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The Role of Supportive Housing in Homeless Children's Well-Being:

An Investigation of Child Welfare and Educational Outcomes

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The Minn-LInK project at the Center for Advanced Studies in Child Welfare at the University of Minnesota School of Social Work relies on secondary administrative data obtained from statewide public programs. Minn-LInK provides a unique collaborative, university-based research environment with the express purpose of studying child and family well-being in Minnesota. The administrative data sets used in this analysis originate in the Minnesota Department of Human Services (utilizing the Social Services Information System, or SSIS) which oversees the state child protection system in Minnesota and student public school education records from the Minnesota Department of Education. All data use has been within the guidelines set by strict legal agreements between these agencies and the University of Minnesota that protect personal privacy.

Human service programs collect data for multiple purposes: program administration, compliance with federal and state reporting, fiscal management, and local outcome measures. Policy and practice research has rarely been the focus of either automated system development or data collection. While these realities do not prohibit the successful design, implementation, and completion of research, it does present researchers with unique challenges related to study design and time-frames for study group selection that do not occur when collecting and working with primary data. Instances in which data system conditions drove the structure of this study have been noted in this report.

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BACKGROUND

Homelessness in the United States

Homelessness is a critical social challenge for the United States. The U.S. Department of Housing and Urban Development (HUD) estimated that over 650,000 individuals experienced homelessness in 2010, of whom nearly 20 percent experienced long-term homelessness (NAEH, 2011). However, the recent downturn of the economic climate has created a shift in the composition of the homeless population over time. Although the overall number of homeless individuals has remained fairly stable over the past few years, family homelessness increased by approximately 7% between 2008 and 2009 and 30% from 2007 to 2009 (HUD, 2010). Currently, children comprise 22% of the homeless population in the United States on any given night (HUD, 2010).

The challenge of homelessness is evident for Minnesota as well. The Wilder Research Center's survey of Minnesota's homeless families in 2009 noted that family homelessness has risen to its highest level since 1991 (Wilder Research, 2011). In October of 2009, on the night of the survey, 1,455 families were sleeping in emergency shelters or transitional housing options (including 2,857 children aged 17 and younger) and another 200 families (with 394 children) were found sleeping outside or in cars. Disturbingly, the Wilder Research Center concluded that homeless families and children made up 34% of the homeless population in 2009. Furthermore, the number of children affected by homelessness has not always been apparent by those who access emergency centers and shelters. During the survey, Wilder Research Center found that 50% of homeless adults were parents of children aged 17 or younger, yet only 30% had a child with them. It is clear that relatives and guardians are keeping care of children during housing crises for families, which contributes to unstable home life and mobility between residences and schools.

ANALYSIS OF MULTIPLE RESEARCH STUDIES RESULTS IN THE FOLLOWING CONSISTENT FINDINGS (ROG & BUCKNER, 2007):

- The most common profile of a homeless family is one headed by a single woman in her late 20s with approximately two children, one or both under six years of age; those at greatest risk belong to ethnic minority groups.

- The residential histories of homeless families typically reveal high mobility and instability, including living in a variety of doubled up and own housing arrangements.

- Family separations (removal of child) are common occurrences, both before and after the homelessness episode.

- Homeless families are typically extremely poor, and most who are homeless lack human capital – useful skills and abilities – with respect to both education and employment.

- Conflict, trauma, and violence figure prominently in the lives of homeless families, as they do with equally poor but domiciled families.

- Reports of substance abuse, though likely underestimated, are higher for mothers who are homeless than for other woman in poor families but lower than for single adults who are homeless.

Impacts on Children

The negative effects of homelessness on children are well documented. Children who experience homelessness also experience a myriad of negative encounters with educational and child welfare systems. Research has demonstrated that homeless students have disproportionate negative academic experiences, including absenteeism (Larson &

Children who experience homelessness also experience a myriad of negative encounters with educational and child welfare systems.

It may be important to note that homelessness and its negative impact on children are not equitably dispersed among all cultural and ethnic communities. In Minnesota, African American, American Indian, and Hispanic children are more likely to experience homelessness than their White peers. According to the Wilder Research Center's *2009 Survey of Homeless Children and Families*, although American Indians comprise only one percent of all Minnesota youth, they make up 20 percent of homeless youth in Minnesota; African Americans comprise six percent of Minnesota youth but 43 percent of homeless youth in Minnesota; and, youth of Hispanic ethnicity comprise five percent of Minnesota youth but 11 percent of homeless youth in Minnesota.

Meehan, 2009; Rafferty & Rollins, 1989; Rubin et al., 1996; Zima et al., 1994), high rates of mobility (Buckner et al., 2001; Masten et al., 1993; Rafferty et al., 2004) , grade repetition (Rubin et al., 1996; Buckner et al., 2001; Rafferty et al., 2004; Masten, 1997), and the need for special education services (Masten et al, 1997), which may all contribute to poor academic performance (Larson & Meehan, 2009; Rubin et al., 1996; Zima et al., 1994; Rafferty et al., 2004; Masten, 1997; Obradovic et al., 2009). In addition, homeless children are more exposed to violence and social isolation due to their often dangerous living environments, past histories of victimization, and trauma experienced by their mothers. All these factors increase homeless families' probability of involvement with the child welfare system (Anooshian, 2005). The little research that examines homeless families' contact with child welfare indicates that homeless families have higher rates of child protection involvement than non-homeless families in terms of receipt of child protection services (Culhane et al., 2003; Park et al., 2004; Dufield & Lovell, 2008), substantiations of maltreatment (Larson & Meehan, 2011), and out-of-home placements (Larson & Meehan, 2011; Zima et al., 1994; Masten, 1993; Wilder Research, 2010).

Availability of Services to Homeless Families

A myriad of services is available to assist families struggling with homelessness. Available services follow a continuum of care, ranging from emergency shelters to transitional housing to permanent supportive housing. Emergency and transitional housing are time-limited programs, while permanent supportive housing programs do not have a specified time limit. Supportive housing programs focus on those households with significant barriers (e.g., health, disabilities, history of abuse, and violence) to housing stability and long histories of homelessness. The former programs support families moving on to subsidized or unsubsidized permanent housing. The latter programs help people move into mainstream permanent housing by offering permanent housing subsidies coupled with services.

Families and children most at risk of experiencing negative impacts of homelessness are those who experience long-term homelessness. These families often find their way into more intensive programs of support, such as supportive housing programs. In the

supportive housing model, families are offered social services in conjunction with housing, such as job and

> In the supportive housing model, families are offered social services in conjunction with housing, such as job and life skills training, alcohol and drug abuse programs, and case management.

life skills training, alcohol and drug abuse programs, and case management. Supportive housing encompasses a range of approaches including single sites (housing developments or apartment buildings in which units are designated as supportive housing) or scattered site programs in which participants often use rent subsidies to obtain housing from private landlords with supportive services provided through home visits. Services in supportive housing are flexible and primarily focused on the outcome of housing stability since mitigation of the negative effects of homelessness is a primary concern. Research has shown that coupling permanent housing with supportive services is highly effective at maintaining housing stability; it also helps improve health outcomes and decreases the use of publicly-funded institutions (Harburger & White, 2004; National Center on Family Homelessness, 2007).

Hearth Connection

Hearth Connection is a data-driven intermediary nonprofit organization dedicated to ending homelessness in Minnesota. Hearth Connection acts as the administrator of regional service collaboratives focused on the delivery of supportive housing for community members who

experience long-term homelessness. Intensive supportive services are coupled with housing assistance and targeted toward individuals with the greatest challenges and vulnerability. Hearth Connection has built a supportive housing network that includes non-profits and government agencies throughout the state. As of today, Hearth Connection manages three regional supportive housing projects linking 34 counties and three tribal bands in Minnesota. This partnership served over 1,300 men, women, youth and children in 2011. In addition, Hearth Connection gathers and delivers the resources necessary to provide housing and services for participants through building new partnerships and leveraging funds.

A typical family served by Hearth Connection has lived in a shelter prior to receiving supportive housing services, consists of two children and a single parent, is African American, and is from the Twin Cities Metro area. Parents receiving supportive housing services are typically female, approximately 35 years old, and disabled (likely by mental illness). Children whose families receive services are typically aged six to twelve years old, have experienced multiple moves, have been separated from their parent at some point, and have witnessed or experienced multiple violent acts.

Reason for the Study

It is clear that the homeless population is changing; the population is shifting to include a larger proportion of children, and children are negatively impacted by homelessness. However, little is known about children's experiences of homelessness and access to supportive services as it relates to child well-being over time. Even less is known about the impact of housing support on child outcomes, as most research focuses on adult (e.g, employment) or family-level (e.g., housing stability) outcomes. The current understanding of homeless children's encounters with educational and child welfare systems

is driven by studies that explore the experience or "state" of homelessness, rather than change in academic experience and child welfare outcomes longitudinally. In addition, little is known about the most at-risk homeless children and families or how supportive housing services work to keep these children safe and produce the best educational outcomes for them.

Thus, this study sought to better understand the impact of supportive housing services on homeless children's well-being over time. The study's longitudinal design reflects a desire for a more rigorous evaluation of outcomes for homeless children. The U.S. Department of Health and Human Services called for further longitudinal research in the 2007 National Symposium on Homelessness Research. The report, dedicated to homeless families and children, concluded, "Most studies to date, with a few recent excep-

tions, have had cross-sectional designs. Longitudinal studies are needed to explore the course of residential instability and homelessness over several years, and the individual, contextual, and intervention factors

> It is clear that the homeless population is changing; the population is shifting to include a larger proportion of children, and children are negatively impacted by homelessness.

that influence this course. Research conducted to date on children who are homeless has illuminated a fair amount of knowledge on current needs and the impact of homelessness. It would be desirable for future research to address aspects of the homelessness experience that are particularly detrimental to children." (Buckner, 2004).

STUDY DATA & DESIGN

STUDY OVERVIEW

The main purpose of the current study was to investigate the impact of family supportive housing service receipt on children's well-being, including child protection involvement and the academic functioning of homeless children. Specifically, the following questions were investigated:

1) Does receipt of supportive housing services affect children's school attendance rates, school mobility, academic achievement, and rates of Individualized Education Plans (IEP)?,

2) Does receipt of supportive housing services reduce child protection involvement over time?, and

3) Are outcomes of children receiving supportive housing services changing at significantly different rates than those of their homeless peers?

To answer these questions, administrative data was obtained from Hearth Connection and from the Minnesota Departments of Education and Human Services. Data use was allowed and governed by legal data sharing agreements between these agencies and the University of Minnesota's Center for Advanced Studies in Child Welfare (CASCW). Prospective relationships were examined for a population of children receiving supportive housing services at Hearth Connection, a nonprofit organization offering supportive housing to people experiencing long-term homelessness, and a matched sample of their homeless/highly mobile peers not receiving Hearth Connection's supportive housing services. Children included in this study were enrolled in grades 3 through 6. School mobility, school attendance, academic performance on the Minnesota Comprehensive Assessment II (MCA-II), presence of an Individualized Education Plan, and child protection involvement were selected as important indicators of child well-being for this study. Three-year longitudinal data sets were developed and analyzed using Generalized Estimating Equations and Chi-square analysis.

Receipt of Supportive Housing Services

Hearth Connection provided a data set that included information about school age children (n=313) whose families received supportive housing services from 2003 to 2010. Information provided by Hearth Connection included supportive housing service enrollment date, student name, birthdate, and date the families received permanent housing services. Approximately 60% of these children's families were enrolled in supportive housing services (n=183) and permanently housed by Hearth Connection (n=180) in the 2006-2007 academic year. Four Supportive Housing Cohorts were developed using this sample year.

The cohorts consisted of children who were in grades 3, 4, 5, or 6 during the 2006-07 school year and whose enrollment in supportive housing services began in 2007 (see Figure 1). A cohort structure was chosen to allow for analysis of a relatively homogeneous group of children across all chosen indicators of well-being

Children's supportive housing records were sequentially linked to data from the Minnesota Departments of Education and Human Services, including the Minnesota Automated Reporting Student System (MARSS), MCA II database, and Social Services Information System (SSIS). Registry Plus™ Link Plus (NCCDPHP, 2010), a probabilistic record matching software developed for matching cancer registry

records at the Centers for Disease Control (CDC), was utilized for data linking purposes. The use of Link Plus resulted in a match rate of 90% of all children receiving supportive housing services to Minnesota educational records. In addition, 18% of all Hearth Connection children were found in SSIS data (though not all of them were involved in Child Protection).
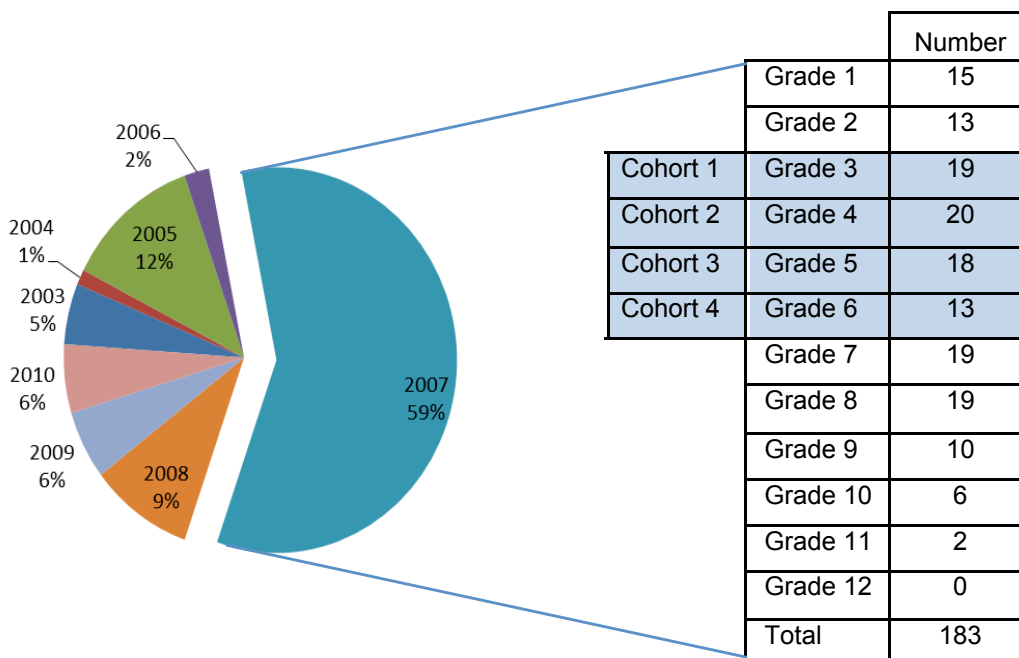
Comparison Groups

To examine the effect of supportive housing service receipt on school outcomes such as attendance, school mobility, and student achievement levels in reading and math, comparison groups were developed using the Homeless Student Flag in MARSS. The federal McKinney Vento Act (U.S. Department of Education, 2004) requires school districts to identify and meet the needs of children and youth who are homeless. The Act defines a homeless student as a student who lacks a fixed, regular and adequate nighttime residence or shares the housing of other persons due to loss of housing, economic hardship, or

a similar reason. Children in the comparison group were identified as homeless children (in both 2008 and 2009) not receiving supportive housing services from Hearth Connection. It is important to note that it is unknown whether students in the comparison groups were homeless in 2007 because this information has only been included in MARSS since 2008. It is also unknown whether these children's families received other types of housing supports in the community (e.g., vouchers). Some comparison group children's families may have received no housing supports while other children's families may have received a wide variety of housing supports. However, the use of this type of comparison group allows for evaluations of supportive housing service receipt versus all other options.

Students in the comparison group identified as homeless in both 2008 and 2009 and were categorized as comparison groups by grades. Descriptive analysis was first used to describe differences between the Supportive Housing and Comparison groups. Table 1 provides descriptive information about the Supportive

FIGURE 1.
NUMBER AND GRADE OF CHILDREN IN SUPPORTIVE HOUSING COHORTS, BASED ON 2007 ENROLLMENT IN SUPPORTIVE HOUSING SERVICES (N=183)

		Number
	Grade 1	15
	Grade 2	13
Cohort 1	Grade 3	19
Cohort 2	Grade 4	20
Cohort 3	Grade 5	18
Cohort 4	Grade 6	13
	Grade 7	19
	Grade 8	19
	Grade 9	10
	Grade 10	6
	Grade 11	2
	Grade 12	0
	Total	183

Housing and Comparison groups in Year 1 (2007). As can be seen in Table 1, the Supportive Housing Group consisted of a slightly higher proportion of American Indian and White students, and a slightly lower proportion of Black students than the Comparison Group. In addition, the Supportive Housing Group consisted of a slightly older population (more middle-school and fewer elementary school children) than did the Comparison Group. Chi-Square tests for demographic variables, like gender, ethnicity, and IEP, indicated no difference between the Supportive Housing group and its comparison (Chi-Square=.124, df=1, p=.725; Chi-Square=.911, df=4, p=.923; Chi-Square=8.124, df=4, p=.087, respectively).

Table 1.
Characteristics of the Supportive Housing Total (N=313), Supportive Housing Cohort Groups (N=70), and Comparison group (n=342)

	Supportive Housing Group Total		Supportive Housing Group Cohort Groups		Comparison Group Total	
	N	Percent	N	Percent	N	Percent
Gender						
Male	157	50.2	36	51.4	168	49.1
Female	156	49.8	34	48.6	174	50.9
Ethnicity						
American Indian	41	13.1	8	11.4	29	8.5
Asian/Pacific Islander	12	3.8	3	4.3	16	4.7
Hispanic	12	3.8	2	2.9	11	3.2
Black	158	50.5	42	60	220	64.3
White	90	28.8	15	21.4	66	19.3
Grade						
Pre-K	34	1.0				
Grade 1	25	8.0				
Grade 2	18	5.8				
Cohort 1 [Grade 3]	35	11.2	19	27.1	89	26
Cohort 2 [Grade 4]	32	10.2	20	28.6	83	24.3
Cohort 3 [Grade 5]	36	11.5	18	25.7	95	27.8
Cohort 4 [Grade 6]	29	9.3	13	18.6	75	21.9
Grade 7	30	9.6				
Grade 8	32	10.2				
Grade 9	19	6.1				
Grade 10	11	3.5				
Grade 11	3	1.0				
Grade 12	0	0.0				
Grade Repetition	11	3.5	2	2.9	10	2.9
IEP	49	15.7	22	31.4	80	23.4

Educational Outcome Measures

MARSS data included comprehensive student data, such as attendance days, race/ethnicity, an economic indicator, special education status, disability, home primary language, limited English Proficiency, and other student characteristics. MCA II data included data from a high-stake statewide and compulsory test in Minnesota, which measures student levels of proficiency in math, reading, and science. MCA II assesses students in reading in grades 3 through 8 and grade 10, in math in grades 3 through 8 and grade 11, and in science in grades 5, 8, and in the year in high school when students finish a life science course (MDE, 2011). The merged MARSS and MCA II data provided information about student attendance, school mobility, special education status, and MCA II achievement levels.

ATTENDANCE

School attendance contributes significantly to achievement and educational attainment. Attendance, or lack thereof, is also closely associated with involvement in child welfare, as students, aged five to eleven, who miss more than the allotted seven unexcused absences in Minnesota are required to be reported to child protective services (Maltreatment of Minors Act, 1993). Within MARSS, the attendance rate for each student was derived by totaling the Average Daily Attendance (ADA, the days the student actually attended) and dividing it by the total Average Daily Membership (ADM,; the required days of enrollment) for each student. Use of this ratio as opposed to another measure of attendance allowed for comparisons of students across school districts whose school year lengths vary in Minnesota. The attendance ratio could range from .01 (very low, or almost no attendance) to 1.0 (perfect attendance). Improvement in attendance was defined as an increase in the ratio of attendance from 2007 to 2009 and recoded into a binary (1=yes, 0=no) variable.

INDIVIDUALIZED EDUCATION PLAN (IEP)

An IEP is a written commitment of resources and a management tool that enables students with disabilities to receive needed special education and related services in a way that is appropriate to their unique learning needs (IDEA, 1997). In MARSS, the Special Education Evaluation Status code (1=yes, 0=no) was used to identify students receiving special education services via an IEP.

> School mobility is an important indicator in predicting academic attendance and achievement, as students who have high mobility may miss school and/or educational content with each move.

MCA II: STUDENT ACHIEVEMENT LEVELS

A student's achievement level on the MCA-II falls into one of four categories: "Does Not Meet Standards," "Partially Meets Standards," "Meets Standards," and "Exceeds Standards." Among them, the "Meets Standards" and "Exceeds Standards" are considered proficient. In this study, student achievement was recoded into a binary proficiency variable (1=proficient, 0=not proficient) and considered as a key outcome.

SCHOOL MOBILITY

School mobility is an important indicator in predicting academic attendance and achievement, as students who have high mobility may miss school and/or educational content with each move. Therefore, school mobility was calculated using the Status End code in MARSS, which includes a transfer indicator. The total number of school transfers was calculated for each student in a given school year.

Child Protection Outcome Measures

Child Protection Involvement

Three indicators were developed to measure child protection involvement for 2007, 2008, and 2009: 1) involvement in a child protection report for a specified year (coded as a binary variable, 1=yes, 0=no), 2) the number of accepted reports in which a child was involved, and 3) the number of children experiencing an out-of-home placement. Accepted reports and alleged child maltreatment can receive either a Family Assessment response or a Family Investigation response from the local child protective services agency. Reports made to local child protective service agencies are first screened to determine whether they meet the criteria to be assigned for a child protection response. Once a report is accepted, it is assigned to one of two response types – Family Investigation or

> GEE was used to determine whether the Supportive Housing Service and the Comparison groups' child well-being outcomes were changing at different rates over time.

Family Assessment. Reports of child maltreatment that allege substantial child endangerment must receive an investigation. Depending on the circumstances of a report, the local child protection agency may also decide to assign a report not involving substantial child endangerment for an investigation. Reports that do not allege substantial child endangerment may receive a Family Assessment, which is the preferred response to reports not alleging substantial child endangerment. The total number of reports, whether Family Investigation or Family Assessment, was summed to calculate the number of reports in which a child was involved.

It is also important to note that children in out-of-home placement may have been placed there for reasons other than maltreatment (e.g., via juvenile justice) since most children who were involved in an investigation/assessment of child maltreatment did not enter out-of-home placement. All out-of-home placements were summed for this analysis, regardless of whether they originated in child protection or elsewhere.

Analysis

All children in Supportive Housing Cohorts received supportive housing services from September 2006 to August 2007, when they were in grades 3-6. (Children in these cohorts may have continued to receive supportive housing services after the study timeframe ended.) Those 3rd, 4th, 5th, and 6th graders were tracked for three years. During the 2008-09 school year, they were respectively 5th, 6th, 7th, and 8th graders. Outcomes in 2007 were considered independent variables in the analysis while 2008 and 2009 outcomes served as dependent variables. Two-year data sets were analyzed using Generalized Estimating Equations (GEE). The GEE approach is a statistical method to analyze longitudinal data, especially when dependent variables are binary or continuous (Liang & Zeger, 1986). This analysis was specifically chosen to allow for the investigation of changes in outcomes over time in response to receipt of supportive housing services. In other words, GEE was used to determine whether the Supportive Housing Service and the Comparison groups' child well-being outcomes were changing at different rates over the two-year investigation period. In the result section of this report, a significant association or significant *p-value* indicated that the two-year child well-being outcomes were dependent on the receipt of supportive housing services. Analyses of changes between 2007 and 2009 outcomes were not conducted, as it was not known whether children in the comparison group experienced homelessness during 2007. Descriptive and chi-square analyses were also conducted to answer research questions when appropriate.

RESULTS

School Mobility

Changes in school mobility of the Supportive Housing and Comparison groups were examined to identify any relationship between receipt of supportive housing services and school mobility. Table 2 provides average school mobility between Supportive Housing and Comparison cohorts over time (. Results revealed a general trend of decreasing school mobility over time for students receiving supportive housing services, a significant difference between the Supportive Housing cohorts' and comparison cohorts' school mobility rates over time (see Appendix 1). In other words, after adjusting for 2008 and 2009 school mobility outcome data and controlling for 2007 school mobility outcome, the school mobility rate for those who were in the Supportive Housing group in Cohort 3 decreased by .41, when compared to those who were in the Comparison group in the Cohort 3.

Results also revealed that while the Supportive Housing group's school mobility generally declined over time except Cohort 4, the same was not true of the Comparison Group (see Figure 2). School mobility in the Comparison Group increased over time for all cohorts.

TABLE 2.
DIFFERENCES IN AVERAGE SCHOOL MOBILITY FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON COHORTS (N=342) OVER TIME

	Supportive Housing				Comparison			
	N	2007	2008	2009	N	2007	2008	2009
Cohort 1 [Grade 3]	19	0.94	0.63	0.58	89	0.49	0.39	0.63
Cohort 2 [Grade 4]	20	0.84	0.60	0.15	83	0.54	0.28	0.59
Cohort 3 [Grade 5]*	18	0.88	0.67	0.44	95	0.46	0.57	0.73
Cohort 4 [Grade 6]	13	0.46	0.77	0.69	75	0.62	0.57	0.91

Note. Missing values were excluded when calculating percentages. $p<.05$

FIGURE 2.
CHANGES IN AVERAGE SCHOOL MOBILITY OVER TIME FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON GROUPS (N=342)
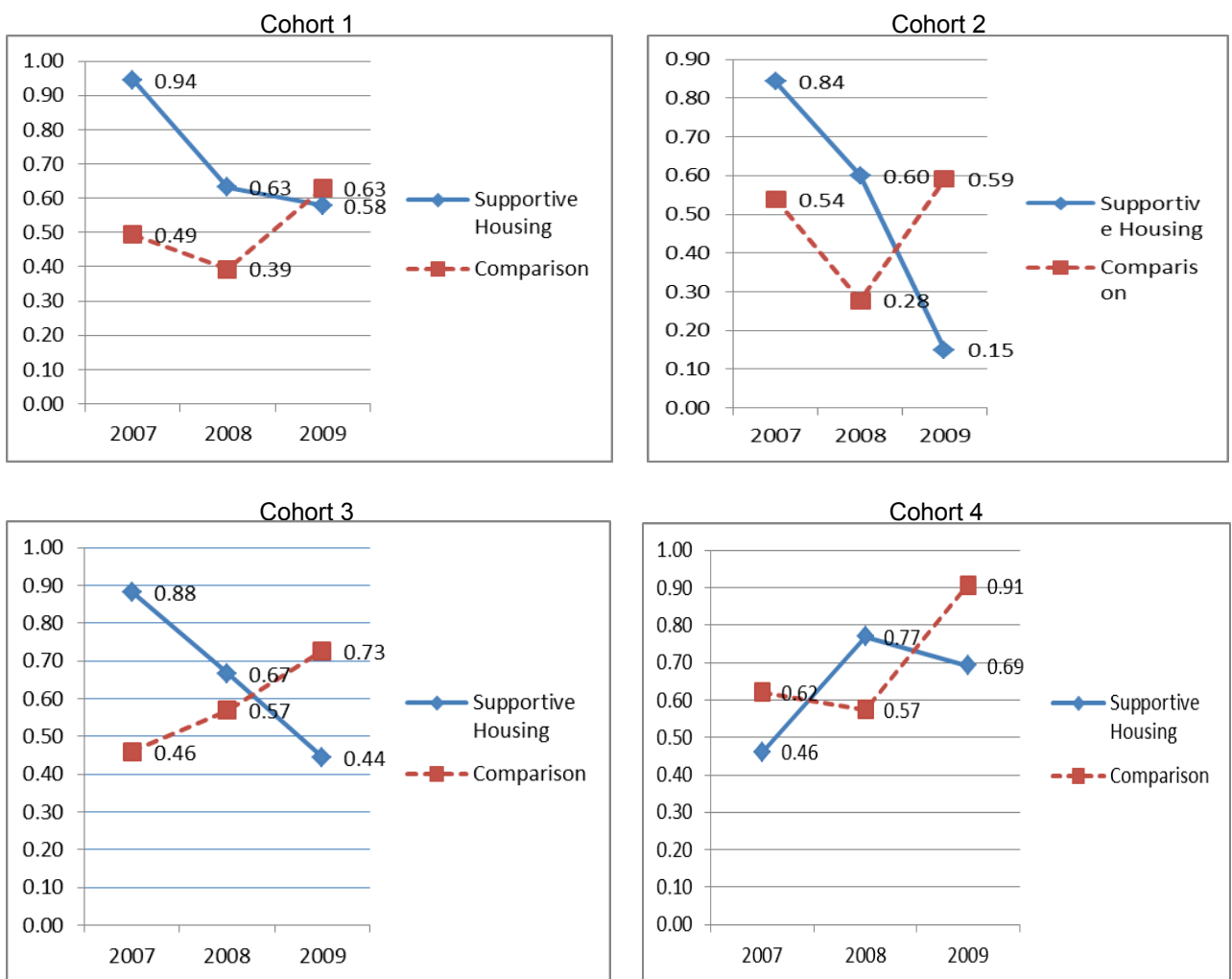
Attendance

Average attendance for each of the four cohort groups was calculated and examined over a period of three years. Table 3 summarizes student attendance rates across the Supportive Housing and Comparison cohorts over time. Results revealed that the Supportive Housing cohorts' attendance rates were generally higher than those of the Comparison cohorts in 2008; mixed results were found in 2009. Results of GEE analysis revealed the Supportive Housing group's attendance rate over time was significantly different from its comparison group in Cohort 4 (see Appendix 1),

Further analysis of Cohort 4 revealed that while overall attendance rates within the Comparison group declined sharply over time, the same was not true for the Supportive Housing group (see Figure 3). Cohort 4's attendance rates in the Supportive Housing group decreased at much lower rates than that in the comparison group.

TABLE 3.
DIFFERENCES IN ATTENDANCE RATES FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON COHORTS (N=342) OVER TIME

	Supportive Housing				Comparison			
	N	2007	2008	2009	N	2007	2008	2009
Cohort 1	19	89.6%	89.5%	88.3%	89	89.0%	88.6%	88.9%
Cohort 2	20	91.3%	91.8%	87.3%	83	88.7%	88.8%	86.7%
Cohort 3	18	90.1%	89.4%	84.0%	95	90.4%	88.6%	87.7%
Cohort 4*	13	87.4%	90.1%	89.9%	75	89.8%	85.4%	84.1%

Note. Missing values were excluded when calculating percentages   *p<.05

FIGURE 3.
CHANGES IN ATTENDANCE RATES OVER TIME FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON COHORTS (N=342) OVER TIME

Cohort 1

Cohort 2

Cohort 3

Cohort 4
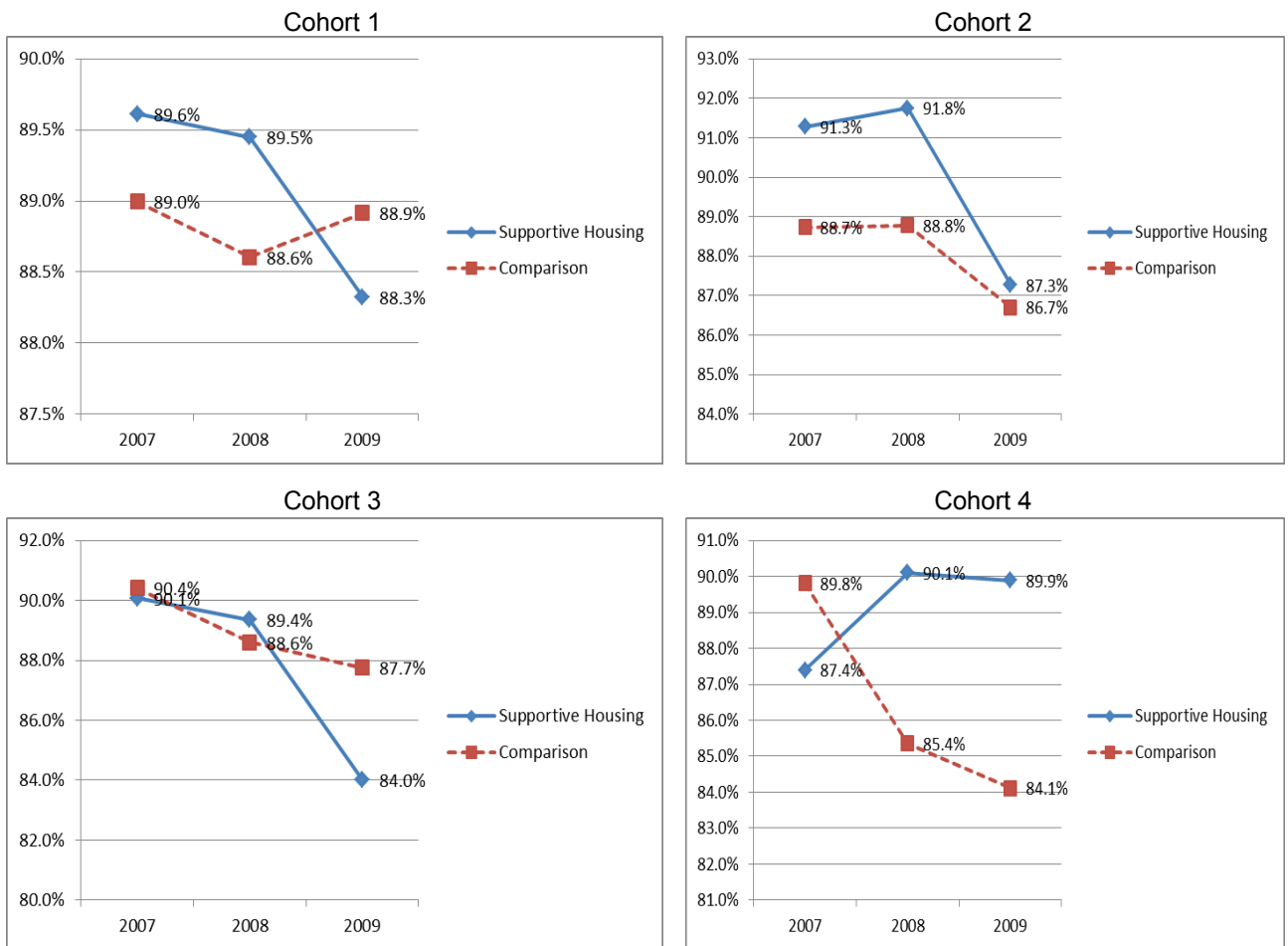
Academic Achievement

MCA II-Reading

To investigate whether receipt of supportive housing services was associated with academic achievement, comparisons between the proportion of students passing the MCA II in the Supportive Housing and Comparison Cohorts were made. Results revealed mixed findings. Table and Figure 4 provide the proportion of students who were proficient in MCA II-Reading across cohorts. Although higher percentages of students passed the MCA II-Reading in the majority of Supportive Housing Cohort groups than Comparison groups, none of the GEE analyses showed a significant relationship between receipt of supportive housing services and performance on the MCA II-Reading over time (see Appendix 1). For Cohort 2, the percentage of students receiving supportive housing services who passed the MCA II-Reading increased over time. However, the result of GEE analysis indicated that this increase was not statistically significant.

TABLE 4.
DIFFERENCES IN PROPORTION OF STUDENTS PASSING
MCA II-READING FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON
COHORTS (N=342) OVER TIME

	Supportive Housing				Comparison			
	N	2007	2008	2009	N	2007	2008	2009
Cohort 1	19	38.9%	26.3%	21.1%	89	38.9%	55.2%	37.3%
Cohort 2	20	50.0%	47.4%	52.9%	83	33.3%	36.4%	35.1%
Cohort 3	18	23.5%	23.5%	21.4%	95	36.6%	33.7%	25.6%
Cohort 4	13	33.3%	25.0%	15.4%	75	32.1%	21.2%	33.3%

*Note. Missing values were excluded when calculating percentages *p<.05*

FIGURE 4.
PERCENTAGES OF STUDENTS PASSING MCA II-READING FOR SUPPORTIVE
HOUSING (N=70) AND COMPARISON GROUPS (N=342)

Cohort 1

Cohort 2
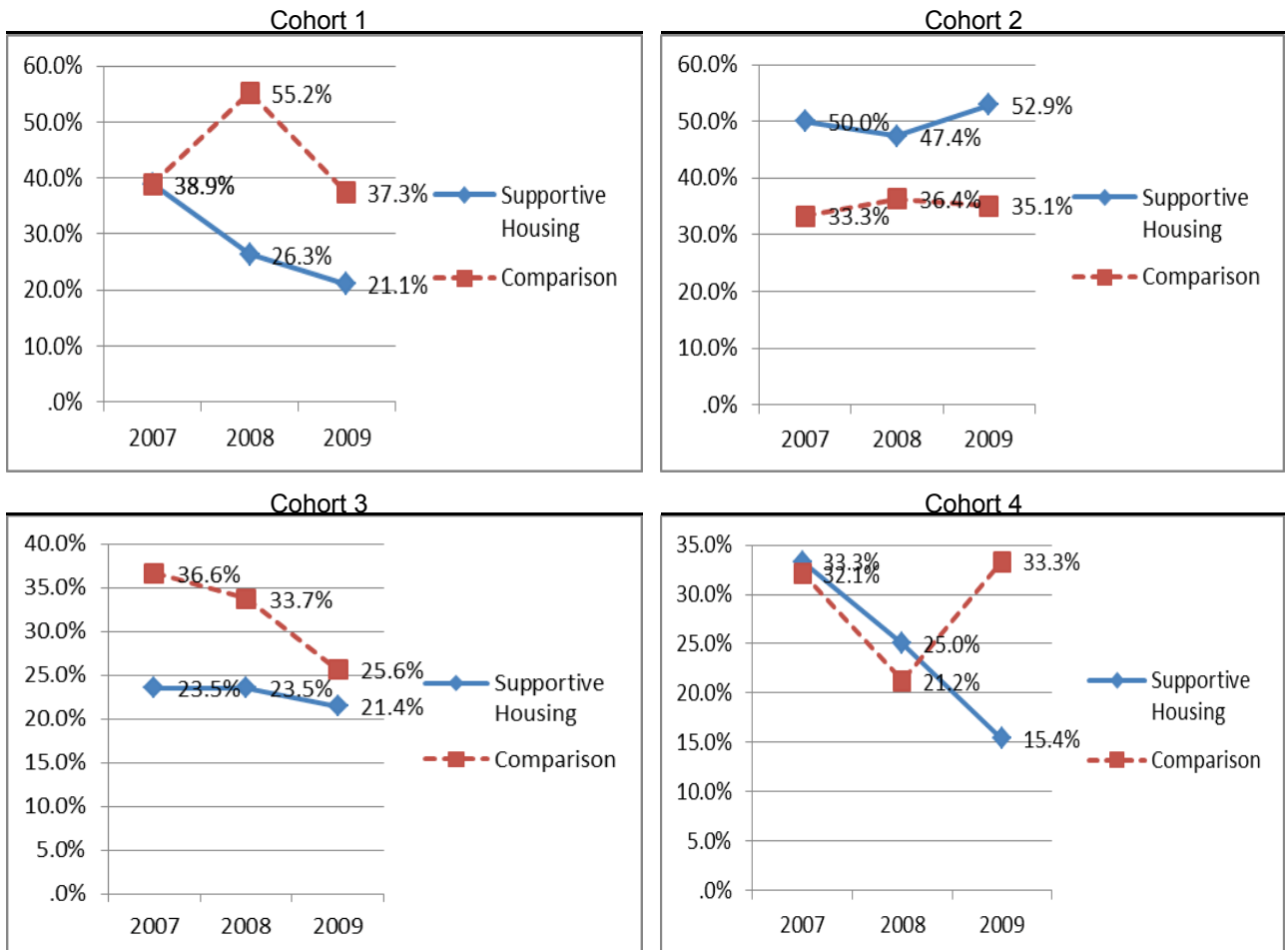
Cohort 3

Cohort 4

MCA II-Math

Mixed trends were found for MCA II-Math performance for both the Supportive Housing and Comparison groups. Table 5 provides the proportion of students who were proficient in MCA II-Math across Cohorts over time. A significant difference between one Supportive Housing Cohort, Cohort 2, and its comparison group was found. In other words, receipt of supportive housing services was positively associated with MCA II-Math Performance for Cohort 2. Proficiency rates were higher for students receiving supportive housing services than for comparison students in this particular cohort. However, for other cohorts, results were mixed and none of them showed a statistically significant difference.

For Cohort 2, the number of students who were proficient in MCA II-Math slightly increased from 2007 to 2009, while its Comparison group presented a sharp decrease (see Figure 5).

TABLE 5.
DIFFERENCES IN PROPORTION OF STUDENTS PASSING MCA II-MATH FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON COHORTS (N=342) OVER TIME

	Supportive Housing				Comparison			
	N	2007	2008	2009	N	2007	2008	2009
Cohort 1	19	47.1%	33.3%	16.7%	89	45.0%	25.7%	25.7%
Cohort 2*	20	29.4%	33.3%	31.3%	83	30.5%	18.9%	16.9%
Cohort 3	18	11.8%	12.5%	0.0%	95	18.3%	25.9%	21.3%
Cohort 4	13	10.0%	27.3%	18.2%	75	18.9%	12.7%	16.4%

*Note. Missing values were excluded when calculating percentages   *p<.05*

FIGURE 5.
CHANGES IN MCA II-MATH PROFICIENCY RATES OVER TIME FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON GROUPS (N=342)
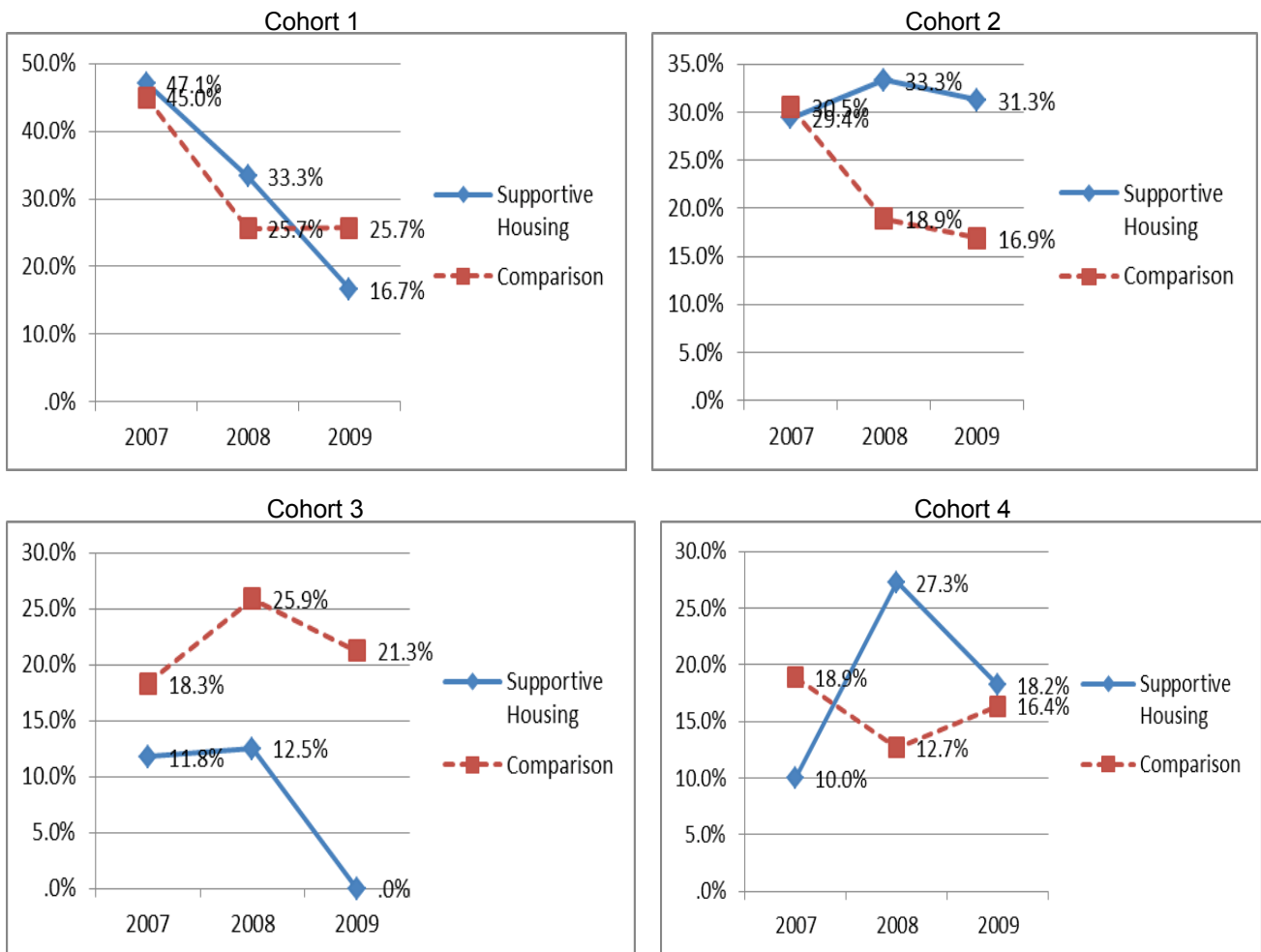
Individualized Education Program

Descriptive analysis was used to examine the proportion of students having an IEP on file at school for those students receiving supportive housing services and the comparison group. The proportion of students with an IEP increased over time for students with and without supportive housing service receipt (see Table 6). None of the GEE analyses showed a significant relationship between receipt of supportive housing services and the proportion of students with IEPs. Although, differences between two groups were not statistically significant when controlling for the number of students with an IEP in 2007, Figure 6 reveals that the number of students with an IEP in the supportive housing group increased at higher rates than that in the Comparison group.

Table 6.
Differences in average number of students with IEPs for Supportive Housing (n=70) and Comparison cohorts (n=342) over time

	Supportive Housing				Comparison		
	N	2007	2008	2009	N	2007	2008	2009
Cohort 1	19	15.4%	21.1%	40.0%	89	16.9%	22.5%	25.3%
Cohort 2	20	16.7%	45.0%	38.9%	83	17.7%	25.3%	22.1%
Cohort 3	18	30.0%	27.8%	38.5%	95	16.9%	18.9%	30.7%
Cohort 4	13	11.8%	30.8%	31.6%	75	13.5%	28%	23.4%

Note. Missing values were excluded when calculating percentages   *p<.05

Figure 6.
Changes in Special Education status over time for Supportive Housing (n=70) and Comparison groups (n=342)
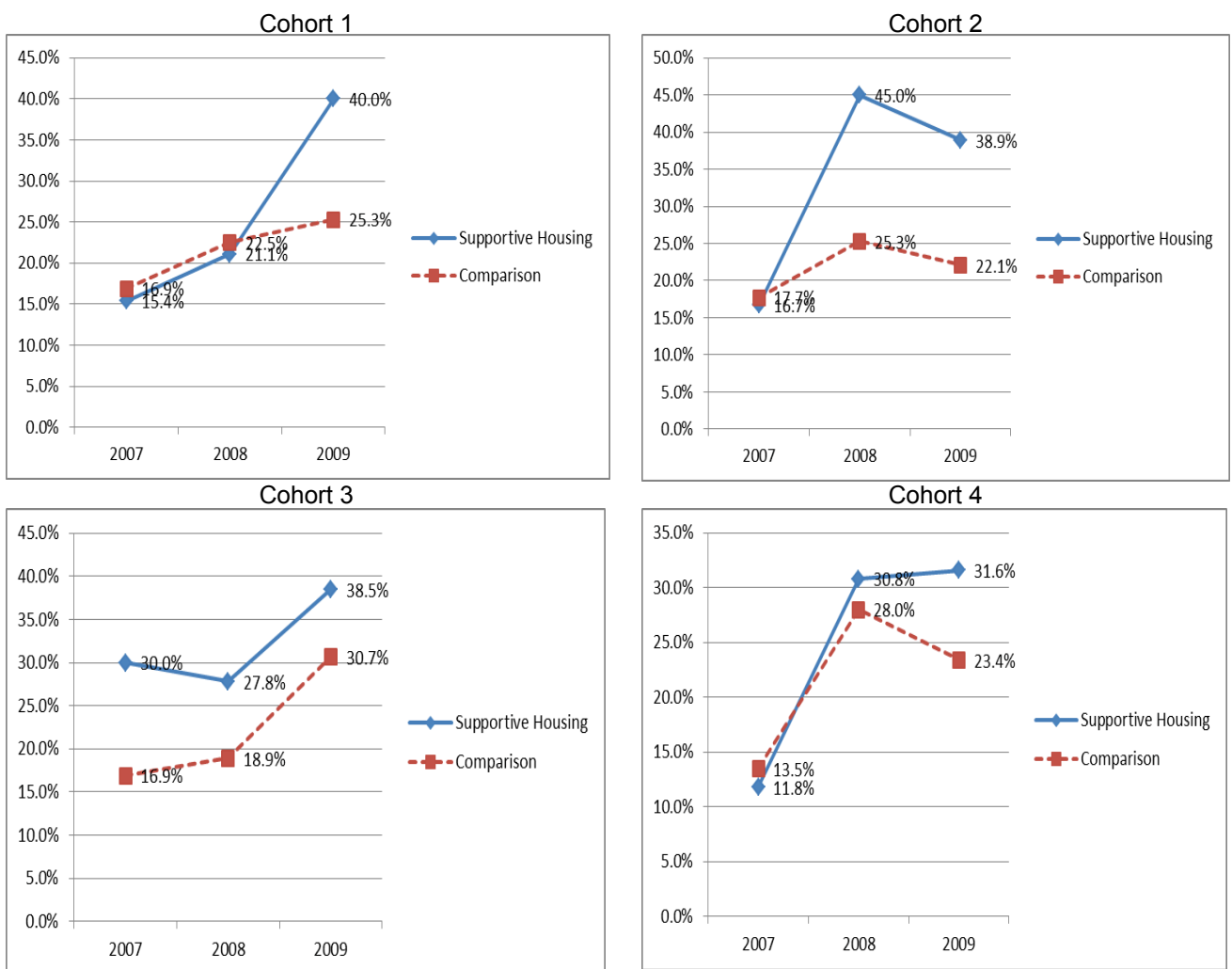
Child Protection Involvement

To investigate potential associations between receipt of supportive housing services and child protection involvement, the proportion of children involved in a child protection (CP) report, the total number of CP reports, and the proportion of children in out-of-home placement were compared for the Supportive Housing and Comparison groups over time. For this cohort group analysis, a total of seven children (10%) from the Supportive Housing group were involved in at least one accepted report of child maltreatment between 2007 and 2009, whereas 27 children (8%) in the Comparison group had at least one accepted report of child maltreatment during the same time period. Descriptive statistics were primarily used to describe differences between two groups; GEE analysis was not adopted because of a small sample size. Child protection involvement outcomes can be found in Table and Figure 7.

TABLE 7.
DESCRIPTIVE INFORMATION ABOUT THE NUMBER OF STUDENTS WITH CHILD PROTECTION INVOLVEMENT FOR SUPPORTIVE HOUSING (N=70) AND COMPARISON (N=342) COHORTS OVER TIME

	Supportive Housing (2007-2009)		Comparison (2007-2009)	
	N	%	N	%
# of students with CP Involvement*				
2007	6	8.6	8	2.3
2008	3	4.3	12	3.5
2009	1	1.4	10	2.9
# of CP Report (duplicated)**				
2007	7	58.3	15	33.3
2008	3	25	20	44.4
2009	2	16.7	10	22.2
# of CP Reports Determinations (duplicated)**				
2007	4	33.3	6	13.3
2008	2	16.7	12	26.7
2009	1	8.3	8	17.8
# of Children with Out-of-Home Placement				
2007	2	2.9	4	1.2
2008	0	0	8	2.3
2009	1	1.4	8	2.3

As can be seen in Table and Figure 7, the Supportive Housing group started out with higher rates of child protection involvement than the Comparison group. However, while child protection involvement decreased overall between 2007 and 2009 for the Supportive Housing group (from approximately (9% to 1%), the same was not true of the Comparison group (whose involvement rates increased from approximately 2% to 3%). This pattern was evident across measures of child protection involvement with the exception of number of CP reports.

Under the investigation period, it appeared that the number of children with CP involvement, the number of CP reports, and the number of accepted child maltreatment reports with determination in which children were involved decreased sharply each year for the Supportive Housing group, whereas these measures of child protection involvement for children in the Comparison group fluctuated over time. Out-of home placements decreased by approximately 50% over time for the Supportive Housing group, but they increased by approximately 50% for the Comparison group.

FIGURE 7.
CHANGES IN THE PROPORTION OF CHILDREN INVOLVED IN CHILD PROTECTION OVER TIME FOR THE SUPPORTIVE HOUSING (N=70) AND COMPARISON GROUPS (N=342)
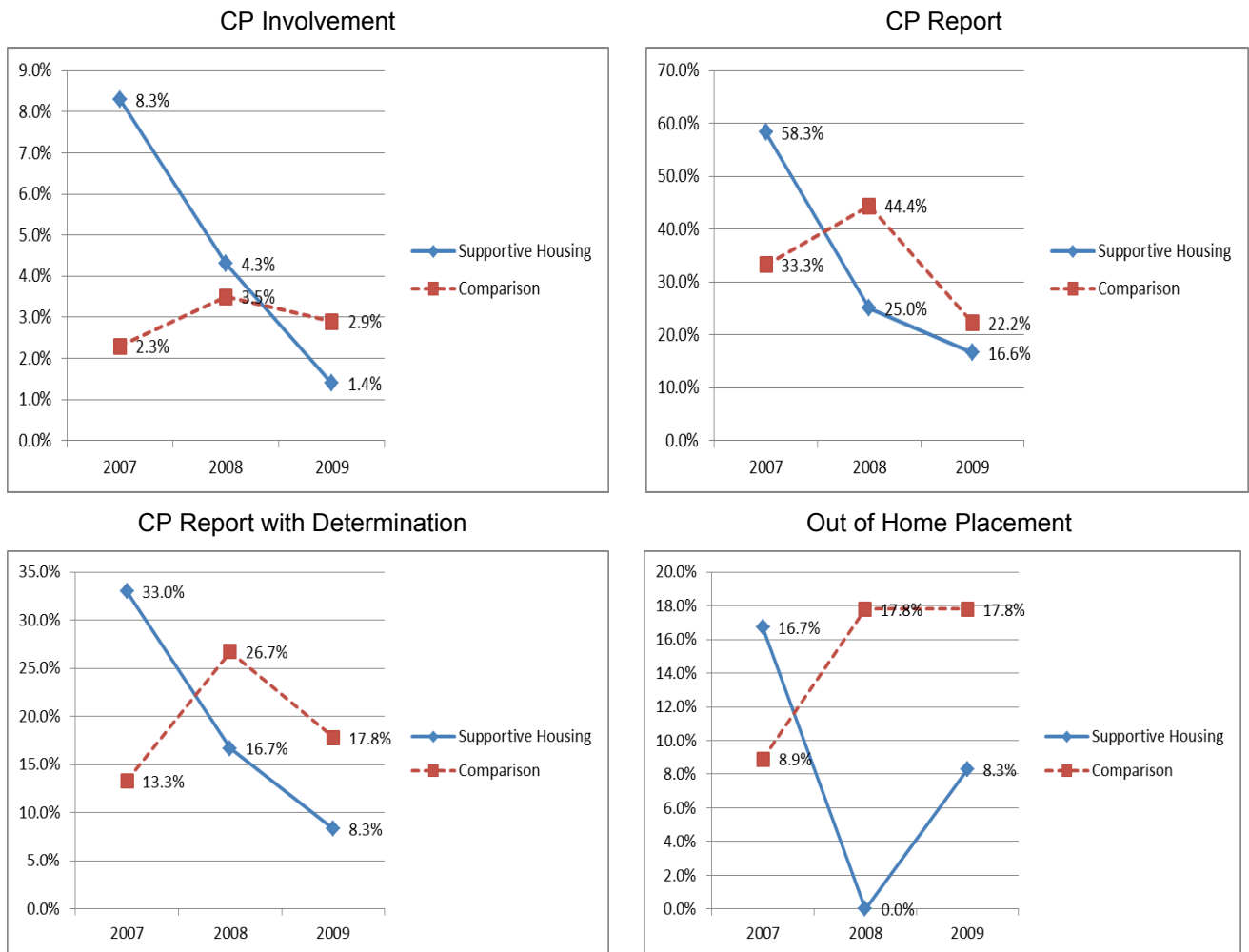
CONCLUSION

This study was conducted to explore the relationship between receipt of supportive housing services and children's well-being. Specifically, this study investigated the impact of supportive housing services on children's educational and child welfare outcomes, including school mobility, school attendance, student MCA-II performance, having an IEP, and involvement in child welfare. Evaluations of the effectiveness of supportive housing services on child well-being

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Findings revealed that supportive housing services had positive impacts on child well-being across most educational and child welfare outcomes.

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are few, and most focus on children's mental health outcomes (e.g., Farrell, Britner, Guzzardo, & Goodrich, 2010; Gewirtz, DeGarmo, Plowman, August, & Realmuto, 2009; Gewirtz, Hart-Shegos, & Medhanie, 2008). The current study represents the first longitudinal evaluation of supportive housing services on homeless children's educational and child welfare outcomes using a matched comparison group of homeless peers.

Findings revealed that supportive housing services had positive impacts on child well-being across most educational and child welfare outcomes. Positive effects of receipt of supportive housing services were found in school mobility (i.e., less mobility indicated school stability for youth), school attendance, IEP status, math achievement, and child protection involvement, even though levels of significance were not reached for all cohort groups/grades. In particular, significant effects revealed that fifth grade students receiving supportive housing services showed less school mobility than their homeless peers. Sixth grade students receiving supportive housing services attended school at significantly higher rates than students from the Comparison group and more fourth

grade students receiving supportive housing services were proficient at MCA II-Math than students from the Comparison group. Other cohorts/grades showed similar patterns, though a level of significance was not reached. In addition, the number of students with an IEP on file increased over the years for students receiving supportive housing services, possibly suggesting that existing disabilities are being diagnosed due to reduced school mobility, increased attendance, or educational supportive advocacy by family case workers within supportive housing programs. These increases could be also explained by an increasing number of students diagnosed with specific learning disabilities with increasing age (see Appendix 2). In special education, specific learning disabilities may not be apparent early in student performance in academic subjects. As these disabilities become noticeable and evident over the course of 5th and 6th grade, the number of students with specific learning disabilities may increase.

Positive outcomes were suggestive of a possible association between supportive housing services and student school mobility (i.e., school stability) that leads to enhanced student learning in schools. However, effects were not seen across all grades. Mixed findings may be a result of some limitations of the current study and general trends in educational research. For example, in education, Comprehensive School Reform efforts and achievement demonstrated mixed results across different grades, poverty levels, student ethnic groups, fidelity of implementation, schools, and other indicators. However, schools in the Comprehensive School Reform efforts showed strong effects across different poverty levels when they were implemented for 5 years or more (Borman, Hewes, Overman, & Brown, 2003). Thus, although mixed results are common in educational studies, the results shed light on the need for an extended longitudinal approach to support a relationship between supportive housing and school outcomes.

In addition, a lack of support for increased attendance for children receiving supportive housing services may be due to use of the McKinney Vento Homeless Assistance Act in Minnesota. In Minnesota, the McKinney Vento Liaison program works hard at ensuring transportation is provided from shelter and other temporary locations. Therefore, differences in attendance rates over time may not be an issue that needs further investigation in Minnesota.

It is also important to note that children receiving supportive housing services had declining levels of child protection involvement while their homeless peers showed no reduction in child protection involvement over time. Children receiving supportive housing services had declining involvement in child maltreatment reports, determinations of maltreatment, and out-of-home placements, whereas their homeless peers had *increasing* involvement in these areas over time. Though a small sample size limited the analysis that could be conducted, descriptive analysis suggests that supportive housing services are beneficial in reducing children's need for public child welfare system intervention.

These findings are consistent with the focus of services provided to the Supportive Housing group through Hearth Connection. At Hearth Connection, a primary focus is providing permanent, stable housing for all enrolled families. Families also then receive other social services from which they may benefit. It is hypothesized that the reduction of school mobility for the Supportive Housing group is a direct effect of housing service receipt, which also is presumed to have an impact on student attendance (e.g., Crowley, 2003). Once students are attending school on a regular basis, researchers theorize that students may come to the attention of educators, which then leads to increased rates of referral to special education, receiving an IEP, and academic achievement. Other

supportive services provided in the Supportive Housing model are presumed to assist with both academic and child welfare outcomes.

It is important to note that although the study used a multi-systemic view to understand the impact of supportive housing services on children's well-being, important limitations exist. First, sample sizes in each cohort group were too small to identify any possible mediation that might cause an indirect effect on the observed relationships. Such mediation can be identified by examining changes in family structures and

> It is important to note that although the study used a multi-systemic view to understand the impact of supportive housing services on children's well-being, important limitations exist.

systems that are the central focus of momentum in human development (Bronfenbrenner, 1979). Information about family structures and systems may include parenting skills, parent's education level, school-level data, child cognitive functioning, and certain types of child welfare services provided to families. Second, compared to the Supportive Housing Group, the history of homeless children in the Comparison group was not available in 2007. Therefore, only the Comparison group's homeless data in 2008 and 2009 was used. This raises a question about the equality of variances in different samples since homogeneity of variance is critical in comparing two different groups in inferential statistics. Finally, this study utilized a three year longitudinal analysis design. As noted previously, direct effects of service receipt for children in supportive housing may have been more evident than indirect effects, such as academic achievement.

RECOMMENDATIONS

Findings of this study lead to recommendations for future research as well as important policy implications. First, additional research is needed to develop more rigorous approaches to understand the effect supportive housing services have on children's well-being. Further investigations could include families' histories of homelessness, larger sample sizes, experimental designs, and advanced methodologies in statistics to identify mediator variables and moderators that may help explain differences in outcomes that may be attributed to receipt of supportive housing services. Additionally, it will be important to understand the impact of supportive housing on children's well-being as compared to other types of housing service receipt, such as emergency and transitional housing services. Finally, future research is also needed to investigate the association of supportive housing on older youth's well-being, particularly now, given the federal initiative to provide services and supports to youth aged 18-21 and to track the well-being of those youth who experience out-of-home care.

Findings also reveal implications for policy at the local and national level. At the local level, agencies providing supportive housing services may want to consider the array of services offered to families they serve. Though a focus on providing housing services is critical, additional services targeted toward child well-being may be warranted, especially as they pertain to academic achievement. Inclusion of tutoring services and increased access to academic resources (such as computers, printers, etc.) may assist children in their academic achievement leading to lower rates of grade retention and higher rates of graduation. Agencies and schools may also wish to re-consider how they collaborate. Stronger communication between school systems and supportive housing services will allow both parties a better understanding of children's contexts, which may impact student well-being. In addition, since the population of families served by supportive housing agencies is comprised largely of specific cultural groups, agencies may wish to consider partnering with culturally-specific service providers to assist children in their academics.

> Due to the increasing number of children and families who struggle with homelessness and the indication from the findings of this study supporting the benefit of supportive housing receipt, it will be important for policymakers to find ways to increase or maintain funding avenues for the provision of supportive housing services.

At the national level, several recommendations also come to light. First, due to the increasing number of children and families who struggle with homelessness and the indication from the findings of this study supporting the benefit of supportive housing receipt, it will be important for policymakers to find ways to increase or maintain funding avenues for the provision of supportive housing services. Funding allocated to the provision of supportive housing services may reduce the need for other, more costly services (such as child protection interventions, juvenile justice, etc.) and may improve the efficiency for enrolling eligible children in IEPs. Finally, increased funding for educational specialists to work with homeless families entering housing assistance programs may alleviate some of the negative effects of homelessness on children's well-being, particularly in the educational system. A long-term sustainable service to homeless students may play key a role in building strong relationships among supportive housing and child welfare and academic outcomes for homeless children.

REFERENCES

Anooshian, L.J. (2005). Violence and aggression in the lives of homeless children: A review. *Aggression and Violent Behavior, 10,* 129-152.

Borman, G., Hewes G., Overman, L., & Brown, S. (2003). Comprehensive school reform and achievement: A meta-analysis. *Review of Educational Research,* 73, 2, 125-230.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments in nature and design.* Cambridge, MA: Harvard University Press.

Buckner, J.C. (2004). Children, Impact of Homelessness on. In Levinson, D. (ed.), Encyclopedia of Homelessness, Vol 1. Thousand Oaks, CA: Berkshire Publishing Group.

Buckner, J. C., Bassuk, E. L., & Weinreb, L. F. (2001). Predictors of academic achievement among homeless and low-income housed children. *Journal of School Psychology, 39,* 45-69.

Burt, M. R. (1999). *Demographics and geography: Estimating needs.* In Fosburg, L. B., & Dennis, D. L. (eds.), Practical Lessons: The 1998 National Symposium on Homelessness Research. Washington, DC: U.S. Department of Housing and Urban Development and U.S. Department of Health and Human Services. 1:1–1:24. August.

Crowley, S. (2003). The affordable housing crisis: Residential mobility of poor families and school mobility of poor children. *Journal of Negro Education, 72*(1), 22-38.

Culhane, J. Webb, D., Grim, S., Metraux, S., & Culhane, D. (2003). Prevalence of child welfare services involvement among homeless and low-income mothers: A five-year birth cohort study. *Journal of Sociology and Social Welfare,* (3), 79-97.

Duffield, B., & Lovell, P. (2008). *The economic crisis hits home: The unfolding increase in child & youth homelessness. The National Association for the Education of Homeless Children and Youth and First Focus.* December, 2008. Retrieved on September 8, 2011 from http://www.firstfocus.net/Download/TheEconomicCrisisHitsHome.pdf

Farrell, A. F., Britner, P. A., Guzzardo, M., & Goodrich, S. (2010). Supportive housing for families in child welfare: Client characteristics and their outcomes at discharge. *Children and Youth Services Review, 32*(2), 145-154.

Gewirtz, A. H., DeGarmo, D. S., Plowman, E. J., August, G., & Realmuto, G. (2009). Parenting, parental mental health, and child functioning in families residing in supportive housing. *American Journal of Orthopsychiatry, 79*(3), 336-347.

Gewirtz, A. H., Hart-Shegos, E., & Medhanie, A. (2008). Psychosocial status of homeless children and youth in family supportive housing. *American Behavioral Scientist, 51*(6), 810-823.

Harburger, D. S., & White, R. A. (2004). Reunifying families, cutting costs: housing-child welfare partnerships for permanent supportive housing. *Child Welfare, 83*(5), 493-508.

Individuals with Disabilities Education Act (IDEA) Amendments of 1997, 20 U.S.C. 1414(d) (Supp. III 1997)

Larson, A. M., & Meehan, D., M. (2011). Homeless and highly mobile students: A population-level description of the status of homeless students from three school districts. *Journal of Children and Poverty, 17*(2), 187-205.

Liang, K. Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika, 73,* 13-22.

Maltreatment of Minors Act. (1993), MN Stat. Ann. § 626.556 subd. 2.

Masten, A., Miliotis, D., Graham-Bermann, S., Ramirez, M., & Neemann, J. (1993). Children in homeless families: Risks to mental health and development. *Journal of Consulting and Clinical Psychology, 61,* 335-343.

Masten, A., Sesma, A., Si-Asar, R., Lawrence, C., Miliotis, D., & Dionne, J. (1997). Educational risks for children experiencing homelessness. Journal of School Psychology, 35, 27-46.

McKinney-Vento Homeless Assistance Act. (1987). Pub. L. 100-77, 101 Stat. 482, 42 U.S.C. § 11301

Minnesota Department of Education (MDE) (2011). MARSS Appendices. Retrieved September 3, 2011, from http://education.state.mn.us/MDE/Accountability_Programs/Program_Finance/MARSS_Student_Accounting/MARSS_Instruction_Manual/Appendices/index.html

National Alliance to End Homelessness (NAEH) (2011). State of homelessness in America 2011. Retrieved on September 2, 2011 from http://www.endhomelessness.org/content/article/detail/3668

National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP, 2010). *Registry Plus.* Retrieved on September 2, 2011 from http://www.cdc.gov/cancer/npcr/

National Center on Family Homelessness (2007). The Minnesota supportive housing and managed care pilot. Retrieved on September 2, 2011 from http://www.hearthconnection.org/files/Child%20Study%20%282007-02%29.pdf

Obradovic, J., Long, J. D., Cutuli, J. J., Chan, C.-K., Hinz, E., Heistad, D., & Masten, A. S. (2009). Academic achievement of homeless and highly mobile children in an urban school district: Longitudinal evidence of risk, growth, and resilience. *Development and Psychopathology, 21,* 493-518.

Park, J.M., Metraux, S., Brodbar, G., & Culhane, D.P. (2004). Child welfare involvement among children in homeless families. *Child Welfare, 83,* 423-436.

Rafferty, Y., & Rollins, N. (1989). *Learning in limbo: the educational deprivation of homeless children.* Long Island City, NY: Advocates for Children (ERIC Document Reproduction No. ED 312363).

Rafferty, Y., Shinn, M., & Weitzman, B. C. (2004). Academic achievement among formerly homeless adolescents and their continuously housed peers. *Journal of School Psychology, 42,* 179-199.

Rog, D. J., & Buckner, J. C. (2007). *Homeless Families and Children.* Paper presented at Toward Understanding Homelessness: The 2007 National Symposium on Homelessness Research. Retrieved on October 13, 2011 from http://aspe.hhs.gov/hsp/homelessness/symposium07/rog/

Rubin, D. H., Erickson, C. J., San Augustin, M., Cleary, S. D., Allen, J. K., & Cohen, P. (1996). Cognitive and academic functioning of homeless children compared with housed children. *Pediatrics, 87,* 289-294.

U.S. Department of Education. (2004). *Education for homeless children and youth program: Title VII B of the McKinney-Vento homeless assistance act, as amended by the No Child Left Behind Act of 2001.* Washington DC: US Department of Education.

U.S. Department of Housing and Urban Development (2008). *The Third Annual Homeless Assessment Report (AHAR) to Congress.*

U.S. Department of Housing and Urban Development (2010). *The 2009 Annual Homeless Assessment Report.*

Wilder Research (2010). *Homelessness in Minnesota 2009: Results of the Wilder statewide survey.* Retrieved on September 17, 2011 from http://wilder.org/download.0.html?report=2339

Zima, B., Wells, K., & Freeman, H. (1994). Emotional and behavioral problems and sever academic delays among sheltered homeless children in Los Angeles County. *American Journal of Public Health, 84,* 260-264.

Appendix 1.

The results of GEE analysis

Longitudinal Association Between School Mobility and Supportive Housing

	β	SE	95% Wald Confidence Interval	
			Lower	Upper
Cohort 1	-.06	.13	-.032	0.20
Cohort 2	-.09	.10	-0.29	0.10
Cohort 3*	-.41	.18	-0.76	-0.06
Cohort 4	-.03	.24	-0.49	0.43

*p<.05.

Longitudinal Association Between Attendance and Supportive Housing

	β	SE	95% Wald Confidence Interval	
			Lower	Upper
Cohort 1	.01	.02	-0.03	0.04
Cohort 2	.01	.02	-0.03	0.05
Cohort 3	.01	.02	-0.04	0.05
Cohort 4*	.08	.03	0.02	0.13

*p<.05.

Longitudinal Association Between Reading and Supportive Housing

	β	SE	95% Wald Confidence Interval	
			Lower	Upper
Cohort 1	-.07	.60	-1.25	1.11
Cohort 2	.49	.51	-0.52	1.50
Cohort 3	-.04	.81	-1.63	1.55
Cohort 4	.06	.83	-1.56	1.69

*p<.05.

Longitudinal Association Between Math and Supportive Housing

	β	SE	95% Wald Confidence Interval	
			Lower	Upper
Cohort 1	-.09	.35	0.17	1.55
Cohort 2*	-1.34	.63	-2.58	-0.10
Cohort 3	1.12	.85	-0.54	2.78
Cohort 4	-1.24	1.30	-3.78	1.30

*p<.05.

Longitudinal Association Between IEP and Supportive Housing

	β	SE	95% Wald Confidence Interval	
			Lower	Upper
Cohort 1	-.08	1.02	-2.08	1.91
Cohort 2	-.29	0.73	-1.72	1.15
Cohort 3	-1.10	0.69	-2.45	0.24
Cohort 4	-.29	0.67	-1.60	1.03

*p<.05.

APPENDIX 2.

Primary disability diagnoses for students receiving supportive housing services over time (n=70)

		2007		2008		2009	
		Number	Percent	Number	Percent	Number	Percent
Cohort 1	Non-disabled student	11	84.6%	14	73.7%	12	60.0%
	Speech/Language Impairment	1	7.7%	--	--	--	--
	Developmental Cognitive Disabilities: Mild-Moderate	--	--	--	--	--	--
	Physically Impaired	--	--	--	--	--	--
	Specific Learning Disabilities	1	7.7%	3	15.8%	6	30.0%
	Emotional/Behavioral Disorders	--	--	1	5.3%	2	10.0%
	Other Health Disabilities	--	--	1	5.3%	--	--
	Total	13	100%	19	100%	20	100%
Cohort 2	Non-disabled student	15	83.3%	11	55.0%	11	61.1%
	Speech/Language Impairment	1	5.6%	1	5.0%	--	--
	Developmental Cognitive Disabilities: Mild-Moderate	--	--	--	--	--	--
	Physically Impaired	--	--	--	--	--	--
	Specific Learning Disabilities	1	5.6%	6	30.0%	5	27.8%
	Emotional/Behavioral Disorders	--	--	2	10.0%	2	11.1%
	Other Health Disabilities	1	5.6%	--	--	--	--
	Total	18	100%	20	100%	18	100%
Cohort 3	Non-disabled student	14	70.0%	12	66.7%	8	61.5%
	Speech/Language Impairment	1	5.0%	--	--	1	7.7%
	Developmental Cognitive Disabilities: Mild-Moderate	--	--	4	22.2%	--	--
	Physically Impaired	--	--	--	--	--	--
	Specific Learning Disabilities	4	20.0%	2	11.1%	1	7.7%
	Emotional/Behavioral Disorders	1	5.0%	--	--	2	15.4%
	Other Health Disabilities	--	--	--	--	1	7.7%
	Total	20	100%	18	100%	13	100%
Cohort 4	Non-disabled student	15	88.2%	9	69.2%	13	68.4%
	Speech/Language Impairment	--	--	1	7.7%	--	--
	Developmental Cognitive Disabilities: Mild-Moderate	--	--	--	--	2	10.5%
	Physically Impaired	--	--	--	--	1	5.3%
	Specific Learning Disabilities	2	11.8%	1	7.7%	--	--
	Emotional/Behavioral Disorders	--	--	1	7.7%	2	10.5%
	Other Health Disabilities	--	--	1	7.7%	1	5.3%
	Total	17	100%	13	100%	19	100%

Note. The total numbers of students fluctuated because of student disruption.