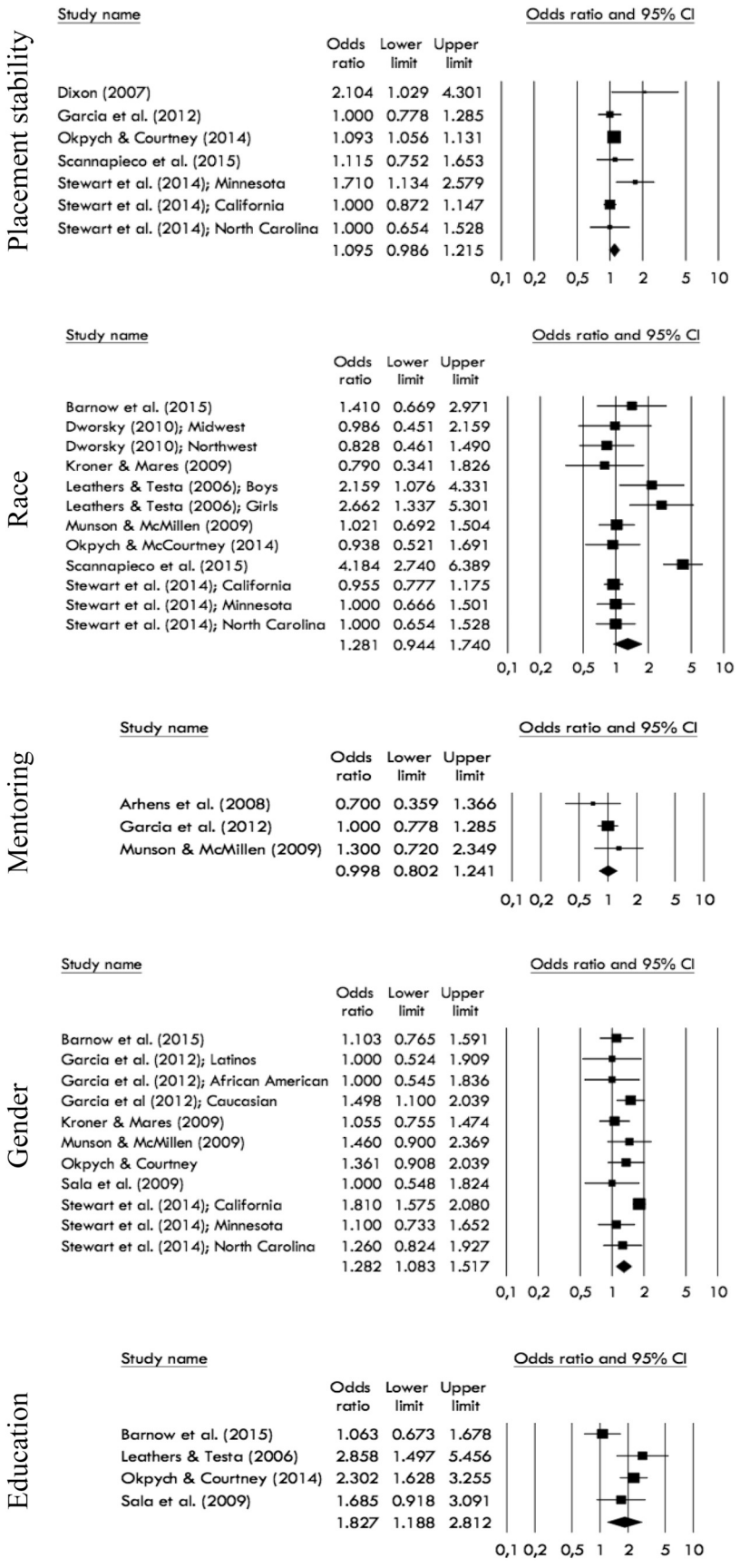


**Fig. 2.** Forest plots for the meta-analyses on employment outcomes for care leavers.

**Table 3**
Meta-analyses on education outcomes for care leavers.

| | *k* (samples) | *N* | OR (95% *CI*) | *p* | *Q* (*p*) | $I^2$ | Kendall's τ (*z*, *p*) |
|---|---|---|---|---|---|---|---|
| Education x Placement Stability | 4 (6) | 2939 | 1.83 (1.34, 2.50) | 0.000 | 29.61 (0.00) | 0.00 | −0.13 ($z = 0.38$, $p = .71$) |
| Education x Race | 7 (9) | 4243 | 1.14 (0.99, 1.31) | 0.070 | 8.62 (0.38) | 7.17 | 0.53 ($z = 1.98$, $p = .05$) |
| Education x Mentoring | 3 (5) | 1211 | 1.36 (0.91, 2.04) | 0.139 | 4.80 (0.31) | 16.67 | 0.00 ($z = 0.00$, $p = 1.00$) |
| Education x Gender | 8 (10) | 4772 | 1.14 (0.95, 1.36) | 0.152 | 17.89 (0.04) | 49.69 | 0.13 ($z = 0.54$, $p = .59$) |
| Education x Maltreatment | 3 (3) | 2134 | 0.95 (0.82, 1.10) | 0.479 | 1.39 (0.50) | 0.00 | 0.67 ($z = 1.04$, $p = .30$) |

leavers. The results also point out the nonexistence of significant differences between the educational level of youth transitioning out of care considering the race and gender of young people. Also, education outcomes of youth leaving care do not differ with respect to mentoring and maltreatment.

Regarding publication bias, Kendall's τ suggested the absence of publication bias for each meta-analysis on education (Table 3). For the meta-analyses on placement stability and maltreatment the Duvall and Tweedie's trim-and-fill procedure suggested that the analyzed studies yielded an unbiased estimate that was the same as the observed effect size. For the meta-analyses on race, the Duvall and Tweedie's trim-and-fill procedure suggested that an imputation of three studies to the left of the mean would shift the observed point estimate to 1.04 (95% CI: [0.87, 1.25]) which is still not significant. For the meta-analysis on mentoring, one study to the right of the mean would shift the observed point estimate to 1.41 (95% CI: [0.95, 2.10), which is still not significant. And for the meta-analysis on gender, one study to the right of the mean would shift the observed point estimate to 1.16 (95% CI: [0.98, 1.38), which is still not significant.

## 4. Discussion

One might think that several life factors contribute to, or impede, the social inclusion of young people leaving care, and if we review the various studies mentioned in the introduction and beyond, this is in fact true. However, based on the meta-analysis and focusing on the education and career pathways of these young people, some factors were significant, while others were not: (i) Having placement stability was related to higher odds of having a high school diploma, but race, gender, mentoring and maltreatment had no significant association with education pathways for young people leaving care; and (ii) Gender (being a girl) and education (having a high-school diploma) were two variables related to higher probabilities of having a job.

On analyzing the results, these two outcomes are seen to be closely linked, since the likelihood of finding employment is associated with level of education. Extensive literature points to this link and, in the case of children in out-of-home care, studies from two decades ago (Jackson & Martin, 1998) already indicated that the education of children in care could make a difference to them when they become adults. According to these studies, the odds of unemployment among young people leaving care with lower levels of education was significantly higher than among care leavers with secondary or higher education.

At this point, the question we should ask ourselves is: if the crucial importance of education is known and corroborated by studies such as this meta-analysis, where does the problem of achieving substantial improvements in care leavers' education actually lie? Results from our meta-analysis point to one answer: stability in children's life experiences. Changes in adult caregivers, home, neighborhood, school and friends have a huge impact on the well-being of children and young people in general (Montserrat, Dinisman, Baltatescu, Grigoras, & Casas, 2015), and children who are victims of abuse or in care are more likely to lead unstable lives (James et al., 2004) with negative consequences for their futures (Barth & Jonson-Reid, 2000; Humphreys et al., 2017; Pecora et al., 2005). They may also frequently experience changes while living with their birth families. Entering the care system is in itself another change. Once in the system they may have family or residential placement changes which often involve changing schools (Conger & Finkelstein, 2003; Montserrat & Casas, 2014). Finally, leaving the child protection system implies yet another change. How can a child follow a successful schooling path in this context?

In contrast, when early detection has worked and case evaluation, focused not just on urgent and immediate measures, has enabled a stability plan to be established for children, they can stay at the same school with the same friends and practice the same leisure activities. Thinking of a stability plan implies a child-centered approach. It prevents changing intervention plans whenever a new incident occurs within the birth family or out-of-home placement, while perseverance and perspective are upheld.

The other factor that has an influence on employability is being a woman, which, according to the results, facilitates finding a job. This can be seen as positive or negative, depending on which side of the coin we are looking at. The type of job and the precariousness it may entail should be taken into account. In the case of precarious, unskilled work, it is clear that the gender factor does not have an influence on education, but in contrast, it does affect employment. On the one hand, finding a job depends on level of education but, on the other hand, on being a woman, obtaining unskilled, female-dominated jobs, such as cleaning and the care of dependent persons.

Not only should the (so far) statistically significant results be discussed, but also the factors considered in the meta-analysis that did not reach significance, such as mentoring and maltreatment. With regard to the former, the importance of mentoring in the transition of these young people to adulthood is not in doubt, as reflected in studies by Greeson et al. (2010), Munson and McMillen (2009) and Osterling and Hines (2006). However, a stable relationship with a caring adult might be necessary for mentoring to be effective. This means that the stability factor could come into play again, at least as far as adult role models are concerned. It is also important to enhance that meta-analysis on mentoring and maltreatment consisted of three studies, which means that we should be cautious in interpreting the results.

The second factor, the effects of maltreatment, may diminish with the passing of time. In this study, we analyzed youth leaving the care system, so abuse and neglect may have occurred a long time ago. If we had analyzed young people entering the system, it would have been different, since children entering care are often suffering from post-traumatic stress disorder. On the other hand, it should be underlined that not all children in care have suffered child maltreatment (Brown & Bailey-Etta, 2018; Hill, 2017; Nadan, Spilsbury, & Korbin, 2015). Finally, their stay in out-of-home-care may have served to protect and compensate them, fostering their resilience and leading them to experience protective factors during their development that have moderated the effects of adversity (Masten, 2001), facilitated by a suitably stable environment.

### 4.1. Limitations

Some limitations must be kept in mind when interpreting the results of the current study. The first one refers to the fact that no distinction could be made between types of placement (foster care, kinship care, residential care, group homes, etc.) related to outcomes, because this distinction was not made by the individual studies included in the meta-

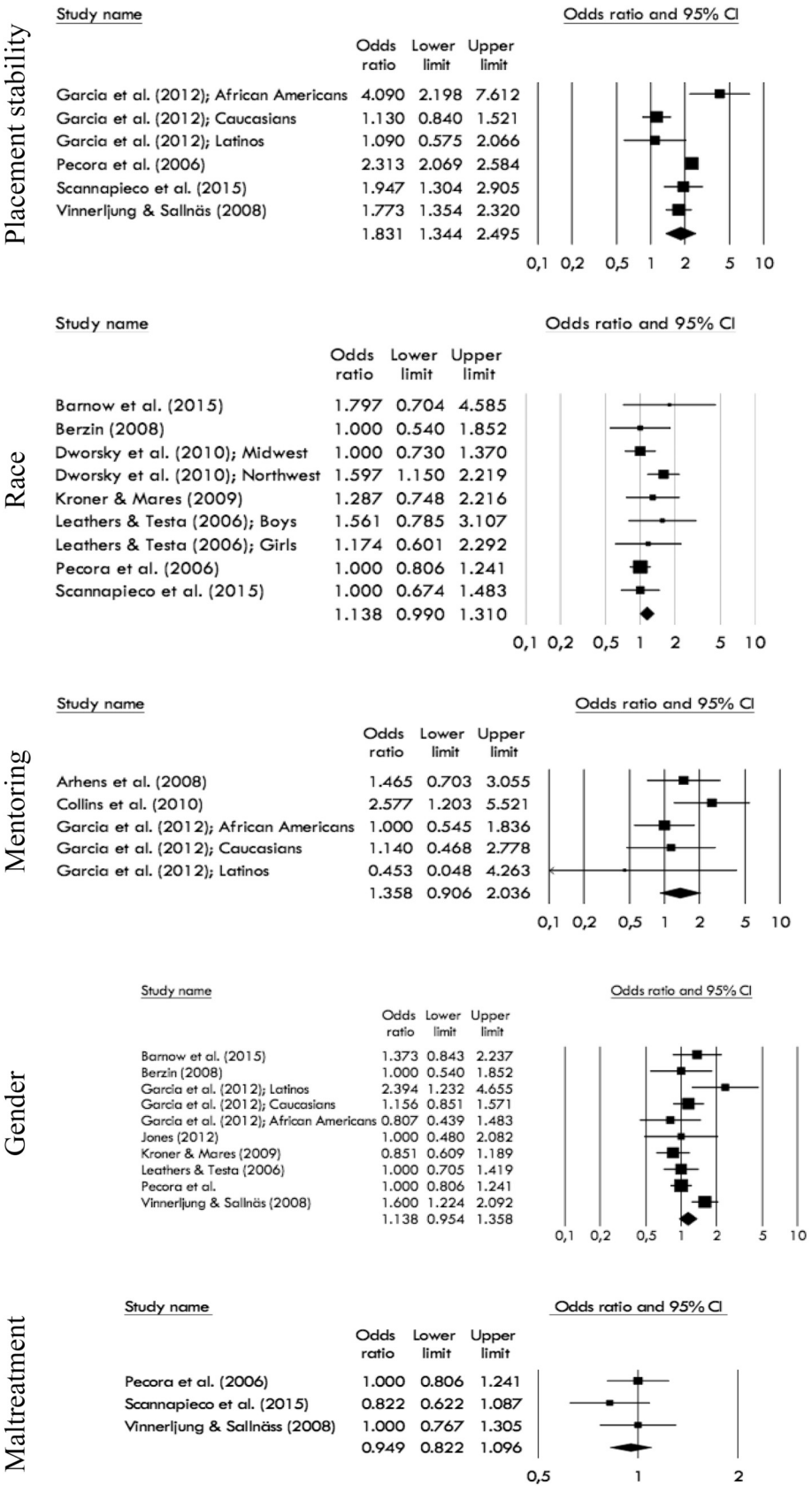


**Fig. 3.** Forest plots for the meta-analyses on education outcomes for care leavers.

analyses. Recent studies have proved that placement type can influence in how children do (Barth, 2002; Li et al., 2017; Van IJzendoorn et al., 2015; Winokur, Holtan, & Batchelder, 2018) and, by consequence, in the trajectories of those different subgroups. Including different types of placement in the same meta-analysis was a decision based on the fact that most publications on young people leaving care are from countries

where foster care is the most common type of placement, which can prevent researchers and practitioners from different realities to benefit from its results. The second limitation is due to the fact that few publications came from middle and low-income economies where research in welfare system is rarely conducted using large and probabilistic samples. A bias is visible with regard to where studies were conducted, with 82% of the studies coming from the USA. Lastly, a more general limitation was the small number of studies that could be included. Although the studies included provided a clear overview, the relatively small number of studies prevented us from conducting moderator analyses. It would for example have been interesting to study whether the design of the study (i.e., cross-sectional or longitudinal) had an effect on the relations between our variables of interest and the work or employment outcome. Furthermore, although we did not limit our search to recent studies, all studies included in this meta-analysis were relatively recent (2006–2015). Studying the outcomes of children in care gets increasing attention, so it would be interesting to redo a meta-analysis in a few years with a larger number of studies.

## 5. Conclusion

This meta-analysis suggests that gender (being a girl) and educational level (having a high school diploma) have a significant relation with employment outcomes and that placement stability relates significantly to educational outcomes. On the other hand, this study shows that there were no significant overall effects of race, type of maltreatment, and having a mentor in educational and employment outcomes. These results point to the need of constantly investing in education and stability plans based on child-centered approaches, in order to facilitate the achievement of positive educational and employment outcomes. With respect to mentoring programs, even though results did not show significant influence of having a mentor in future outcomes, it seems that the crucial aspect also lies on the stability, which is something that usually offered by this type of relationship.

Robust research on factors influencing the trajectories of young people leaving care is very limited especially in low and middle income economies. For the future of youth transitioning out of care it is extremely necessary that more effective studies into this subject will be conducted, using larger samples and with sufficient power to be able to draw valid conclusions for different contexts and realities.

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