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Impact of Homelessness on School Readiness Skills and Early Academic Achievement: A Systematic Review of the Literature

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Abstract

A systematic review of research exploring the impact of homelessness on young children's school readiness skills in preschool and academic performance in early elementary school is presented. Fourteen studies were identified that included data exploring this association in preschool through Grade 3. Findings indicated that children experiencing homelessness have lower school readiness skills and academic achievement compared to the general population of children. However, it was not conclusive whether children experiencing homelessness perform lower than socio-demographically matched housed children. Most large studies (> 4000 children) found children experiencing homelessness had lower academic performance than housed low-income children. However, fewer than half of small studies (< 300 children) found support for this association. Good school attendance, high quality parenting, self-regulation, and early education are among several potential protective factors discussed in the literature that may lessen the negative impact of homelessness on school readiness skills and academic achievement in early elementary school.

Keywords Homelessness · School readiness · Academic achievement · Preschool · Elementary school

Young children experiencing homelessness face a myriad of social factors that can put them at high risk for low school readiness skills and poor academic performance (Buckner 2008; Masten et al. 1997; Obradović et al. 2009; Rafferty et al. 2004; Rubin et al. 1996). This risk is apparent prior to entering school and continues through elementary school (Obradović et al. 2009). Indeed, preschool-age children experiencing homelessness are far less likely than their impoverished, housed counterparts to attend early education centers where the acquisition of school readiness skills can be supported (Rescorla et al. 1991; U.S. Department of Education 2006).

According to a report by the National Center for Homeless Education (2012), more than one million students in the United States were identified as homeless or highly mobile during the 2010–2011 school year. This number represented a 13% increase in the number of students experiencing homelessness reported during the 2009–2010 school year. Among the fastest growing segments of the homeless population are families with children under 6 years, which comprises approximately 34% of the population experiencing homelessness (Rog and Buckner 2007; U.S. Department of Housing and Urban Development 2009). Young children who have early adverse experiences, including homelessness, can have suboptimal brain development, lower levels of learning, poorer health (Shonkoff et al. 2012), and an increased likelihood for behavior problems (Samuels et al. 2010) compared to their counterparts not having such experiences. Further, family homelessness and residential mobility can disrupt early schooling experiences for children putting them at risk for poor academic achievement (National Research Council 2010).

The goals of this paper are (a) to provide an overview of definitions for homelessness and differences in who is identified as experiencing homelessness based on definitions; (b) to describe the risk for low academic performance associated with homelessness; (c) to systematically review studies investigating the impact of homelessness on young children's school readiness and early academic skills; and (d) to discuss factors that might lessen the negative influence of homelessness on academic success. Findings from studies exploring the impact of homelessness on achievement will be used to highlight areas

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where policy and practice can be directed to improve education-related support for children experiencing homelessness.
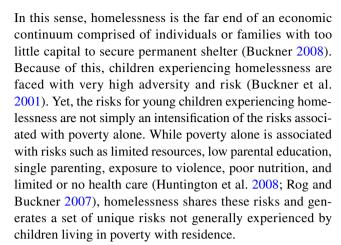
Definitions of Homelessness

The two primary agencies identifying children and families experiencing homelessness in the U.S. are the Department of Housing and Urban Development (HUD) and the Department of Education (ED) via the McKinney–Vento Homeless Assistance Act. The HUD definition of homelessness focuses on individuals without permanent residences or who lack fixed and appropriate residence (e.g., those living in a temporary shelter) but not "doubled-up" living with another family (usually relatives or friends) or taking temporary residence at a location intended for that purpose, such as a hotel or motel. The ED definition expands upon HUD's definition to include individuals doubled-up and living in hotels/motels and focuses specifically on children and youth experiencing homelessness and those awaiting placement in foster homes. The differences between the criteria set forth in these definitions are important for child-related experiences. For example, families with children experiencing homelessness based on the ED definition but not the HUD definition will qualify for fewer services and those children may receive less support to reduce the adverse effects of homelessness. Parents in these situations may be more focused on satisfying their family's physiological needs, such as securing food and shelter, before worrying about their children's educational needs, which can limit the early education experiences for these children. Similarly, parents "turned down" for HUD-related support may believe they are not eligible for education-related support.

This difference is also important as it relates to participants included in research exploring homelessness. Researchers who recruit samples directly from homeless shelters or who use human services records indicating a homeless shelter stay follow the more strict HUD definition. Researchers who use administrative data from school districts likely follow the less strict ED definition. Because the ED definition includes "doubled-up" families and families in temporary housing, such as hotels and motels, studies using this definition will include children with a wider range of homeless experiences. As such, homelessness may relate differently with achievement across studies depending on the definition used for sampling.

Risk for Low Academic Performance Associated with Homelessness

While homelessness can occur for a number of reasons, the most obvious and pervasive reason why children experience homelessness is extreme poverty (Duffield and Lovell 2008).

In this sense, homelessness is the far end of an economic continuum comprised of individuals or families with too little capital to secure permanent shelter (Buckner 2008). Because of this, children experiencing homelessness are faced with very high adversity and risk (Buckner et al. 2001). Yet, the risks for young children experiencing homelessness are not simply an intensification of the risks associated with poverty alone. While poverty alone is associated with risks such as limited resources, low parental education, single parenting, exposure to violence, poor nutrition, and limited or no health care (Huntington et al. 2008; Rog and Buckner 2007), homelessness shares these risks and generates a set of unique risks not generally experienced by children living in poverty with residence.

Unique risk to young children associated specifically with homelessness tends to be broadly related to residential mobility and ineffective parenting practices (Herbers et al. 2011). Residential mobility results in discontinuity of care and schooling, limited time developing and frequent severing of relationships, heightened stress levels, reduction in feelings of ownership and property, disruptions in educational experiences, and inconsistent access to health care and social services (Buckner 2008; Herbers et al. 2011; Masten 1992; Masten et al. 1997; Obradović et al. 2009; Rafferty et al. 2004; Rog and Buckner 2007). The many challenges and stressors of being homeless may also result in parents rearing their children in less effective ways (Buckner et al. 2001; Huntington et al. 2008). Mothers experiencing homelessness tend to score lower on measures of parental warmth and also provide less cognitive stimulation than other mothers experiencing similar economic hardship but not homelessness (Haber and Toro 2004).

It is the addition of unique risk associated with homelessness that may make young children experiencing homelessness more vulnerable for poor school readiness and low academic success compared to those experiencing poverty but not homelessness (Cutuli et al. 2013; Scanlon and Devine 2001). While some studies have found that the risk of homelessness can be quantified on an income-risk continuum, as one unit more risky than poverty alone (e.g., Cutuli et al. 2013), the unique risks associated with homelessness may help explain the processes by which such experiences impact the school readiness and academic performance of these children (Brumley et al. 2015).

The Current Systematic Review

To provide some basis for understanding the impact of homelessness on young children's school readiness and early elementary school performance (through the end of Grade 3), 14 studies exploring these associations were identified. The large differences between studies made

conducting a quantitative meta-analysis impossible. Two studies explore early school readiness skills and 12 explore academic achievement in elementary school. Seven studies recruited participants from homeless shelters, and seven utilized large secondary datasets from school districts and human services departments. A group of four studies and a group of three studies were each conducted within the same school district. Two reports seem to have used the same dataset (same sample description, sample size, location, authors, etc.) and have very high overlap of findings, and therefore should not be considered independent study samples. Finally, many of the fourteen studies share authors (e.g., one researcher is an author on five studies) further suggesting commonality between some of the studies. While these things limit the ability to conduct a quantitative meta-analysis, much can be gained from a systematic analysis and review that summarizes, evaluates, and synthesizes the findings from these studies.

Method

Studies

All studies in this systematic review included samples of children through the end of Grade 3 experiencing homelessness and either comparison samples of children not experiencing homelessness or, in a few cases, comparison data of nationally-representative children used to standardized a measure. All studies needed to have a clear outcome measure of school readiness or academic achievement. Studies focusing only on non-academic performance measures, such as socio-emotional development, rearing practices, intelligence quotient, behavioral problems, health-related issues, environmental variables, or the like, were not included in this review. It should be noted that studies focusing on academic measures as well as non-academic measures were included in this review but only school readiness and academic achievement measures were explored.

An extensive search was initially conducted using Scopus, Google Scholar, and PsychInfo databases with various combinations of the following words and phrases: homeless, homelessness, school readiness, academic achievement, academic functioning, achievement, outcome, education, early education, elementary school, school performance, school success, ability, and skills. The reference lists of studies identified through these database searches were searched for additional studies not identified in the original query. Next, article databases were searched again for all studies citing the identified studies.

In all, 14 studies were identified that included an exploration of the impact of homelessness on young children's academic performance through the end of Grade 3 and school readiness skills prior to elementary school. Studies with participants beyond this age range were only included in the present review provided analyses and conclusions were relevant for understanding the impact of homelessness on children through the end of Grade 3. The list of studies and other relevant factors, including study location, sampling method, size of sample, outcome measure/s, age group, and overall findings (in reference to a general/typical population and/or a socio-demographically matched housed sample) are presented in Table 1.

Study Evaluation Procedures and Variables

The primary focus was to evaluate school readiness or academic achievement differences between children experiencing homelessness and socio-demographically matched housed counterparts and/or a general population of students. To do this, studies were first identified as having a matched socio-demographic comparison group and a general population of students for comparisons. Studies were not excluded from the present investigation if they only had one or the other. Degree of agreement between studies was utilized to draw conclusions about whether homelessness impacts children's school readiness or academic achievement more than would be expected in the general population and in a matched comparison group.

Several between-study factors were explored to help understand trends in the outcome. *Age group* primarily distinguished between preschool-aged samples ($N = 2$) and early elementary-aged samples ($N = 12$). Most studies reviewed included broad age ranges of participants (e.g., 6- to 11-year-olds), though a few studies ($N = 4$) limited focus to a specific age group (e.g., 3rd graders only). One study included both a preschool sample and an elementary school sample. The findings from that study are separated by age group.

Location was used to indicate the city from which the data were collected. Due to the small number of identified studies, it was important to determine the degree to which the studies represented a broad range of communities or were limited to a few communities.

Sampling method was used to describe how the data were gathered for the study. Two types of sampling methods were coded: primary data collection ("primary") and secondary data analysis ("secondary"). In half of the identified studies, researchers actively recruited participants for inclusion in their studies and directly collected data from participants. Most of these studies focused recruitment efforts on homeless shelters. As such, these authors used the more strict HUD definition for homeless because they did not recruit doubled-up families or families living in temporary residence (e.g., motels or hotels). The other half of studies used secondary data obtained from school district records (i.e.,

Table 1 Studies exploring the impact of homelessness on school readiness and early academic performance

	Article	City	Sampling method	Large study? Group sizes or total sample size	Outcome measure	Age range/grade level	Sig. different from socio-demographically matched group	Sig. different from general population
1	Rescorla et al. (1991)	Philadelphia	Primary	No 40 homeless 20 housed	PPVT-R VMI	Preschoolers: 3- to 5-year-olds	Yes	n/a
	Rescorla et al. (1991)		No 43 homeless 25 housed	WRAT-R Reading	6- to 12-year-olds	No	n/a
2	Ziesemer et al. (1994)[b]	Madison	Primary	No 145 homeless 142 housed	CBCL-TRF	Elementary school age (specific ages not provided)	No	n/a
3	Schteingart et al. (1995)	New York	Primary	No 82 homeless 62 housed	ESI	Preschoolers: 3- to 5-year-olds	No	Yes Standardization sample from measure used to represent general population
4	Rubin et al. (1996)[a]	New York	Primary	No 102 homeless 178 housed	WRAT-R	6- to 11-year-olds	Yes Statistical control used to make socio-demographic comparison	n/a
5	Masten et al. (1997)[b]	Minneapolis	Primary	No 73 homeless	WIAT-S	6- to 11-year-olds	n/a	Yes Standardization sample from measure used to represent general population
6	San Austin et al. 1999)[a]	New York	Primary	No 102 homeless 178 housed	WRAT-R	6- to 11-year-olds	Yes Statistical control used to make socio-demographic comparison	n/a
7	Buckner et al. (2001)	Worcester	Primary	No 80 homeless 148 housed	WIAT-S	6- to 17-year-olds	No	Yes Standardization sample from measure used to represent general population. No statistical values were provided for this finding
8	Fantuzzo and Perlman (2007)	Philadelphia	Secondary	Yes N = 11,835	DIBELS TerraNova	Grade 2	Yes	Yes
9	Obradović et al. (2009)	Minneapolis	Secondary	Yes N = 14,754	NALT	Grades 2–5	Yes	Yes
10	Fantuzzo et al. (2012)	Philadelphia	Secondary	Yes N = 8762	TerraNova	Grade 3	Yes	Yes

Table 1 (continued)

Article	City	Sampling method	Large study? Group sizes or total sample size	Outcome measure	Age range/grade level	Sig. different from socio-demographically matched group	Sig. different from general population
11 Herbers et al. (2012)	Minneapolis	Secondary	Yes N = 18,011	NALT	Grades 3-8	Yes	Yes
12 Cutuli et al. (2013)	Minneapolis	Secondary	Yes N = 26,501	NALT	Grades 3-8	Yes	Yes
13 Fantuzzo et al. (2013)	Philadelphia	Secondary	Yes N = 10,639	PSSA	Grade 3	Yes	Yes
14 Brumley et al. (2015)	Philadelphia	Secondary	Yes 481 homeless 4113 housed low-income	TerraNova	Grade 1	No	n/a

Studies are sorted by publication year and author name. "Large" studies are defined as those including 300 or more children. For studies directly comparing groups, group sizes are provided. Otherwise, total sample size is provided

PPVT-R Peabody Picture Vocabulary Test-Revised, *VMI* beery developmental test of visual-motor integration, *WRAT-R* Wide Range Achievement Test-Revised. *ESI* early screening inventory. *WIAT-S* Wechsler Individual Achievement Test-Screening. *CBCL-TRF* Child Behavior Checklist-Teacher Report Form, *NALT* Northwest Achievement Levels Test. *DIBELS* dynamic indicators of basic early literacy skills, and *PSSA* Pennsylvania System of School Assessment

[a]Both studies appear to have used the same dataset

[b]These studies used standardized scores provided by measurement materials for general population comparisons

administrative data) or local departments of human services. The homeless indicator provided by school administrative data follows the ED definition for homeless, while an indicator of stay at a shelter provided by human services departments follows the HUD definition.

Sample size was also included as an important between-study distinction. The identified studies collectively had a highly bimodal distribution of "large" and "small" samples. Studies with more than 4000 participants were considered large (*N* = 7). Studies with fewer than 300 participants were considered small (*N* = 7). No studies were identified with samples between 300 and 4000 participants. Due to the nature of how homelessness and academic success were explored in the identified studies, this factor aligned with *sampling method*: small studies utilized primary data and large studies utilized secondary data.

Finally, *outcome measure* was used to denote the school readiness or academic achievement measure/s used in the identified studies. Ten different outcome measures were utilized in the 14 identified studies. These included the following: Peabody Picture Vocabulary Test, Revised (PPVT-R), Beery Developmental Test of Visual-Motor Integration (VMI), Wide Range Achievement Test, Revised (WRAT-R), Early Screening Inventory (ESI), Wechsler Individual Achievement Test-Screening (WIAT-S), Child Behavior Checklist-Teacher Report Form (CBCL-TRF), Northwest Achievement Levels Test (NALT), Dynamic Indicators of Basic Early Literacy Skills (DIBELS), TerraNova, and Pennsylvania System of School Assessment (PSSA).

Results

Information for all studies reviewed are presented in Table 1. The two studies focusing on school readiness are reviewed separately from studies focusing on early elementary school achievement.

School Readiness

The literature search yielded only two studies focusing on the impact of homelessness on school readiness outcome prior to entry into elementary school, both of which were conducted in the first half of the 1990s. Rescorla et al. (1991) explored the school readiness skills of preschoolers experiencing homelessness and a comparable group of housed preschoolers. Receptive language skills were measured using the Peabody Picture Vocabulary Test-Revised (PPVT-R), and motor coordination skills were measured using the Beery Developmental Test of Visual-Motor Integration (VMI). Findings revealed preschool children experiencing homelessness scored significantly lower in both language

and motor skills compared to a matched sample of housed peers.

Schteingart et al. (1995) explored a variety of early developmental and school readiness skills among preschool-age children (3- to 5-year-olds) experiencing homelessness and compared these factors to a group of matched housed preschoolers and a standardization sample. These authors assessed children using the Early Screening Inventory (ESI), which evaluated visuomotor and fine motor skills, gross motor coordination and body awareness, and receptive and expressive language. While Schteingart et al. did not find preschoolers experiencing homelessness and matched housed comparison group to significantly differ on the ESI, they did find both groups scored significantly below expectations based on the standardization sample.

Taken together, it seems preschoolers experiencing homelessness have lower school readiness/academic skills prior to entering kindergarten compared to the general population. However, findings from these two studies are not consistent with each other as to whether or not preschoolers experiencing homelessness are at further disadvantage than their housed counterparts. This discrepancy of findings can be explained by a variety of differences, including measurement tools, foci of outcome domains, inclusion and definitions of "homeless" and "housed," and other methodological variations. It can also be explained by different samples and sampling techniques. Therefore, it cannot be reasonably concluded that preschool children experiencing homelessness have lower school readiness skills than socio-demographically matched housed peers.

Early Elementary School Achievement

Thirteen studies were identified that included data about the academic achievement of early elementary school children experiencing homelessness. Seven of these studies were published during or after 2007, possibly in response to the Improving Head Start for School Readiness Act of 2007. Three of these seven studies used data from the Minneapolis Public School district, and four used data from the School District of Philadelphia and other local agencies in Philadelphia. The remaining six were published between the early 1990s and 2001, possibly in response to the McKinney–Vento Act of 1987. Two of these six studies used data collected in New York City, and one each from Philadelphia, Madison, Minneapolis, and Worcester.

The two studies that included data collected in New York City (Rubin et al. 1996; San Agustin et al. 1999) were designed to explore academic differences between 6- to 11-year-olds experiencing homelessness and a group of similarly-aged housed children. Both studies utilized the Wide Range Achievement Test-Revised (WRAT-R) as the assessment of achievement, both studies had the same

sample description and the same number of participants, and both studies were written by several of the same authors. While not overtly stated in either study, it is highly probable the data analyzed for these two reports were drawn from the same source. Both studies found children experiencing homelessness scored lower on the WRAT-R compared to housed children after statistically controlling socio-demographic variance in each groups. Contrary to these findings, Rescorla et al. (1991), who also used the WRAT-R, found no difference between school-age children experiencing homelessness and housed counterparts. It should be noted that while Rescorla et al. had a smaller sample ($N = 85$) than Rubin et al. and San Austin et al. ($N = 280$), the comparison housed group was more similarly matched with the homeless group in Rescorla et al. than in Rubin et al. and San Agustin et al.

The authors of two different studies (Buckner et al. 2001; Masten et al. 1997) explored the achievement of elementary school children using the Wechsler Individual Achievement Test-Screener (WIAT-S). Masten et al. (1997) found school-age children experiencing homelessness scored significantly lower on the WIAT-S than expected by standardized scores. Interestingly, Buckner et al. (2001), who explored the differences between school-age children experiencing homelessness and housed children from low-income homes, did not find any differences on the WIAT-S (or measures of intelligence). Ziesemer, Marcoux, and Marwell (1994) also found school-age children experiencing homelessness were not identified as having different academic performance compared to a group of low-income housed children using the Teacher Report Form of the Child Behavior Checklist (CBCL-TRF). These researchers did find that children experiencing homelessness were rated as having lower academic performance compared to the general population of students.

The three newer studies designed to explore the academic achievement of children using data from the Minneapolis Public School district included standardized achievement test scores and an indicator of previous experience with homelessness. The standardized test in these studies was the Northwest Achievement Levels Test (NALT) or a computerized version of the same test. Generally speaking, these studies compared a group of homeless and highly mobile (H/HM) children to groups of children with indicators of poverty (e.g., enrollment in the free or reduced lunch program) and children without any indicators of poverty. Obradović et al. (2009) explored math and reading achievement in Grades 2 through 5. They found H/HM and low-income counterparts performed much lower than the general population. They also found H/HM manifested the greatest risk, compared to the other groups, for low academic performance.

Using data from the same school district, Herbers, Cutuli, Supkoff, Heistad, Chan, Hinz, and Masten (2012)

investigated the growth of academic achievement from Grades 3 through 8. These researchers found degree-of-risk status—from H/HM children to children in free lunch programs to children in reduced lunch programs to children not in free/reduced lunch programs—predicted achievement in Grades 3 through 8 while controlling early reading ability. The third study (Cutuli et al. 2013) using data from the Minneapolis Public School district was also designed to explore achievement from Grades 3 through 8 with the same achievement test and same grouping of children (H/HM, free lunch, reduced lunch, neither). As expected, these researchers found a linear relation between risk status and achievement. They also noted evidence for an acute/limited, rather than chronic/stable, consequence of residential instability.

The last four studies utilized data from the School District of Philadelphia and other local Philadelphia agencies (Brumley et al. 2015; Fantuzzo and Perlman 2007; Fantuzzo et al. 2012, 2013). Fantuzzo and Perlman (2007) explored the impact of out-of-home placement, child maltreatment, and homelessness experienced any time prior to the end of Grade 2 on academic outcomes in Grade 2. Achievement was measured using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good and Kaminski 2002) and the TerraNova, Second Edition (CTB/McGraw-Hill 1997). These researchers found that homelessness was associated with poorer performance on all academic assessments in Grade 2 and also mediated the relation between out-of-home placements and scores on literacy and science assessments. Similarly, Fantuzzo et al. (2012) found third graders who had experienced homelessness and school mobility performed the lowest on the TerraNova, more so than children just experiencing one or the other.

Further, Fantuzzo et al. (2013) found a homeless shelter experience significantly decreased the reading achievement on the TerraNova of third graders compared to children without a homeless shelter experience. Interestingly, Brumley et al. (2015) did not find significant differences in academic reading performance on the TerraNova between low-income first graders with a homeless shelter experience and low-income first graders without a homeless experience. At less than half the sample size as Fantuzzo et al. (2013), it is possible that Brumley et al. (2015) did not have enough statistical power to detect an effect, suggesting the significant effect found in the other studies may result from the very large sample sizes. It is also possible that the risks of homelessness have differential effects on first and third graders. This would suggest risk associated with homelessness may manifest itself differently in 6- or 7-year-olds (i.e., first graders) compared to 8- or 9-year-olds (i.e., third graders).

Among the studies exploring the impact of homelessness on young children's academic achievement, it seems there is one clear trend: all of the studies that included a general population sample or that made comparisons with

a standardization sample representing the general population found children experiencing homelessness to have lower academic achievement compared to the general population. Twelve studies included comparisons between a group of children experiencing homelessness and a group of socio-demographically (to varying degrees) matched housed children. Of these 12, eight studies found children who experienced homelessness had lower achievement than the comparison group. Six of these eight were large (> 4000 participants) secondary data analyses. The remaining two were small studies (Rubin et al. 1996; San Agustin et al. 1999) that estimated a comparison group in their statistical analyses. Three of the four studies that did not support this difference were small studies using methodologically matched (through sampling) comparison groups. Thus, the only studies reporting a difference between elementary-aged children experiencing homelessness and a matched comparison group are very large secondary analyses. Small studies utilizing methodologically matched groups do not support this difference.

Discussion

Most of the identified studies consistently found that young children experiencing homelessness performed significantly lower than the general population of children on measures of academic achievement (Cutuli et al. 2013; Haber and Toro 2004; Obradović et al. 2009; Rescorla et al. 1991; Rog and Buckner 2007). The studies are far less consistent on whether homeless children have lower academic performance than socio-demographically matched children living in poverty. Several studies found that homeless children performed significantly lower than matched comparison children, while other studies found no such difference.

The results suggest that while homeless children may have lower academic achievement in early elementary school compared to socio-demographically matched peers, this association is not likely very large. The most consistent differences found were from studies using very large datasets, which provide power to detect small effects. It is also possible homelessness has more of an acute/temporary negative impact on children's academic achievement that diminishes over a relatively short period of time (Cutuli et al. 2013; but see; Ziesemer et al. 1994) making it difficult to detect an effect long after the homeless experience. Another possibility is that stability of school enrollment reduces the detrimental effects of homelessness (Fantuzzo et al. 2012) further making them difficult to detect. Homeless children who make fewer school-to-school transitions may develop more positive attitudes toward school and gain social support within the school environment. These possibilities should be considered in future research attempting to detangle the

effects of homelessness on children's achievement from other factors.

While children experiencing homelessness have lower school readiness skills and poorer academic performance than the general population, a high portion of children experiencing homelessness have been found to perform average to above average in school (Cutuli et al. 2013; Miliotis et al. 1999; Obradović et al. 2009; Ziesemer et al. 1994). For example, Herbers et al. (2012) found approximately 45% of homeless children had academic scores in the "typical" range. Most attribute this "resilience" to a variety of factors that protect children from the potential detriments associated with homelessness. Some of the more mutable protective factors associated with positive outcomes for children experiencing homelessness include regular attendance, high quality parenting, self-regulation, and early education.

Several studies have found support for school attendance as an important variable related to higher school success for children experiencing homelessness. Rubin et al. (1996) found children experiencing homelessness had an average of 14.6 (plus/minus 19.1) days absent from school, while housed children had an average of 7.4 (plus/minus 11.7) days absent from school. This finding suggests children experiencing homelessness may be absent from school twice as often as housed children. It is not surprising that these authors found large academic differences between the two groups. Other studies, such as Buckner et al. (2001), have found no significant differences in academic performance between homeless and housed children who also did not differ in the number of days absent. It is possible that differences did not emerge between these groups in Buckner et al. because school attendance moderates the relation between housing status and academic performance. This suggests programs designed to help homeless families get their children to school may improve the school success of children experiencing homelessness.

Parenting quality is another important protective factor for children experiencing homelessness. Herbers et al. (2011) collected information about parenting quality from parents of 58 homeless children living in a shelter who were entering kindergarten or Grade 1. These researchers found closeness, warmth, positivity, hostility, and overall/general parenting quality to be associated with teacher report of child academic success. It was noted that high quality parenting was particularly valuable for homeless children experiencing high levels of risk.

Researchers have begun to identify a group of cognitive and behavioral indicators, particularly self-regulation (Buckner et al. 2003, 2009), effortful control (Obradović 2010), and executive function (Masten et al. 2012), that are important protective factors for children experiencing homelessness (Casey et al. 2014). These skills are highly related and generally imply the ability to inhibit prepotent

responses in order to execute secondary responses. Masten et al. (2012) found children experiencing homelessness who demonstrated higher-level executive function skills performed better on measures of school readiness and academic performance. Herbers et al. (2011) also noted one of the likely ways in which parenting improves academic success of children experiencing homelessness is through the development of executive function skills.

There has been one direct attempt to associate early education with improved academic performance for children experiencing homelessness. Schteingart et al. (1995) found both children experiencing homelessness and a matched housed comparison group of children significantly benefited from early education (regardless of housing status). It is possible attending an early education center provides children experiencing homelessness with social and emotional support and stability, which may in turn increase their ability to exercise self-regulation. It is also possible that children who attend early education programs have higher attendance in elementary school due to more social support, increased interest in schooling, or acquisition of important foundational skills not learned through family interactions. More research is needed in this area to explore these and other related possibilities.

The interplay between risks associated with homelessness and available protective factors at an individual level seems very important for stakeholders and policy makers to understand, particularly when trying to design and shape programs that will increase the academic learning of homeless children. Research designed to uncover variation in risk for children experiencing different types and degrees of homelessness and variation in factors supporting positive development in homeless children can help support these efforts. With such information, policy makers and program designers can balance the support available to children experiencing homelessness with their degree of risk, such that those experiencing extreme risk receive an appropriate amount of support to help mitigate the negative influences of homelessness.

Conclusions

Based on the systematic review of the literature, it seems clear that children experiencing homelessness are not entering school with the same school readiness skills as the general population and are scoring lower on academic achievement tests in early elementary school compared to the general population. Research not included in this systematic review suggests homelessness creates added risks, including chronic stress and instability, for homeless children not shared by impoverished children living in homes and that self-regulation/executive function skills may

be important for protecting young children against the hardship of homelessness. Finally, while early education might serve as a protective factor against the deleterious effects of experiencing homelessness, very little research has been conducted on this topic.

One recommendation is that more primary research be conducted with young children experiencing homelessness focusing on the impact early education programs, such as Head Start, might have on these children. The dearth of research in this area is quite surprising given that children experiencing homelessness are among the most vulnerable children for poor academic achievement (Masten et al. 1993) and high quality early education is known to increase the school readiness skills of vulnerable populations (NICHD ECCRN 2003). While it has been shown in some studies that these children have similar achievement to housed children living in poverty, children experiencing homelessness have never been found to have higher achievement than their matched peers, and a number of studies have shown they perform poorer than matched peers. Clearly, more research should be conducted on this topic. This research should focus on the circumstances and mechanisms by which experiencing homelessness might result in lower achievement compared to experiencing extreme poverty while maintaining residence.

Another recommendation is for more inter-agency communication and coordination among those working with children and families experiencing homelessness that might result in increased data sharing and research. Such data sharing may make it possible for research to be conducted that is more directly related to how the experiences associated with homelessness relate to academic and behavioral outcomes in preschool and early elementary school. For example, much of the current literature utilizes secondary datasets that do not seem to contain enough specific information to understand the circumstances by which children become homeless and how that ultimately impacts their success in school.

Homelessness is an on-going social issue leaving thousands of young children highly at-risk for limited school success. Newer legislation, such as the Improving Head Start for School Readiness Act of 2007, is drawing attention to children experiencing homelessness and making early education programs a priority for these children. According to Head Start reports (Office of Head Start 2015), the number of children experiencing homelessness attending a Head Start program nearly doubled between 2007 and 2012. As more and more children experiencing homelessness begin to attend early education programs, the possibilities for providing these children with stable social and learning environments increases. Researchers should explore how early education programs can provide children who have experienced homelessness with social support and school readiness skills that might increase the likelihood for success in school.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Disclosure The contents do not necessarily reflect the views and policies of the Missouri Department of Social Services, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent Informed consent is not an element of review papers such as this because there are no participants from whom data are collected.

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*Indicates the study was used in the systematic review

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