Does family reunification from residential care facilities serve children's best interest? A propensity-score matching approach in Ghana

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ABSTRACT

The U.N. Convention on the Rights of the Child declares that children are entitled to grow up in a family environment with love, happiness and understanding. Governments and international child welfare agencies have promoted the reintegration of children currently in residential care facilities with family or other care-givers. We assess whether 157 children who spent time in a Ghanaian residential care facility but who have been reunified with their families scored differently on a battery of standardized child wellbeing measures than 204 children still living in residential care facilities using propensity score matching models. Results suggest that outcomes, including overall hope (as well as hope pathways and hope agency) and access to basic resources as measured on the Child Status Index, differ between children who were and were not reunified. These results underline the importance of supporting children's physical and psychosocial developmental needs. Children who were reunified with family members or other kin may require additional support regarding access to basic resources whereas interventions designed to increase hope in the future may benefit children in residential care. We urge a redoubling of efforts to care for children under carefully designed national schemes providing resources, trained personnel, and sustained case management.

1. Introduction

In its seminal call to action, the United Nations Convention on the Rights of the Child (UNCRC) declared that every child, "for the full and harmonious development of his or her personality, should grow up in a family environment, in an atmosphere of happiness, love, and understanding" (United Nations, 1989, p. 1). Twenty years after the adoption of the CRC, the United Nations General Assembly adopted the Guidelines for the Alternative Care of Children ("the Guidelines") (United Nations, 2010), to provide a framework for caring for children without parental care. The Guidelines reinforce children's right to family and discourages institutional settings whenever possible. These international norms are based on a body of research suggesting that family-based care is superior to care in large residential facilities in terms of children's physical, social, cognitive, and emotional outcomes (Csáky, 2009; Zeanah, Smyke, Koga, & Carlson, 2005).

While these international norms have catapulted a global shift toward family-based care, complex interplays between economics, migration patterns, parental deaths, educational challenges for children, and others, have posed formidable barriers to realizing the vision. When adequate parental care is not available, alternative (non-parental) care options in family settings such as foster care and domestic and international adoption are difficult to realize in the current political, cultural and economic contexts, especially in developing countries (Chipungu & Bent-Goodley, 2004; Roby, Rotabi, & Bunkers, 2013; Stuckenbruck & Roby, 2017). Residential care facilities (aka 'orphanages') have thus proliferated rapidly, antithetical to the global policy trend (Lumos, 2017). Worldwide, an estimated two to eight million children reside in institutional care settings and this number may be far higher due to difficulties registering and accounting for residential care facilities (RCFs) (Lumos, 2017; Petrowski, Cappa, & Gross, 2017).

Most recently, reintegration, defined as "the process of a separated child making what is anticipated to be a permanent transition back to his or her family and community (usually of origin), in order to receive protection and care and to find a sense of belonging and purpose in all spheres of life" (Inter-Agency Group on Children's Reintegration, 2016, p. 1), has emerged as a low-cost solution for children living in RCFs (Csáky, 2009). Reintegration efforts have been documented in several

countries, and the trend is poised for rapid escalation.

But is there evidence that reintegration from RCFs in fact serves the best interest of the child? Are children merely being sent back to the very contexts that resulted in their placement in the RCF in the first place? How, specifically, does reintegration advantage or disadvantage these children over institutional care? Current evidence related to this question is sparse but informative. The Bucharest Early Intervention studies showed convincingly that very young children living in situations of extreme neglect in institutions experienced dramatically worse outcomes when compared to children sent to trained foster homes. In the current context, however, such extremes on either end (entirely neglectful institutions or highly trained foster homes) are only rarely encountered and many children currently in RCFs are older than the Romanian children. Nsabimana (2016), compared school-aged children in Rwanda and found institutionalization to be largely negative, especially for children with living parents, (2016, p. viii), although the study was limited solely to psychological dimensions.

In order to gain a deeper understanding of comparative child wellbeing in both settings, we assessed child wellbeing with school-aged children and youth (8–19 years of age), employing data collected from 204 RCF children and 157 reunified children from across Ghana. We utilized instruments that have been standardized and validated in Africa, such as the Child Status Index (CSI), the Strength and Difficulties Questionnaire (SDQ), the Children's Hope Scale (CHS), and a structured survey instrument to assess access to basic resources. We then employ propensity score matching, a methodological approach that permits us to mimic, although not perfectly replicate, a randomized control trial where an exact controlled trial is not feasible. Hence, this study represents one of the most systematic efforts to-date to measure multiple dimensions of child wellbeing for reunified children versus children remaining in residential care centers. Throughout this article, we use 'reunified' and 'reintegrated' somewhat interchangeably; the former denotes physical placement of the child with family where the latter denotes a longer-term process. We generally use 'reunified' for the children who have been returned home because we did not measure the level of long term reintegration for each child; however, we did not include any children who had been reunified for less than six months to reduce the impact of a possible 'honeymoon' period.

2. Conceptual framework

Our conceptual framework is anchored on notions of children's rights and the concomitant international norms. We take as our starting point that children have rights to basic needs such as health, safety, education, nutrition and care for their survival and development (United Nations, 1989, Art. 3, 6, 18, 23, 24). These needs can most ideally be met in a family environment for children's optimum development, making growing up in such an environment another key right (United Nations, 1989 Art. 20). However, poverty and accompanying issues around resources, delivery infrastructure, and political priorities, along with the AIDS epidemic, can divert attention away from fragile families in nations without a social safety net (Better Care Network, and UNICEF, 2015), resulting in the lack of adequate nutrition, shelter, health care, and education. Residential care provides a 'default' care system (Meintjes, Moses, Berry, & Mampane, 2007) rather than an emergency measure. Consequently, millions of children are in institutions (Csáky, 2009) although 80–90% of them have a family member with whom they could reunite (Williamson & Greenberg, 2010).

While children's access to basic needs must be met, experts have argued that family-based care is also an essential aspect of wellbeing and development. This right to safe and nurturing family-based care is built largely on theories of attachment. At its core, attachment theory advocates for the primacy of interpersonal relationships in child

development (Ainsworth & Bell, 1970; Bowly, 1982; Bretherton, 1992). The relational attachments children develop with their primary care-givers (often the mother) are thought to enable or hinder a child's social, cultural, cognitive, and educational development. This theory is well supported by a long line of research across disciplines such as medicine, neuroscience, molecular biology, epigenetics, and the social and behavioral sciences, now firmly establishing the persistent impact of attachment on the positive development of children (Dykas & Cassidy, 2011; National Scientific Council on the Developing Child, 2012; Sroufe, 2005). Perhaps the best known, the Bucharest Early Intervention study found that nearly all children living with their families experienced fully developed attachments, compared to just 3% of children in RCFs (Nelson, Furtado, Fox, & Zeanah, 2009). Attesting to the power of attachment, for every three months spent in a RCF, a child is believed to lose an estimated one month of development (van IJzendoorn, Luijk, & Juffer, 2008). We note, however, that this compares the two extremes in placement settings: trained foster homes and large institutions with low staff to child ratios.

Given these two bundles of rights and intertwined developmental needs, the question is whether reunification from residential care is in the best interest of children, taking into account multiple dimensions of wellbeing. To date, reintegration studies have focused mostly on children transitioning back from being recruited as child soldiers (Betancourt, Brennan, Rubin-Smith, Fitzmaurice, & Gilman, 2010; Eleke, 2006), having lived on the streets (Harris, Johnson, Young, & Edwards, 2011; Smith & Wakia, 2012) or juvenile detention (Wernham, 2004) and/or having been exploited in the sex market (Asquith & Turner, 2008; Reimer, Langeler, Sophea, & Montha, 2007). In fact, a comprehensive review (Wedge, 2013) of reintegration efforts in low and lower-middle income countries concluded that no studies focused on children returning from residential care settings had been found. Since then, a doctoral dissertation (Nsabimana, 2016; *n* = 177) has focused on the psychological impact of institutionalization and deinstitutionalization (reunification), against never institutionalized reference group in Rwanda where the government has pursued an aggressive course of deinstitutionalization (Weiss, 2015). Our study is an effort to better understand the wide-ranging advantages and limitations of both settings, in hopes of contributing to improving policy, programming and research.

3. The momentum behind reintegration

3.1. Research evidence

As suggested earlier, the current literature is dichotomized along the question of whether children fare better in family-based care or in residential care facilities, rather than focusing on reunification vs. remaining in RCFs. A well-established strain of research, mostly based on samples from developed countries, in the social and behavioral sciences holds that care given by an intact family will, on average, produce the most optimal outcomes for children (Amato, 2010; McLanahan & Sanderfur, 1994; McLanahan, Tach, & Schneider, 2013). Many studies have shown that children living in families fare better on a range of outcomes than children living in an orphanage or similar living situations (Johnson, Browne, & Hamilton-Giachritsis, 2006; Kang'ethe & Makuyana, 2014; Merz, McCall, & Groza, 2013). Early psychosocial neglect may alter children's brain patterns (Stamoulis, Vanderwert, Zeanah, Fox, & Nelson, 2015), compromise memory and recall abilities (Bos, Fox, Zeanah, Nelson Iii, & Nelson, 2009), and produce elevated risk of psychological and emotional problems (National Scientific Council on the Developing Child, 2012).

Other research has suggested that children in RCFs may not be at such a disadvantage compared to their non-institutionalized

counterparts, at least for certain outcomes. Several studies from eastern Africa found no differences in intelligence scores between children in RCFs and non-institutionalized children (Aboud, Samuel, Hadera, & Addus, 1991; Johnson & Dole, 1999; Wolff & Fesseha, 1999, 2005). In China, children in RCFs actually reported better psychosocial status than those in family-based care (Hong et al., 2011), while in Kenya those in RCFs reported better nutritional status and better access to basic resources than those in family-based care (Braitstein et al., 2013). In Cambodia, Ethiopia, Kenya, India, and Tanzania, those in RCFs fared as well or better on physical health and emotional wellbeing when compared to those living with their families (Whetten et al., 2014). Yendork and Somhlaba (2015) found that Ghanaian children and youth in RCFs demonstrated similar results on self-efficacy and resilience, although perceptions of family support were higher among those living with families.

These conflicting results have had something of a polarizing effect in the international child welfare community. Some governments have announced an aggressive schedule of deinstitutionalization, sometimes without a concrete plan to provide support for the transition. In the case of Rwanda, the government has partnered with Hope and Homes for Children, an international NGO, to reintegrate most of the children formerly in RCFs (Weiss, 2015). Others have urged further exploring the different aspects of care received by children in *any* setting, rather than falling into the family/institution dichotomy, cautioning against closure of RCFs without further study (Whetten et al., 2014). Whetten et al. (ibid) argue further that in the absence of substantial efforts to improve the family settings to which children return, widespread deinstitutionalization may in fact exacerbate the disadvantages that these vulnerable children face by moving them from an environment where basic needs are relatively well met to one where deprivation is more prevalent. A coalition of leading international NGOs recognized that high-quality residential care is difficult to achieve, but that reintegrating children from these environments must be accompanied by the provision of resources and services, as well as post-reunification monitoring (Inter-Agency Group on Children's Reintegration, 2016). These findings, while underscoring the importance of investing in improvements and support for family settings, have not compared differential outcomes between reintegrated children and their peers who remain in RCFs.

3.2. The Ghanaian context

In Ghana, where the data used for this study are drawn, evidence showed that children were sent to RCFs by family members or government social workers after others were unwilling or unable to care for them due to HIV/AIDS, family breakdown, parental death, cultural stigma or mental/physical illnesses (Cimpric, 2010; Matshalaga & Powell, 2002; Meintjes et al., 2007). As of 2013 (the latest year for which data were available), there were 114 known and operating RCFs of which < 10% were fully licensed by the government, caring for 4432 children (Better Care Network & UNICEF, 2015b). This constitutes an eleven-fold increase in the number of RCFs operating in the country since 1996, when there were only ten (Csáky, 2009). Castillo, Sarver, Bettmann, Mortensen, and Akuoko (2012) documented that most caregivers in Ghanaian RCFs were underpaid and overworked shift workers and children lacked primary caregivers, while an estimated 80% of the 4432 children in RCFs have families that could raise them with external support (Better Care Network & UNICEF, 2015; Castillo et al., 2012; Ghana News Agency, 2013).

In 2006 and again in 2010, the government vowed to close 90% of children's homes in the country, citing overcrowding and inadequate stimulation; compromised ethnic and religious identities; the high cost of RCFs; unavailability of stable attachment figures; and the potential

for abuse, neglect, and exploitation (Frimpong-Manso, 2014; Ministry of Employment and Social Welfare & UNICEF, 2010). Further, concerns of corruption and financial misuse by facility administrators (Colburn, 2010), exploitation of volunteers and visitors (Pyper, 2010), and children's exposure to sexual violence and trafficking (Bilson, 2009) fueled the Care Reform Initiative (Ministry of Gender, Child, and Social Protection, 2014). Closing 90% of children's homes requires more than simply sending children home. Although the Ghanaian government seeks to strengthen family capacity by providing reunified children's caregivers access to the Livelihood Empowerment Against Poverty (LEAP) program, the Education Capitation Grant, the School Feeding Programme, and National Health Insurance (Frimpong-Manso, 2014), anecdotal data suggest that implementation is spotty at best. This is likely to be a barrier to reunification as thousands of children remain in children's homes while significantly fewer but unknown numbers have been reunified.

4. Contributions of present study

Despite the international push for reintegration, much of the emerging evidence on reintegration effectiveness has focused on the process of reintegration rather than child outcomes (Dziro & Rufurwokuda, 2013; Smith, 2014). As previously discussed, when studies have focused on the influence of RCFs on child outcomes, they have often compared children in RCFs to children living with their families (e.g. Whetten et al., 2014), leaving unclear the influence of unobserved differences in who enters RCFs and who remains in family-based care. Even when studies have explicitly compared reunified children with those still living in RCFs, statistical analyses were not rigorous and merely compared unadjusted means across groups. As a result, ambiguity abounds about the impact of reintegration itself.

This study begins to fill this gap by employing a unique dataset collected in 2014–2016 of 361 Ghanaian children whom have spent time in a Ghanaian RCF, 157 of whom had been reunified with their families or other permanent caregivers. Thus, this study is among the first to test the influence of RCFs on child development, since all children have spent time in a care facility (we also control for the amount of time spent in the RCF)—any differences we observe cannot be due to differential selection into orphanages. In so doing, we directly examine statistical differences between children currently in RCFs with those who have been reunified into their families and communities across children's physical, psychosocial, and other needs.

5. Methods

5.1. Sample

Data for the analyses were collected from 2014 to 2016 in partnership with the non-governmental organization Kreme (http://kaeme.org). Lists of children who had been reunified for at least six months were provided by RCF directors, and access to children remaining in RCFs was provided at selected RCFs with the help of government officials. Our final sample consisted of 204 RCF children and 157 reunified children ($n = 361$).

The authors' Institutional Review Board approved all instruments and procedures. Further permission was provided by relevant Ghanaian authorities. Consent for interviews, conducted in Englih or Twii depending on child's preference, were obtained from the government and the head of the RCF and/or children's parents/guardians. RCF and reunified children were interviewed within eyesight but out of hearing distance from their adult caregiver to ensure privacy to express genuine thoughts and feelings. The child's assent was obtained prior to the interview through verbal request to conduct the interview and then

explaining their right to refuse to answer any question(s) or stop the interview at any time without repercussion. A trained team of government/Kaeme social workers and Ghanaian/American university students, under the supervision of a social work professor from the same university, interviewed children at a variety of residential care facilities in the Ashanti region. Further interviews were conducted over the next year by both Kaeme social workers and Ghanaian government officials with RCF children living in the Brong-Ahafo and Volta regions.

We used a similar process for reunified children interviews. We first obtained a governmental approval letter and then contacted directors[1] of every RCF we could locate, requesting lists of reunified children who had returned at least six months prior. American and Ghanaian college students were then paired and trained, primarily by local team members, in interviewing techniques, culturally-sensitive practices, and survey methods. Each pair then interviewed a number of reunified children in the child's place of residence. A local social worker was hired to locate and interview reunified children over the next two years. Interviews were carried out in all regions of Ghana except the Upper East region.[2] Participating children and their families were compensated with a basket of food stuffs, including rice and cooking oil, as is typically expected with community-based research in Africa.

5.2. Measures

We conceptualize child wellbeing as a multidimensional construct encompassing measures of children's social, emotional, and physical wellbeing, in addition to measures of their access to basic goods, services, and resources. To do this, we employ several scales of child wellbeing, including the Child Status Index (O'Donnell, Nyangara, Murphy, Cannon, & Nyberg, 2013) and the Strength and Difficulties Questionnaire (Goodman, 1997; Goodman, Lamping, & Ploubidis, 2010; Goodman & Scott, 1999) that have gained international acceptance as developmental indicators (Chapman, Foreit, & Parker, 2015) of child wellbeing and to have high reliability and validity (Deighton et al., 2014; O'Donnell et al., 2013). Additionally, in light of the critical importance of children's future orientation, we employ the Hope Scale (Snyder et al., 1996). To further round out our holistic approach to child wellbeing, we also measure social attachment as a way to tap into the extensiveness of children's extant social networks to assess the availability of attachment figures to fulfill attachment needs (Seibert & Kerns, 2009). Finally, we also examine whether children have access to basic resources, including access to a piped water source, a flush toilet, the number of people who sleep per room in their residence, and the number of household goods to which they have access.

Together, these measures provide a holistic and multidimensional perspective on children's rights that incorporates internationally-established benchmarks of child wellbeing, access to basic resources and additional standards tapping children's psychosocial and future-oriented outlook. We examine each of these outcomes because an over-reliance on one set of indicators may provide an incomplete picture of how well the child is faring.

5.3. Dependent variables

The Child Status Index (O'Donnell et al., 2013), consisting of twelve questions that address children's access to food and nutrition, shelter and care, legal and social protection from abuse and exploitation, psychosocial skills, and education, measures children's access to basic needs. Responses include *good*, *fair*, *bad*, or *very bad* and is coded so

higher values indicate higher levels of child wellbeing.

We measured social attachment by assessing availability of attachment figures (Seibert & Kerns, 2009) via a series of questions involving who the children would seek out for help or support in different contexts (when sad, had a secret, etc.). We coded these a 1 if the child reported having someone or 0 otherwise (no answer, reference to deity or self, etc.). The answers were then combined into an additive index totaling the number of responses (out of 14 total) as well as for the subscales of context specific, emotion-eliciting, and general attachment & companionship, following the scale development guidelines outlined in Seibert and Kerns (2009).

The Strengths and Difficulties questionnaire (Goodman, 1997) consists of 24 questions assessing emotional problems, conduct, hyperactivity, peer relations, antisocial behaviors, externalizing behaviors, and internalizing behaviors. Responses include *not true*, *somewhat true*, and *certainly true*. We followed established procedures (Goodman, 1997; Goodman et al., 2010; Goodman & Scott, 1999).

The Children's Hope Scale (Snyder et al., 1996, 1997) assess respondent's hope pathways and hope agency, which together yield an overall level of hope. Hope pathways refer to the routes/strategies individuals use to achieve desired goals. Hope agency refers to the motivation/confidence a person has to pursue the path leading to their desired goals. Responses vary from 1 *none of the time* to 6 *all of the time*.

We assessed access to basic resources with nine questions on whether children had access to an improved water (piped) and toilet (flush) source, the number of sleepers per room, and an index of the number of goods (radio, television, telephone refrigerator, bicycle, motorcycle, car, or cellular phone) in the household.

5.4. Independent variables

Independent variables included respondent's age, gender, and whether the child was a single (one parent deceased) or double (both parents deceased) orphan or whether it was not explicitly mentioned in the interviews. Other controls included time spent in the orphanage (in months), whether school records were available for the child and, if so, the grades the child received, ranging from "*excellent*" to '*very poor*'. We also measured the number of vaccines (out of 8; tuberculosis, polio, measles, tetanus, yellow fever, pentavalent, rotavirus, and pneumonia) the child had received and whether the child had any mental or physical problems/limitations. Additional controls included how sociable the child was (as reported by the parent or primary caregiver) ranging from "*very social*" to "*isolated or timid*", if the child has trouble with authority (1 = *some or a lot*, 0 = *no trouble with authority*), whether the child was hit or caned while in the RCF (1 = *yes*), and the number of siblings in the child's family of origin.

5.5. Analysis

At the heart of most statistical models is the desire to establish the existence of a systematic, perhaps even causal, relationship between two variables: in this case reunification (x) and various measures of child wellbeing (the y's). Ideally, the answer to questions about the effectiveness of reunification programs would come from a randomized control trial where random assignment sends some children into reunification while others remain in the RCF. This clarifies how much unobserved factors (i.e., selection effects) influence observed differences.

However, a randomized control trial is difficult to achieve here because randomly assigning children to reintegrate is logistically difficult, ethically questionable, and prohibitively expensive. Consequently, researchers are often compelled to adopt less convincing methods, such as regression and related tools, to compensate for this inability to properly address causality. However, because the establishment of a causal relationship *requires* random assignment to the treatment, a failure to do so is likely to lead to biased estimates since

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[1] In some instances, directors were very helpful, even escorting us on visits to the reunified children's homes. Other RCF directors proved less amiable. Some claimed they had no record of such children, others said they were too busy, and in some instances the director was unwilling to meet with project staff or even help us locate the RCF itself.

[2] None of the children identified lived in the Upper East region, although there are very likely some reunified children living there.

the treatment group (reunified children) may differ in important ways from the control group (RCF children). On top of this, no comprehensive list of children living in Ghanaian RCFs exists, much less a list of those who have been reunified with their families or other caregivers and locating family members or potential caregivers for some children is problematic. In other instances RCFs are closed by the government, leading to forced reunification efforts, sometimes with less than optimal planning, preparation, and support.

The next best option is to simulate a randomized control trial using a statistical technique called propensity score matching methods (PSMM) (Rosenbaum & Rubin, 1983), which offer one alternative to traditional regression methods. Rooted in the counterfactual framework (Morgan, 2007), propensity models attempt to replicate a randomized control trial using non-experimental data by first estimating the probability a child was reunified, then matching reunified children with children who were not reunified but had similar probabilities of reunification. A variety of methods are available to pair treated individuals to similar non-treated individuals based on each respondent's propensity score and ensure that children in RCFs do not differ significantly from reunified children on any of the given characteristics of interest. This procedure, when estimated successfully, eliminates the need to make assumptions about the distributional properties of the treatment and control groups, at least to the extent that the variables in the propensity score are reasonably correlated with each other and the outcome.

It is worth noting that there is always a possibility of unobserved heterogeneity influencing the results, regardless of the statistical model used. We do not claim to include all possible sources of heterogeneity between RCF and reunified children. However, two factors are noteworthy in deciding whether propensity score matching is ideal for the question at hand. First, unobserved heterogeneity is present in all statistical models, as no model is perfect (ironically making the presence of unobserved variables a constant, rather than a variable, across models). Second, unobserved variables only influence the outcome to the extent that they are not correlated with any of the variables in the model. We believe that the wide range of variables we include in the analysis are likely to be correlated with most of the unobserved (in our study) variables in the research literature, though this is merely a supposition.

Propensity score matching is done by first identifying children who are similar on as many characteristics as possible using a statistical matching algorithm. Second, we predict each child's probability of being reunified, whether they experienced reunification or not. Then, we match children who were not reunified but had similar probabilities of being reunified (based on the characteristics from step two) with children who were. Finally, outcomes between children of similar probability of reunification (whether they actually were or not) are compared, meaning we only compare child wellbeing outcomes among children who look similar and control for as many reasons they might differ as possible. In doing so, we are able to adjust for a wide variety of differences that would otherwise constitute alternative explanations for observed differences between the two groups. Essentially, propensity score matching simulates a randomized control trial where no such trial actually took place.

We use the following binary logistic regression equation to estimate the propensity score:

$$Pr\left(reunification: T_i = 1 \mid X_i\right) = \frac{exp\left(x_i\beta_i\right)}{1 + exp\left(x_i\beta_i\right)}$$

where χ_i is a vector of covariates associated with the probability of reunification as well as potential confounders in the relationship between standardized measures of child wellbeing and reunification, β_i represents the estimated slopes associated with each covariate, and $T_i = 1$ if a given child, i, was reunified.

The propensity score can be thought of as the latent probability of being reunified, regardless of whether a given child actually was or

not.[3] PSMM ensure that the reunified and RCF children are homogenous by testing for significant differences across all levels of observed variables (i.e. we test whether there are differences in time spent in the RCF between reunified and RCF children with high, low, and moderate propensities) to reunify on all key variables.[4] When no such differences are found, the two groups are said to be homogeneous, meeting the ignorable treatment assumption and child reunification can then be regarded as a random event (to the extent that differentiation between reunified and RCF children is a function of the covariates used to estimate the propensity score) (Morgan & Harding, 2006). All analytic samples used in this paper satisfy the requirements of the ignorable treatment assumption.

After creating the matched sample, we estimate the effect of reunification on measures of child wellbeing. Because the treatment of child reunification can be assumed random (given adequate model specification in the propensity score construction), there is no need for traditional control variables; the results therefore represent a more accurate estimate of the true population estimate of the relationship than traditional regression-based models in the population from which the sample was drawn. All analyses are restricted to the region of common support, indicating the region of propensity scores shared by both treated and matched (non-treated) observations. Restricting analyses to the common support region serves two purposes. First, it eliminates outliers and influential cases, muffling noise by reducing (likely) artificial variance. Second, it satisfies the existence condition that all observations have a suitable counterfactual. We employ three matching procedures, described by Becker and Ichino (2002), to estimate the average treatment effect among the treated (ATT): *nearest neighbor*, *kernel*, and *stratification* (see Massoglia, 2008 for an in-depth discussion of each). We present three matching estimators because each one has strengths and weaknesses. *Nearest neighbor*, for example, is likely to be less useful than the other two due to our relatively small sample size (Caliendo & Kopeinig, 2005). Multiple imputation was used to deal with missing data, following the recommendations outlined in Mitra and Reiter (2012).

6. Results

Table 1 presents means and standard deviations for all variables in the analysis, with the independent variables used to estimate the propensity score broken down for reunified and RCF children by each individual outcome. We elected not to present such numbers for the dependent variables on the advice of a reviewer, who pointed out that doing so may imply that readers should compare outcomes for the unmatched sample, which is problematic.

In terms of the independent variables, additional *t*-tests (available upon request) found that although many of the variables approached significance, just three (children, sociability, and number of siblings) attained traditional significance ($p < 0.05$). One might conclude that if many variables do not differ between RCF and reunified children, propensity score matching may not be necessary to account for differences. This view, however, proves overly simplistic, as we are concerned not just with the bivariate relationship between the variables but rather the multiplicative and combinatorial effects of the independent variables on the outcome of interest. Even if none of the independent variables varied between RCF and reunified children, the influence of these variables (bivariate and multivariate) could still differ (e.g., the influence of siblings on the CSI could differ between the groups even if the number of siblings does not differ between the groups). Fortunately, it is in precisely these situations that propensity

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[3] Some children with a high propensity to reunification did not, while some with a low estimated propensity did.

[4] Significance tests are performed across the entirety of the distribution of the propensity score, thereby ensuring uniformity.

Table 1
Descriptive statistics for variables, N = 361.

	Reunified (n = 157)	RCF (n = 204)	Total
Child Status Index Total (CSI)			43.4 (4.43)*
CSI: Education & skills			7.26 (1.06)**
CSI: Food & nutrition			7.27 (1.00)***
CSI: Health			7.49 (0.88)
CSI: Protection			7.12 (1.11)
CSI: Psychosocial			7.12 (1.03)
CSI: Shelter & care			7.10 (1.14)
Social attachment: context specific			6.21 (1.34)
Social attachment: emotion-eliciting			2.81 (0.63)
Social attachment: gen. attachment & companionship			3.53 (0.86)
Strength & Difficulties Total(SDQ)			9.61 (5.27)
SDQ: Emotional problems			3.08 (2.24)
SDQ: Conduct problems			1.38 (1.62)
SDQ: Hyperactivity problems			2.35 (1.68)
SDQ: Peer problems			2.83 (2.04)
SDQ: Antisocial behavior			1.98 (1.83)
SDQ: Externalizing problems			3.72 (2.70)
SDQ: Internalizing problems			5.89 (3.33)
Hope Scale total			11.7 (7.36)
Hope Scale: pathway			4.98 (4.39)
Hope Scale: agency			6.78 (3.53)
Female	0.42 (0.49)	0.42 (0.49)	0.42 (0.49)
Age	15.8 (3.36)	13.4 (2.86)	14.5 (3.32)
Double orphan	0.20 (0.40)	0.20 (0.40)	0.20 (0.40)
Single orphan	0.35 (0.48)	0.39 (0.49)	0.37 (0.48)
Time in orphanage	5.40 (3.40)	5.89 (3.43)	5.67 (3.42)
School performance	0.83 (0.69)	0.85 (0.72)	0.84 (0.70)
No school info recorded	0.16 (0.37)	0.13 (0.34)	0.14 (0.35)
#Vaccines received	3.78 (3.38)	4.40 (3.12)	4.12 (3.25)
Has mental/physical problems/limitations	0.23 (0.42)	0.20 (0.40)	0.21 (0.41)
Child is very social	1.07 (0.65)	1.23 (0.43)	1.15 (0.54)
Problems with authority	0.86 (0.35)	0.82 (0.39)	0.83 (0.37)
Child has been hit/caned	0.31 (0.47)	0.32 (0.47)	0.32 (0.47)
#Siblings	3.32 (2.21)	3.96 (2.83)	3.67 (2.59)

Standard deviations in parentheses.

* p < 0.05.
** p < 0.01.
*** p < 0.001.

Table 2
Non-Parametric Estimators with Multiple Matching Procedures: The Treatment Effect of Ghanaian Children's Reunification on Children's Status Index, Social Attachment, Strengths and Difficulties, Hope, and Basic Resources, n = 361.

		Matching method		
		Nearest neighbor	Kernel	Stratification
CSI	Total	0.79	1.78**	1.95**
	Education & skills	0.23	0.28*	0.37*
	Food & nutrition	0.13	0.39**	0.38**
	Health	0.42*	0.48***	0.49***
	Protection	−0.15	0.03	0.03
	Psychosocial	−0.07	0.21	0.21
	Shelter & care	0.14	0.27#	0.35*
Social attachment	Total	−0.93#	−0.32	−0.16
	Context specific	−0.60*	−0.30	−0.21
	Emotion-eliciting	−0.20	−0.04	−0.03
	Gen. attachment & companionship	−0.13	0.02	0.08
SDQ	Total	0.05	0.01	−0.23
	Emotional problems	−0.39	−0.53#	−0.62*
	Conduct problems	0.13	0.12	0.07
	Hyperactivity problems	−0.13	0.07	−0.00
	Peer problems	0.48	0.38	0.35
	Antisocial behavior	−0.62#	−0.34	−0.45#
	Externalizing problems	−0.05	0.16	0.04
	Internalizing problems	0.10	−0.15	−0.27
Hope Scale	Total	−3.83***	−3.44***	−3.09**
	Pathways	−2.15**	−2.10***	−1.95**
	Agency	−1.65**	−1.32**	−1.11*
Basic resources	Water source	0.18*	0.16*	0.14*
	Toilet type	0.44***	0.45***	0.45***
	Sleeping arrangements	2.05***	2.03***	2.00***
	Household goods	−0.13	−0.16	−0.08

CSI-Child Status Index. SDQ-Strength and Difficulties Questionnaire.

\# p < 0.10.
* p < 0.05.
** p < 0.01.
*** p < 0.001.

scores excel (Rosenbaum & Rubin, 1983), as it is more important how the variables behave collectively than individually and why we include such a wide range of variables, as advocates of PSM suggest (Morgan, 2007).

We first estimated the propensity score using binary logistic regression to estimate the propensity of reunification for all children in the sample (results of estimation of the propensity score not shown due to space limitations but available upon request). Initial analyses showed excellent model fit (pseudo r2 ∼ 0.34), suggesting the binary logistic regression used to estimate the propensity score did an excellent job of modeling differences between the two groups. After final model selection of the propensity score (balancing was achieved, the region of common support invoked), we then sought to demonstrate the robustness of our findings by employing *nearest neighbor*, *kernel*, and *stratification* matching, all with bootstrapped standard errors (500 replications) to ensure the efficiency of the estimates.

Table 2 presents the results of the propensity score matching (positive numbers favor RCF children). For the Child Status Index, results from both the *kernel* and *stratification* procedures suggest that the presence of a potentially causal effect of reunification, with RCF children scoring higher overall than their reunified counterparts. This pattern was observed, with varying degrees of consistency, across the education and skills, food and nutrition, health, and shelter and care subscales of the CSI as well. Also of interest is the lack of significant differences in the level of abuse and exploitation experienced by both groups, as well

Table 3

Non-parametric estimators with multiple matching procedures: the treatment effect of Ghanaian children's reunification on individual items from the children's status index, n = 361.

	Matching method		
	Nearest neighbor	Kernel	Stratification
Food security	0.05	0.15**	0.14*
Nutrition & growth	0.03	0.19*	0.19*
Shelter	0.18#	0.21#	0.25*
Care	− 0.11	− 0.00	0.04
Abuse & exploitation	− 0.09***	− 0.01	− 0.02
Legal protection	− 0.05	0.07	0.08
Wellness	0.13#	0.13	0.13
Health care services	0.30***	0.34***	0.34***
Emotional health	0.03	0.15	0.16
Social behavior	− 0.11	0.05	0.05
Performance	0.03	0.02	0.05
Education & work	0.18	0.25***	0.32**

\# $p < 0.10$.
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$.

as levels of care received and levels of social behavior shown in a more detailed examination, as shown in Table 3. In addition, children in the RCFs reported better access to resources such as piped drinking water and a flush toilet, with differences of about 0.15 for water and about 0.4 for toilet, both on a scale from 0 to 1, indicating that observed differences in percent with access to these resources are large (i.e., only about 28% of reunified children reported access to a flush toilet compared to 68% of RCF children) and potentially causal. Not surprisingly, there is also a large difference in the number of people who sleep, on average, per room, with more people per room in the RCFs.

Nearest neighbor results suggest, in contrast, that children in care facilities report less context specific social attachment, although the other matching suggest this effect may not be sufficiently robust. For the Strength and Difficulties Questionnaire, results suggest that RCF children may have fewer emotional problems and less antisocial behavior, though, again, these effects are marginal at best. The combination of inconsistency across matching procedures and marginal significance ($p < 0.10$) urges extreme caution in interpretation without further research.

Perhaps the clearest results come from the Children's Hope Scale, where reunified children reported consistently higher levels, both in terms of the overall level, where reunified children reported > 3 points higher than their counterparts in the RCFs, and the subscales, pathways and agency. On the pathways subscale, reunified children reported scores about 2 points higher; their agency subscale score was around 1.3 points higher. Reunified children perceived more hope than RCF children, both in their sense of capacity to make and achieve their goals, and perceiving the feasibility of achieving them.

Perhaps of particular interest to policymakers and practitioners is the breakdown of the Child Status Index. Because it asks about to both goods/services to which the child has access and psychosocial measures, we wanted to examine each CSI item individually to examine whether differences in the total and subscales observed across the CSI emerge from differences between reunified and RCF children related to goods/services or psychosocial measures, or both.

The results of this propensity score matching analyses are found in Table 3 and confirm our original proposition that distinctions between reunified and RCF children on the Child Status Index are related to the provision of goods and services rather than psychosocial discrepancies. We observed differences on food security, nutrition and growth, shelter, health care services, and education and work but no differences on care, abuse and exploitation, legal protection emotional health, social behavior, or performance. These results strongly suggest that differences

in CSI are linked more to the provision of goods and services rather than to psychosocial differences.

7. Discussion

Our findings clearly suggest that meeting the basic needs and providing family-based care for vulnerable children may be at odds under current programming in Ghana. While children in RCFs enjoy relatively better access to education, health care, nutrition, and shelter, they lag behind their reunified counterparts in their level of hope, a major strength connected to future outcome. Despite the government's stated intentions to support reunification efforts with financial, education, emotional and social resources (Ministry of Gender, Child, and Social Protection, 2014), very few reunified children in our study received follow-up services. Hence, the differences observed are likely the floor of possible differences between the two groups in terms of access to basic resources. Since some Ghanaian RCFs already struggle to provide adequate nutrition and medical needs for the children in their care (Castillo et al., 2012), our findings are cause for even greater concern for reunified children and suggest that a concerted, sustained follow-up effort to link reunified children and their families to relevant resources is necessary to ensure a smooth transition and stable reintegration (Wedge, 2013). An influx of resources, training, and social services would also likely alleviate many of the observed differences in the access to basic sanitation resources like piped water and flush toilets.

On the other hand, the elevated hope levels among reunified children portends optimism as they continue to develop into adulthood. Hope is a well-researched psychological strength with powerful implications as the children grow. Hope levels have been associated with optimism, self-efficacy, self-esteem and problem solving capacity (Snyder, Rand, & Sigmon, 2002), leading to a wide range of positive outcomes such as goal attainment (Feldman, Rand, & Kahle-Wrobleski, 2009), academic achievement (Day, Hanson, Maltby, Proctor, & Wood, 2010), competitive tasks (Curry, Snyder, Cook, Ruby, & Rehm, 1997), and lower externalizing behavior (Barnum, Snyder, Rapoff, Mani, & Thompson, 1998).

Further, hope is a strong predictor of life satisfaction (O'Sullivan, 2011), a subjective sense of wellbeing with long term implications. Valle, Huebner, and Suldo (2006), in a test/retest of the Children's Hope Scale one year apart, found that adolescents reporting higher initial levels of hope were more likely to report higher levels of global life satisfaction, even after controlling for initial levels of life satisfaction. They also found that higher levels of hope were inversely related to rates of internalizing behavior—i.e., they suffered from less depression, social withdrawal, and fearfulness. Not surprisingly Gilman and Huebner (2006) found that adolescents with high life satisfaction enjoyed better mental health benefits. Suldo and Huebner (2004) found that life satisfaction mediated between stressful environmental factors and children's problem behavior. Importantly, parental social support and parental supervision were the strongest predictor of life satisfaction for adolescents. Although there are likely to be cultural differences, we strongly suspect that restored relationships with kin or other caregivers play an important role with our reunified sample. The stress of transitioning from RCFs may be mitigated by higher levels of hope and life satisfaction derived from reunification.

We wondered if the higher levels of hope found among reunified children was a built-in bias: that is, if these children had families to return to, did they always have higher levels of hope than other children in the RCF? Several things argue against this possible explanation. First, we did not find a higher level of orphanhood (having lost one or both parents) among children who remained in the facilities compared to children who were reunified. Additionally, among children living in residential care centers in Rwanda, Nsabimana (2016) found that children who had living biological parents actually felt a greater sense of rejection and showed externalizing problems while in the institution than children who had no living biological parents.

Hope is closely associated with many other personal strengths that the children will need as they navigate the remainder of their youth and adult life. It is closely related to self-efficacy—"people's belief in their capabilities to produce given attainments" (Bandura, 2006, p. 307), which has been associated with better success in the work place, effective coping behavior, self-regulation and achievement strivings (Bandura & Cervone, 1983). Hope is also an important predictor of problem solving ability (Chang, 1998) and aids in the recovery from stressful life events (Kortte, Stevenson, Hosey, Castillo, & Wegener, 2012). Hope, in short, is key to future-oriented strength and crucial to both individual and societal wellbeing (Barnett & Weston, 2008).

Finally, although we did not measure this separately, a stronger sense of self may also be responsible for the higher level of hope among reunified children. Many children in residential care suffer from a negative view of self (Manso, Garcia-Baamonde, Alonso, & Barona, 2011). Fuentes, García, Gracia, and Lila (2011) found that the concept of self and psychosocial adjustment are inextricably linked in adolescence. The experience of being (re)claimed by and (re)joining family may be powerful experiences in (re)formulating a sense of identity. At the same time, shedding the stigma of living in an 'orphanage' is likely to strengthen the child's sense of legitimacy as a 'normal' member of the community. It is also possible, as recent research suggests, that the quality of care one influences psychosocial outcomes (Huynh, 2017), an issue that merits further research in the reunification literature.

One may reasonably wonder if, given Ghana's unique circumstances, the results extend to other countries. On the one hand, our non-probability convenience sample is limited in its generalizability. But our study is consistent with other studies noting both the benefits and difficulties associated with reunification. Importantly, there is evidence both for and against reunification, underlining the critical need for cautious and nuanced policymaking, implementation, and follow-up. In some countries, such as Ghana and Rwanda, reunified children often fared better than their institutionalized counterparts (Nsabimana, 2016; Weiss, 2015; Yendork & Somhlaba, 2015) whereas tales from Cambodia, China, Ethiopia, India, Kenya, South Sudan, and Tanzania (Braitstein et al., 2013; Hong et al., 2011; Muller, Munslow, & O'Dempsey, 2017; Whetten et al., 2014) prove cautionary. Outcomes, samples, and motivations/contexts for reunification vary greatly, so increased attention to inter- and intra-country contexts is clearly warranted.

8. Limitations and suggestions for further research

Like any paper, this one has limitations. First, perhaps the most obvious, is the sample. Although we tried diligently to include a wide range of children from both RCF and reunified contexts, this is a convenience sample, so it remains unclear about the extent to which these findings generalize, as Ghana is a unique case study and no sampling frame of the population of reunified and RCF children was available. Second, we do not know whether the differences we observe here persist through time, although we did ensure that reunified children had spent at least six months in their new homes before we interviewed them to avoid a 'honeymoon' effect. Future research, particularly longitudinal studies that employ representative samples drawn from populations using probability sampling methods, would be very useful. This study, however, constitutes a solid first step toward answering the questions addressed here.

9. Conclusion

These results show that among our sample, both RCFs and families have room for improvement when seeking to meet the needs of children. The institution/family-based care debate should avoid the dichotomization of the family or RCFs as being 'better' than the other. As our results show, the children's basic needs are often being better served in care facilities as previously documented by Whetten et al. (2014);

adequate food, education and health care are essential needs that must be met. At the same time, however, access to basic needs should not come at the expense of separation from family and community, with attendant consequences of such a separation and diminished hope in their future. After all, it may be argued, that the gap in basic resources between reunified and RCF children can largely be resolved through an influx of cash and human capital relatively quickly and more easily. On the other hand, increasing children's feelings of hope for their future and their ability to influence their world and enact their vision of it is much more difficult to do, outside of the identity and sense of belonging offered by family and community.

In the end, these results underline the importance of supporting children's physical and psychosocial developmental needs in both settings while striving to restore children's right to family-based care. Children who were reunified with family members or other kin may require additional support regarding access to basic resources whereas interventions designed to increase hope may benefit children in residential care. Given the millions of children currently residing in care facilities and the push to reintegrate them into families and communities, we hope this paper will provide evidence to guide policy and practice in such efforts. We urge a redoubling of efforts to care for children, particularly reunification, with stronger support and follow-up mechanisms provided through a comprehensive system of national policy, strengthening resources, trained personnel, and case management services.

References

Aboud, F., Samuel, M., Hadera, A., & Addus, A. (1991). Intellectual, social and nutritional status of children in an Ethiopian orphanage. *Social Science and Medicine, 33*(11), 1275–1280. http://dx.doi.org/10.1016/0277-9536(91)90075-N.

Ainsworth, M. D. S. S., & Bell, S. M. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development, 41*(1), 49–67. Retrieved from http://www.jstor.org/stable/1127388?seq=1&cid=pdf-reference#references_tab_contents.

Amato, P. R. (2010). Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family, 72*(3), 650–666. http://dx.doi.org/10.1111/j.1741-3737.2010.00723.x.

Asquith, S., & Turner, E. (2008). *Recovery and reintegration of children from the effects of sexual exploitation and related trafficking.* Geneva, Switzerland: Oak Foundation Child Abuse Programme Retrieved from https://www.childwatch.uio.no/research/migration-children/trafficking/Recovery_and_Reintegration_English.pdf.

Bandura, A. (2006). Guide for constructing self-efficacy scales. *Self-efficacy beliefs of adolescents* (pp. 307–337). . http://dx.doi.org/10.1017/CBO9781107415324.004.

Bandura, A., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology, 45*(5), 1017–1028. http://dx.doi.org/10.1037/0022-3514.45.5.1017.

Barnett, T., & Weston, M. (2008). Wealth, health, HIV and the economics of hope. *AIDS, 22*(Suppl. 2(July)), S27–S34. (London, England) https://doi.org/10.1097/01.aids.0000327434.28538.51.

Barnum, D. D., Snyder, C. R., Rapoff, M. A., Mani, M. M., & Thompson, R. (1998). Hope and social support in the psychological adjustment of children who have survived burn injuries and their matched controls. *Children's Health Care.* http://dx.doi.org/10.1207/s15326888chc2701_2.

Becker, S., & Ichino, A. (2002). Estimation of average treatment effects based on propensity scores. *The Stata Journal, 2*(4), 358–377.

Betancourt, T. S., Brennan, R. T., Rubin-Smith, J., Fitzmaurice, G. M., & Gilman, S. E. (2010). Sierra Leone's former child soldiers: A longitudinal study of risk, protective factors, and mental health. *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(6), 606–615. http://dx.doi.org/10.1016/j.jaac.2010.03.008.

Better Care Network, & UNICEF (2015). Country Care Profile-Ghana. Retrieved from http://www.bettercarenetwork.org/sites/default/files/CountryCare Profile - Ghana_0.pdf.

Bilson, A. (2009). Use of residential care in Europe for children aged under three: Some lessons from neurobiology. *British Journal of Social Work, 39*(7), 1381–1392. http://dx.doi.org/10.1093/bjsw/bcp076.

Bos, K. J., Fox, N., Zeanah, C. H., Nelson Iii, C. A., & Nelson, C. A. (2009). Effects of early psychosocial deprivation on the development of memory and executive function. *Frontiers in Behavioral Neuroscience, 3*(September), 1–7. http://dx.doi.org/10.3389/neuro.08.016.2009.

Bowly, J. (1982). *Attachment and loss.* New York: Basic Books.

Braitstein, P., Ayaya, S., Nyandiko, W. M., Kamanda, A., Koech, J., Gisore, P., ... Ayuku, D. O. (2013). Nutritional status of orphaned and separated children and adolescents living in community and institutional environments in Uasin Gishu County, Kenya. *PLoS One, 8*(7), http://dx.doi.org/10.1371/journal.pone.0070054.

Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology, 28*, 759–775. http://dx.doi.org/10.1037/0012-

1649.28.5.759.

Caliendo, M., & Kopeinig, S. (2005). *Some practical guidance for the implementation of propensity score matching (no. 1588)*. Bonn, Germany: SSRN eLibrary. Retrieved from http://ssrn.com/paper=721907.

Castillo, J. T., Sarver, C. M., Bettmann, J. E., Mortensen, J., & Akuoko, K. (2012). Orphanage caregivers' perceptions: The impact of organizational factors on the provision of services to orphans in the Ashanti region of Ghana. *Journal of Children and Poverty, 18*(2), 141–160. http://dx.doi.org/10.1080/10796126.2012.710484.

Chang, E. C. (1998). Hope, problem-solving ability, and coping in a college student population: Some implications for theory and practice. *Journal of Clinical Psychology, 54*(7), 953–962. http://dx.doi.org/10.1002/(SICI)1097-4679(199811) 54:7<953::AID-JCLP9>3.0.CO;2-F.

Chapman, J., Foreit, K., & Parker, L. (2015). *Collecting PEPFAR Essential Survey Indicators: A Supplement to the OVC Survey Tools MEASURE Evaluation.* Retrieved from https:// www.measureevaluation.org/resources/publications/ms-14-90.

Chipungu, S. S., & Bent-Goodley, T. B. (2004). Meeting the challenges of contemporary foster care. *The Future of Children,* 74–93 (Winter).

Cimpric, A. (2010). *Children accused of witchcraft: An anthropological study of contemporary practices in Africa.* (Dakar, Senegal).

Colburn, J. (2010). Orphanages of Accra: A Comparative Case Study on Orphan Care and Social Work Practices. *Independent Study Project (ISP) Collection, Paper 850*.

Csáky, C. (2009). *Keeping children out of harmful institutions: Why we should be investing in family-based care.* London, UK: Save the Children. Retrieved from https://www. savethechildren.org.uk/sites/default/files/docs/Keeping_Children_Out_of_Harmful_ Institutions_Final_20.11.09_1.pdf.

Curry, L. A., Snyder, C. R., Cook, D. L., Ruby, B. C., & Rehm, M. (1997). Role of hope in academic and sport achievement. *Journal of Personality and Social Psychology, 73*(6), 1257–1267. http://dx.doi.org/10.1037/0022-3514.73.6.1257.

Day, L., Hanson, K., Maltby, J., Proctor, C., & Wood, A. (2010). Hope uniquely predicts objective academic achievement above intelligence, personality, and previous academic achievement. *Journal of Research in Personality, 44*(4), 550–553. http://dx.doi. org/10.1016/j.jrp.2010.05.009.

Deighton, J., Croudace, T., Fonagy, P., Brown, J., Patalay, P., & Wolpert, M. (2014). Measuring mental health and wellbeing outcomes for children and adolescents to inform practice and policy: A review of child self-report measures. *Journal of Child and Adolescent Psychiatric and Mental Health Nursing, 8*(1), 14. http://dx.doi.org/10. 1186/1753-2000-8-14.

Dykas, M. J., & Cassidy, J. (2011). Attachment and the processing of social information across the life span: Theory and evidence. *Psychological Bulletin, 137*(1), 19–46. http://dx.doi.org/10.1037/a0021367.

Dziro, C., & Rufurwokuda, A. (2013). Post-institutional integration challenges faced by children who were raised in children's homes in Zimbabwe. *Greener Journal of Social Sciences, 3*(5), 267–277.

Eleke, I. D. M. (2006). *Effective reintegration of female child soldiers: Reality or rhetoric ? Case Study of Northern Uganda.* Universidade Eduardo Mondlane Mozambique. Retrieved from http://repository.up.ac.za/handle/2263/1221.

Feldman, D. B., Rand, K. L., & Kahle-Wrobleski, K. (2009). Hope and goal attainment: Testing a basic prediction of hope theory. *Journal of Social and Clinical Psychology, 28*(4), 479–497. http://dx.doi.org/10.1521/jscp.2009.28.4.479.

Frimpong-Manso, K. (2014). Child welfare in Ghana: The past, present and future. *Journal of Educational and Social Research, 4*(6), 411–419. http://dx.doi.org/10.5901/jesr. 2014.v4n6p411.

Fuentes, M. C., García, J. F., Gracia, E., & Lila, M. (2011). Autoconcepto y ajusto psicosocial en la adolescencia. *Psicothema, 23*(1), 7–12.

Ghana News Agency (2013). Social Welfare Department define conditions for placing children in Orphanages. Retrieved from https://www.modernghana.com/news/ 452571/1/social-welfare-department-define-conditions-for-pl.html.

Gilman, R., & Huebner, E. S. (2006). Characteristics of adolescents who report very high life satisfaction. *Journal of Youth and Adolescence, 35*(3), 293–301. http://dx.doi.org/ 10.1007/s10964-006-9036-7.

Goodman, A., Lamping, D. L., & Ploubidis, G. B. (2010). When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the strengths and difficulties questionnaire (SDQ): Data from british parents, teachers and children. *Journal of Abnormal Child Psychology, 38*(8), 1179–1191. http://dx.doi. org/10.1007/s10802-010-9434-x.

Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology, 38*(5), 581–586. http://dx.doi.org/10.1111/j.1469-7610. 1997.tb01545.x.

Goodman, R., & Scott, S. (1999). Comparing the strengths and difficulties questionnaire and the child behavior checklist: Is small beautiful? *Journal of Abnormal Child Psychology, 27*(1), 17–24. http://dx.doi.org/10.1023/A:1022658222914.

Harris, M. S., Johnson, K., Young, L., & Edwards, J. (2011). Community reinsertion success of street children programs in Brazil and Peru. *Children and Youth Services Review, 33*(5), 723–731. http://dx.doi.org/10.1016/j.childyouth.2010.11.017.

Hong, Y., Li, X., Fang, X., Zhao, G., Zhao, J., Zhao, Q., ... Stanton, B. (2011). Care arrangements of AIDS orphans and their relationship with children's psychosocial wellbeing in rural China. *Health Policy and Planning, 26*(2), 115–123. http://dx.doi.org/ 10.1093/heapol/czq025.

Huynh, H. V. (2017). *Factors affecting the psychosocial well-being of orphan and separated children in five low- and middle-income countries: Which is more important, quality or form of care?* Clemson University. Retrieved from http://bettercarenetwork.org/sites/ default/files/FactorsAffecting the Psychosocial Well-Being of Orphan and Separ.pdf.

Inter-Agency Group on Children's Reintegration (2016). *Guidelines on Children's Reintegration.*

Johnson, D. E., & Dole, K. (1999). International adoptions: Implications for early intervention. *Infants & Young Children, 11*(4), 34–45.

Johnson, R., Browne, K., & Hamilton-Giachritsis, C. (2006). Young children in institutional care at risk of harm. *Trauma, Violence & Abuse, 7*(1), 34–60. http://dx.doi.org/ 10.1177/1524838005283696.

Kang'ethe, S. M., & Makuyana, A. (2014). Orphans and vulnerable children (OVC) care institutions: Exploring their possible damage to children in a few countries of the developing world. *Journal of Social Sciences, 38*(2), 117–124.

Kortte, K. B., Stevenson, J. E., Hosey, M. M., Castillo, R., & Wegener, S. T. (2012). Hope predicts positive functional role outcomes in acute rehabilitation populations. *Rehabilitation Psychology, 57*(3), 248–255. http://dx.doi.org/10.1037/a0029004.

Lumos (2017). Out of the shadows. London, UK. Retrieved from http://www.nature.com/ doifinder/10.1038/scientificamericanmind0716-56.

Manso, J. M. M., Garcia-Baamonde, M. E., Alonso, M. B., & Barona, E. G. (2011). An analysis of how children adapt to residential care. *Children and Youth Services Review, 33*(10), 1981–1988. http://dx.doi.org/10.1016/j.childyouth.2011.05.024.

Massoglia, M. (2008). Incarceration, health, and racial disparities in health. *Law & Society Review, 42*(2), 275–306.

Matshalaga, N. R., & Powell, G. (2002). Mass orphanhood in the era of HIV/AIDS topic collections. *BMJ, 324*, 185–186. http://dx.doi.org/10.1136/bmj.324.7331.185.

McLanahan, S., & Sanderfur, G. (1994). *Growing up with a single parent: What hurts, what helps.* Cambridge, MA: Harvard University Press.

McLanahan, S., Tach, L., & Schneider, D. (2013). The causal effects of father absence. *Annual Review of Sociology, 39*, 399–427. http://dx.doi.org/10.1146/annurev-soc-071312-145704.

Meintjes, H., Moses, S., Berry, L., & Mampane, R. (2007). *Home truths: The phenomenon of residential Care for Children in a time of AIDS.* Pretoria, South Africa: Childrens Institute & Centre for the Study of AIDS, University of Pretoria Retrieved from http:// www.sarpn.org/documents/d0002786/Children_residential_care_Jun2007.pdf.

Merz, E. C., McCall, R. B., & Groza, V. (2013). Parent-reported executive functioning in Postinstitutionalized children: A follow-up study. *Journal of Clinical Child & Adolescent Psychology, 42*(5), 726–733. http://dx.doi.org/10.1080/15374416.2013. 764826.

Ministry of Employment and Social Welfare, & UNICEF (2010). *National Plan of Action for Orphans and Vulnerable Children Ghana.*

Ministry of Gender, Child, and Social Protection (2014). *Child and Family Welfare Policy.*

Mitra, R., & Reiter, J. P. (2012). A comparison of two methods of estimating propensity scores after multiple imputation. *Statistical Methods in Medical Research, 25*(1), 962280121445945. http://dx.doi.org/10.1177/0962280212445945.

Morgan, S. L. (2007). *Counterfactuals and causal inferences: Methods and principles for social research.* Cambridge: Cambridge University Press.

Morgan, S. L., & Harding, D. J. (2006). Matching estimators of causal effects. *Sociological Methods & Research, 35*, 3–60. http://dx.doi.org/10.1177/0049124106289164.

Muller, B., Munslow, B., & O'Dempsey, T. (2017). When community reintegration is not the best option: Interethnic violence and the trauma of parental loss in South Sudan. *International Journal of Health Planning and Management, 32*(1), 91–109. http://dx. doi.org/10.1002/hpm.2311.

National Scientific Council on the Developing Child (2012). *The science of neglect: The persistent absence of responsive care disrupts the developing brain.* (Cambridge, MA).

Nelson, C. A., Furtado, E. A., Fox, N. A., & Zeanah, C. H. (2009). The deprived human brain. *American Scientist, 97*(3), 222–229. http://dx.doi.org/10.1511/2009.78.222.

Nsabimana, E. (2016). *The process of institutionalization-deinstitutionalization and children's psychologicla adjustment in Rwanda: Parents matter.* University of Fribourg.

O'Donnell, K., Nyangara, F., Murphy, R., Cannon, M., & Nyberg, B. (2013). *Child status index: A tool for monitoring the wellbeing of children orphaned or otherwise made vulnerable as a result of HIV/AIDS.* North Carolina: Chapel Hill.

O'Sullivan, G. (2011). The relationship between hope, eustress, self-efficacy, and life satisfaction among undergraduates. *Social Indicators Research, 101*(1), 155–172. http:// dx.doi.org/10.1007/sl1205-010-9662-z.

Petrowski, N., Cappa, C., & Gross, P. (2017). Estimating the number of children in formal alternative care: Challenges and results. *Child Abuse and Neglect, 70*, 388–398. http:// dx.doi.org/10.1016/j.chiabu.2016.11.026.

Pyper, J. (2010). Orphanage corruption in Ghana: For the benefit of children? *Upstream Journal, 23*(2), 5–7.

Reimer, J. K., Langeler, B., Sophea, S., & Montha, S. (2007). *The road home: Toward a model of reintegration and considerations for alternative care for children trafficked for sexual exploitation in Cambodia.*

Roby, J. L., Rotabi, K. S., & Bunkers, K. M. (2013). Social justice and intercountry adoptions: The role of the U.S. social work community. *Social Work, 58*(4), 295–303. (United States) https://doi.org/10.1093/sw/swt033.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika, 70*(1), 41–55. http://dx.doi.org/ 10.1093/biomet/70.1.41.

Seibert, A. C., & Kerns, K. A. (2009). Attachment figures in middle childhood. *International Journal of Behavioral Development, 33*(4), 347–355. http://dx.doi.org/10.1177/ 0165025409103872.

Smith, H. B. (2014). *Longitudinal study of children's reintegration in Moldova.*

Smith, K., & Wakia, J. (2012). *Family reintegration for children living on the streetsn.*

Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M., Ware, L., Danovsky, M., ... Stahl, K. J. (1997). The development and validation of the Children's hope scale. *Journal of Pediatric Psychology, 22*(3), 399–421. http://dx.doi.org/10.1093/jpepsy/22.3.399.

Snyder, C. R., Rand, K. L., & Sigmon, D. R. (2002). Hope theory. *Handbook of Positive Psychology* (pp. 257–276). .

Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology, 70*(2), 321–335. http://dx.doi.org/10.1037/0022-3514.70.2.321.

Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development, 7*(4), 349–367. http://dx.

doi.org/10.1080/14616730500365928.

Stamoulis, C., Vanderwert, R. E., Zeanah, C. H., Fox, N. A., & Nelson, C. A. (2015). Early psychosocial neglect adversely impacts developmental trajectories of brain oscillations and their interactions. *Journal of Cognitive Neuroscience, 27*(12), 2512–2528. http://dx.doi.org/10.1162/jocn_a_00877.

Stuckenbruck, D., & Roby, J. L. (2017). Navigating uncharted terrain: Domestic adoptions in Kenya. *Child & Family Social Work*. http://dx.doi.org/10.1111/cfs.12365.

Suldo, S. M., & Huebner, E. S. (2004). Does life satisfaction moderate the effects of stressful life events on psychopathological behavior during adolescence? *School Psychology Quarterly, 19*(2), 93–105. http://dx.doi.org/10.1521/scpq.19.2.93.33313.

United Nations (1989). *Convention on the rights of the child*.

United Nations (2010). *Guidelines for the alternative care of children*.

Valle, M. F., Huebner, E. S., & Suldo, S. M. (2006). An analysis of hope as a psychological strength. *Journal of School Psychology, 44*(5), 393–406. http://dx.doi.org/10.1016/j.jsp.2006.03.005.

van IJzendoorn, M. H., Luijk, M. P. C. M., & Juffer, F. (2008). IQ of children growing up in Children's homes: A meta-analysis on IQ delays in orphanages. *Merrill-Palmer Quarterly, 54*(3), 341–366.

Wedge, J. (2013). Reaching for home: Global learning on family reintegration in low and lower-middle income countries. Retrieved from http://www.bettercarenetwork.org/sites/default/files/attachments/ReachingforHome-GlobalyLearningonFamilyReintegration.pdf.

Weiss, D. (2015). *Rwanda: Empty orphanages, communities filled with hope*. The Huffington Post.

Wernham, M. (2004). *An outside chance: Street children and juvenile justice-an international perspective*. London: UK.

Whetten, K., Ostermann, J., Pence, B. W., Whetten, R. A., Messer, L. C., Ariely, S., ... Thielman, N. M. (2014). Three-year change in the wellbeing of orphaned and separated children in institutional and family-based care settings in five low- and middle-income countries. *PLoS One, 9*(8), e104872. http://dx.doi.org/10.1371/journal.pone.0104872.

Williamson, J., & Greenberg, A. (2010). *Families, Not Orphanages (No. 1). Better Care Network Working Paper Series*. New York, NY: Better Care Network. Retrieved from http://www.crin.org/docs/FamiliesNotOrphanages.pdf%5Cn http://symposium.jointcouncil.org/wp-content/uploads/2012/04/Williamson-Families-Not-Orphanages-for-JCICS.pdf.

Wolff, P. H., & Fesseha, G. (1999). The orphans of Eritrea: A five-year follow-up study. *Journal of Child Psychology and Psychiatry, 40*(8), 1231–1237. http://dx.doi.org/10.1111/1469-7610.00539.

Wolff, P. H., & Fesseha, G. (2005). The orphans of Eritrea: What are the choices? *The American Journal of Orthopsychiatry, 75*(4), 475–484. http://dx.doi.org/10.1037/0002-9432.75.4.475.

Yendork, J. S., & Somhlaba, N. Z. (2015). Do social support, self-efficacy and resilience influence the experience of stress in Ghanaian orphans? An exploratory study. *Child Care in Practice, 21*(2), 140–159. http://dx.doi.org/10.1080/13575279.2014.985286.

Zeanah, C. H., Smyke, A. T., Koga, S. F., & Carlson, E. (2005). Attachment in institutionalized and community children in Romania. *Child Development, 76*(5), 1015–1028. http://dx.doi.org/10.1111/j.1467-8624.2005.00894.x.