Minn-LInK Child Welfare Special Topic Report No. 8

Are Attendance Gains Sustained? A follow-up on the educational and child welfare outcomes of students with child welfare involvement for educational neglect

Anita Larson
Timothy Zuel
Mira Swanson

Center for Advanced Studies in Child Welfare

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Minn-LInK

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 descriptive 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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Executive Summary

This report describes a longitudinal follow-up to a study of changes in school attendance for children whose families had contact with child welfare services four years earlier. The child welfare services children received were the result of reports for educational neglect to a social services agency, involving an array of services that depended upon severity and current policy. Some of these services were through an alternative response system (not requiring full investigation) and others moved on to investigation. The original study found the school attendance of 71.9% of children had improved one year after receiving some type of services. The goal of the current study was to determine whether and what extent these attendance gains were sustained over time. Findings indicate that children whose attendance initially improved one year after services generally maintained better attendance for up three years later compared to children whose attendance did not initially improve. Attendance improvements were better overall for the youngest children and additional reports to child welfare over the follow-up period appeared to have a protective effect on attendance, particularly for black students. This preliminary study prompts a number of important considerations for the most cost-effective services aimed at improving student attendance. We speculate that the relative success of services in improving school attendance for young children is due to the family-centered approach of child welfare that becomes less effective as children age and their spheres of influence become more complex and indirect.

Introduction

This study reexamines the school attendance and child welfare involvement of a group of students for whom a report of educational neglect was received by child welfare during the 2000-2001 school year in Minnesota. The majority of these students experienced a marked improvement in their school attendance in the year following their involvement with child welfare in 2002. Public education and child welfare records were reviewed for the four consecutive years following the initial study to explore whether and to what extent attendance improvements were sustained. In addition, data on a variety of student characteristics and experiences were obtained from administrative records to create a long-term perspective of the interactions between child welfare involvement and school attendance in particular, including general school outcomes. Policy implications are discussed, reviewing the ongoing role for child welfare in educational neglect, and considerations of better ways in which poor student attendance can best be addressed through public system intervention.

Background

Mandatory school attendance laws for American children emerged during the first two decades of the 20th century. The impetus was broad based, involving several coalitions of citizen groups responding to changes in American communities and cities. The early 1900's were characterized by massive immigration. Localities, especially east coast states, recognized schools as a means to "Americanize" the children of immigrants who ould provide businesses with literate employees as well as communities with civically literate citizens. Mandatory school attendance was also seen as a way to instill a shared culture and value system at a time when many cultures clashed in American cities (Katz, 1976).

At the same time, many children were employed in factories and anti-child labor groups sought ways to address conditions that were harmful to child development. Advocates pressed for mandatory school attendance as one solution, seen as a way to stop children from having to toil in sweat shops or labor intensive factories. The battle between child advocates and businesses who wanted access to this cheap labor source played out in the courts, as well as in Congress. Child advocates saw mandatory attendance as a "back door" means of achieving their goals (Chambers, 1963). There was also a consistent national understanding that the legacies of Thomas Jefferson and John Adams demanded that democracy could only be attained and sustained with an educated and informed electorate. The crusade for compulsory education, based in democratic principles, was spearheaded by Horace Mann of Massachusetts as early as the 1840's (Katz, 1976).

By 1919 all 50 states had created mandatory school attendance statues in their legal codes, however, there were challenges to enforcement. Katz (1976) describes the period of 1900 through 1930 as the "institutionalization of compulsory education laws," during which states created and supported mechanisms for institutional enforcement. This resulted in the creation of truant officers who answered to courts and state attorney offices. States also intertwined compulsory attendance laws with other legislation. For example, youth were allowed to work some hours of each day only if they could prove school attendance. School funding also

depended on attendance, as state and federal aid to school districts was tied to census numbers of students, which created an additional incentive for schools to enforce attendance.

The end result of mandatory attendance enforcement throughout most of the 20th century was for the criminal justice system to intervene in conjunction with local schools. These polices had the effect of incarcerating large numbers of juveniles throughout the 1970's. In the 1980's, researchers and policymakers began reexamining truancy and reconsidering how family, community, school and societal factors might influence school engagement and attendance (Nielsen & Gerber, 1979; Farrington, 1980; Barth, 1984; Levine, 1984; Bell, Rosen & Dynlacht, 1994; Epstein & Sheldon, 2002). The research recognized that truancy reflects problems in family functioning and that the justice system may not be the most appropriate place for school attendance problems to be addressed, particularly for young children. The 1970's growing children's rights movement focused attention on the plight of adolescents being incarcerated for offenses that would otherwise not be criminal behavior if they were adults. [1] These groups of children included truants, as well as runaways, and what some described as "ungovernable" youth (Russle & Sedlak, 1993).

Pressures from research and public sentiment drove the congressional passage of the 1974 Juvenile Justice and Delinquency Act. This Act eased enforcement of school attendance away from the juvenile justice system to child welfare where school attendance would be regarded as a neglect condition (labeled "educational neglect") and family-based interventions could be provided. By the end of the 20th century, 25 states had encoded truancy into their definitions of child abuse and neglect for young children (Children's Bureau, 2008). In this way, educational neglect came to be viewed as an indicator of underlying family distress and was used as an opportunity to intervene early in a situation that could worsen.

In keeping with this shift away from corrections, and to increase the clarity and the implementation of the new policies that had been created, Minnesota amended the Maltreatment of Minors Act (1993). This Act delineated children with attendance problems into two categories based on age: those 11 and under and those 12 and over. State policymakers determined that absenteeism in children 11 and under likely reflected family problems and the remedy was targeted toward parents. Identification of this type of attendance problem resulted in a referral to child welfare for educational neglect. Currently, mandated reporters (such as social workers and teachers) are required to report educational neglect to child welfare authorities, defined as 7 or more unexcused absences in a year.

The Original Study

Since the implementation of the two tracks for absentee students in 1993, educational neglect cases have been processed by child welfare agencies, along with other maltreatment cases, and the different types of allegations (e.g. sexual abuse, physical abuse, educational neglect, endangerment, etc.) could be determined through coding in statewide data systems. In 2001 Minnesota began to handle child welfare reports in a way that

[1] These are routinely referred to as "Status Offenses" in the juvenile court system.

routed educational neglect, along with other less serious reports, to a family assessment process that was believed to be more appropriate. This type of process is commonly referred to as an "alternative response" process and is used in many child welfare agencies. While Family Assessment reportedly served families without the intrusive, stressful, and intensive traditional investigation process, it resulted in the inability to differentiate educational neglect reports in the child welfare data. The time period of 2000-2001 was chosen to provide baseline data because it represented the last year during which educational neglect reports were coded in a traditional manner (although some many have been served by Family Assessment where it was being piloted) which allowed for identification in administrative data. In this way, all children impacted by educational neglect in the state of Minnesota were examined during this time period.

The principle finding from the original study was that 70% of all children who had child welfare contact because of educational neglect exhibited improved attendance during the school year following their involvement with child welfare. In addition, although children of color comprised a disproportionate share of the study group, they experienced attendance improvements similar to their white peers. These results are noteworthy given that racial disproportionality among all child welfare populations is a consistent observation in similar studies (Dougherty, 2003). The study results suggested that the child welfare involvement for educational neglect positively influenced school attendance, at least in the short-term.

Long-term Effects

Research on an array of prevention and early intervention efforts frequently includes attempts at measuring the degree to which positive effects are sustained over time. From early childhood (Oden,Schweinhart & Weikart, 2000; Temple, Reynolds, & Miedel, 2000; Reynolds, Temple, Robertson, & Mann, 2001), to child welfare (Allen, 2008;Lee & Tolman, 2006), to psychology and health (Adams & Burkowski, 2008; Kelaher, Paul, Lambert, Ahmad, & Smith, 2008; Alasker, Moen, & Kristoffersen, 2008), to education (Lloyd, 1978; Rumberger & Larson, 1998; Barnett, 1995) scholars attempt to uncover whether the resources expended to intervene in a social problem are not only effective, but are lasting and if so, for how long. Knowing the degree to which effects are sustained also builds the foundation needed to calculate the cost-benefit ratios that assist policymakers in resource allocation and can guide future service provision and practice. The long-term effects vary over time by field of inquiry, and by population.

Risk Factors: Child Welfare and Truancy

Risk factors for child welfare involvement overlap significantly with those typically associated with truancy and poor school attendance. A full examination of the indirect and complex relationships between poor school attendance and child welfare involvement is beyond the scope of this paper, but a brief review of one common risk factor shared by children and families who experience these problems is illustrative and important to our discussion.

Poverty is often experienced by families involved with child welfare and children with poor school attendance. The economic stress induced by the inability to provide for one's children can interfere with the

parent-child relationship resulting in depression which can then lead to child neglect (Conger et al., 1992; Brody et al., 1994; Conger et al., 1995; Duncan et al., 1998; and Solantaus, 2004). Parents who neglect child needs related to housing, sleep, or food can similarly neglect education and school attendance. The need to seek out work, deal with housing problems, domestic violence, or otherwise deal with economic crises can distract parents from the need to make sure their children attend school with regularity (Zhang, 2003). Additionally, homeless families face significant barriers to assuring that their children stay in school due to the fact they lack a fixed, permanent address (Christensen & Thurow, 2004). Safety issues also arise when parents who cannot afford child care leave young children alone while they work or look for work (Kerrebrock et al., 1999; Belsie, 2000). In child care situations, teens may be asked to stay home from school to care for younger siblings or may take advantage of the lack of parental supervision to skip school. Importantly, a parent's inattention to school attendance sends a message to children about the relative importance of school that can be reinforced by their own experiences.

Material poverty can make school an unpleasant place and when children lack the resources for gym uniforms, school supplies, or activity fees, they feel less connected to the school community, which fosters a sense of separateness that can lead to truancy (Campbell et al., 2005; Gleeson, 1994). Other factors that can impair the ability of families to make school a priority for children can include chemical dependency, domestic violence, and/or mental illness. Any of these crises can lower the prioritization of school in family life, which has lasting impacts for children.

The lack of connectedness produced by poor school attendance, particularly if paired with a lack of consequences (either in the family or the community), results in children receiving the message that rules about school attendance specifically and rules in society generally need not necessarily be obeyed. In particular, chronic truancy in elementary school is linked to serious delinquent behaviors for children ages 12 and under (Baker et al., 2001) and adolescent crime typically occurs during times of the day when teens are expected to be in school (Baker, Sigmon, & Nugent, 2001; Juvenile Justice Bulletin, 1999). While the psychological processes that foster a sense of deviance in children because adults allow them to miss school may be hidden, the connections between truancy and juvenile crime are clear, as are the more lasting effects as we observe that very high proportions of incarcerated populations have low levels of education attainment (Garry, 1990; Petit & Western, 2004; Robins & Ratcliff, 1978).

The Family Basis of Child Welfare Intervention

Minnesota's recognition of educational neglect as a family problem (in contrast to truancy, which is considered an individual problem) led to the utilization of child welfare as the intervention model. The family factors noted above, in the examination of the interrelatedness of poverty with child welfare involvement and neglect, similarly support the notion that effective interventions must be family-based. In the case of school attendance problems addressed within the child welfare system through educational neglect, our initial study finding implied that the child welfare process may indeed have addressed some aspects of family stress and

functioning that resulted in improved school attendance. Because of the wide array of child welfare services this contact represented, we concluded that the contact itself with child welfare resulted in a change in school attendance. By reexamining these same students over an additional four academic years, it was possible to explore not only whether their attendance continued to improve or stabilize but whether there were subsequent encounters with child welfare that may have continued to influence school attendance.

Study Data and Design

The original study group was created by capturing all maltreatment reports of educational neglect from 47 reporting counties in Minnesota during the 2000-2001 academic school year (N = 696). The educational records of 623 of these children were then obtained during the academic year following child welfare involvement, 2001-2002. From these original data, post-child welfare school attendance was identified as either Improved, Maintained, or Worsened and formed the basis for the current reexamination (Zuel & Larson, 2005).

Data to support the current study data were obtained by starting with the original group of children (N=623) and locating their education records for a series of four years after the original study: 2003, 2004, 2005 and 2006. Match rates were variable over time, with a year-to-year loss of approximately 9%, or an average of 24 students. This yielded a study group that was sizeable, at just over 500 students over at least three of the four study years: the proportion of matched students was 91.2% (2003); 88.9% (2004); 83.9% (2005); and 80.6% (2006). There was no discernable pattern to non-matched records – non-matching appeared to be at random.

Our research questions included: 1) were the school attendance improvements sustained for students whose attendance improved immediately after contact with child welfare in 2001-2002; 2) if attendance improvement was sustained, for how long; 3) were there discernable patterns of attendance change for the Worsened or Maintained and Improved groups in post-study years; and 4) how might the subsequent child welfare involvement of students interact with their post-study attendance patterns?

Data and Variables

The source data for the original and present studies were from the Minnesota Departments of Education and Human Services. As such, the administrative data come from large data systems used to report student and child outcomes, establish service eligibility, and manage reimbursement for federal funding. Details on some of the key variables used from these systems are included here.

Attendance

Attendance rates for each grade, school, or district are based on the portion of time a student is enrolled in that grade, school or district. The rate is a ratio calculated by the Average Daily Attendance (ADA) divided by the Average Daily Membership (ADM). The ADA and ADM for each grade, school, or district are added together and the resulting ratios are used for each grade, school, or district summary for a given student for a given academic school year. Improvement in attendance is defined as an increase in the ratio of ADA/ADM from one school year to the next. Perfect attendance = 1.0.

Disability Status and Type

For each student record, both disability status (yes or no) as well as disability type (e.g. learning disability, traumatic brain injury, speech or sight limitations, etc.) was coded. In most cases this information came from 2005-2006, the most recent school year available.

Free and Reduced Price Meal Eligibility

Meal eligibility is coded for each student based on whether or not they were eligible for free or reduced-price lunches and students were coded as eligible for either meal program (a binary variable). Again, this data was gathered from the most recent years' education record, which was 2005-2006 for most students.

Special Education Participation

The participation of students in special education was obtained from the most recent school year for which data was available, in most cases, 2005-2006. Each student record was coded as participating or not participating (a binary variable) for this program.

Status Updates and Student Disruptions

Student records are updated periodically throughout the year for a variety of reasons including changes to special education status, changing schools, or events that affect enrollment. Record updates also include status changes such as student moves, student drop-out, graduation, commitments to correctional facilities, student pregnancy, or treatment program entry. For each student in this study, each year's status codes were examined to quantify changes to student academic experiences that would disrupt learning and potentially, attendance. Changes that were considered disruptive included changing schools within the same district, transferring to a private school, moving outside the district or state, commitment to a correctional facility, leaving school due to social reasons, family environment reasons, financial reasons or unknown reasons, being expelled, leaving due to pregnancy, or other forms of student withdrawal. For each school year these changes were grouped into a variable that quantified the cumulative number of disruptions over the four years, as well as whether or not there were any disruptions to students overall (a binary variable).

Child Welfare Reports and Determined Maltreatments

Whether or not students came in contact with the child welfare system after their initial contacts for educational neglect (in 2000) was noted. The number of reports was calculated for students as well as the total number of determined maltreatment findings.

Analysis

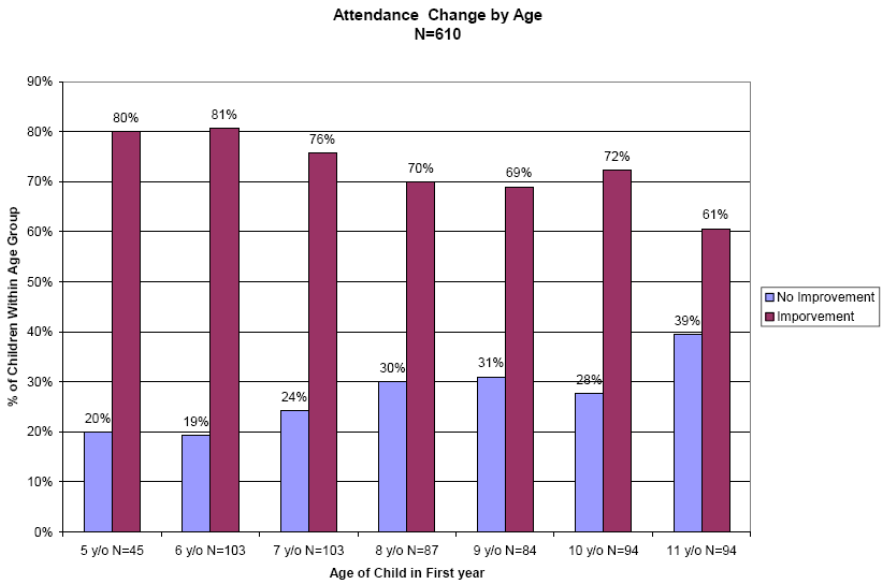
All data was analyzed using Statistical Package for the Social Sciences, version 12.0 and data supported a longitudinal model. Where ratio data is available (as in the case of student attendance), Multivariate Analysis of Variance (MANOVA) for repeated measures was used as a measure of the significance of differences between groups over time. Where dependent variables were binary (e.g., graduation, drop-out status), logistic regression was utilized to explore risk factors that predicted membership in certain attendance groups (Howell, 2002).

Results

Original Findings Revisited

The original study showed that a significant number of children for whom a report of educational neglect was made experienced school attendance improvements immediately following services and that greater improvement was observed for the youngest children.

Figure 1. Original Study Groups: Attendance Improvement by Age at Maltreatment



Attendance improvements one year after child welfare involvement were observed regardless of geography, gender, or race (Zuel & Larson, 2005).

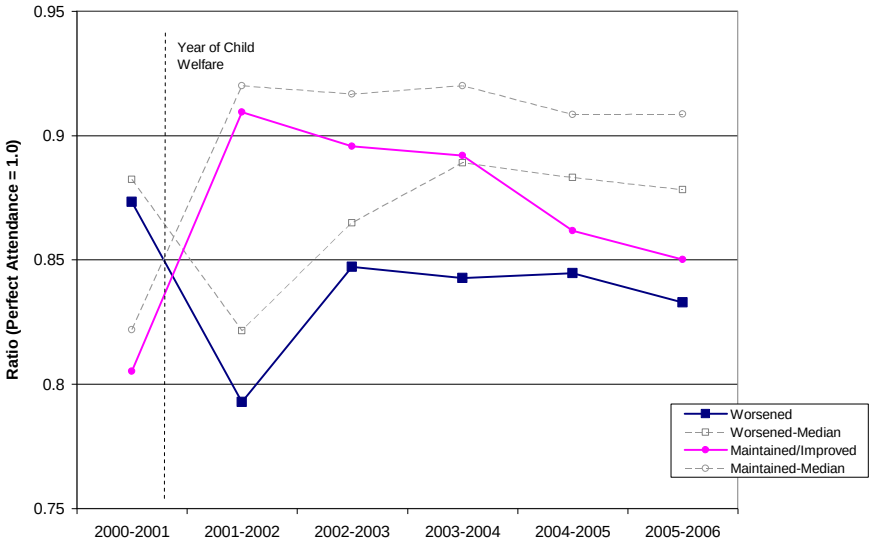
Match Rates by Group

Not all original student records (*N=623*) could be located over all subsequent years for the follow-up study. When examined by the original attendance status groups, there were some differences in match rates but they were not statistically significant. Because the original Maintained group (students with stable attendance) constituted only six students by 2005-2006, it was combined with the Improved group for all analyses in the follow-up study. Attendance data were obtained for at least three of the four subsequent study years on 502 of the students from the original study.

Overall Attendance in Relation to Original Groups

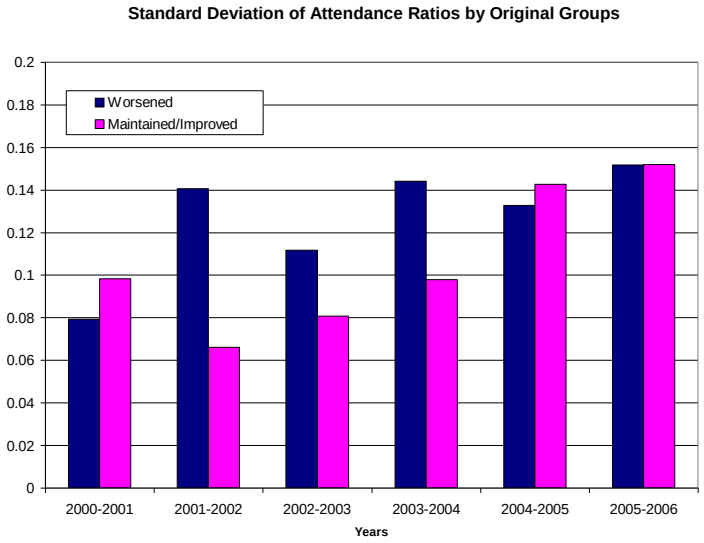
The median attendance ratios of both original study groups over the follow-up years show a pattern of stable or improving attendance up until three years after child welfare services were received for educational neglect, or by the 2003-2004 school year. This is particularly true for students whose attendance worsened in the year immediately after child welfare involvement (Figure 2).

Figure 2. Differences in Mean Attendance Ratios for Original Study Groups



Significant differences in group attendance means were observed up until 2004. Note that the 2002 school year differences (2001-2002 on Figure 2) reflect the first year after the receipt of child welfare services and are the outcomes of the original study. Students whose attendance initially worsened in the wake of child welfare involvement make delayed improvement by 2003 but all attendance falls by the 2004-2005 school year. In this depiction of attendance trajectories, the mean and medians (gray, hashed lines) are shown to illustrate the variation within groups. Group differences in attendance during the four follow-up years (2003-2006) were statistically significant using MANOVA ($F=9.264$, $_{1, 486}$, $p=.002$). Another view of the variation between the original groups is illustrated by Figure 3 where we show the standard deviation of attendance ratios. The fact that variation begins to diminish by 2005 and certainly by 2006 further supports the notion that any effects of child welfare services in 2001 dissipated by 2005. As was the case with the original study, group differences were significant regardless of child race.

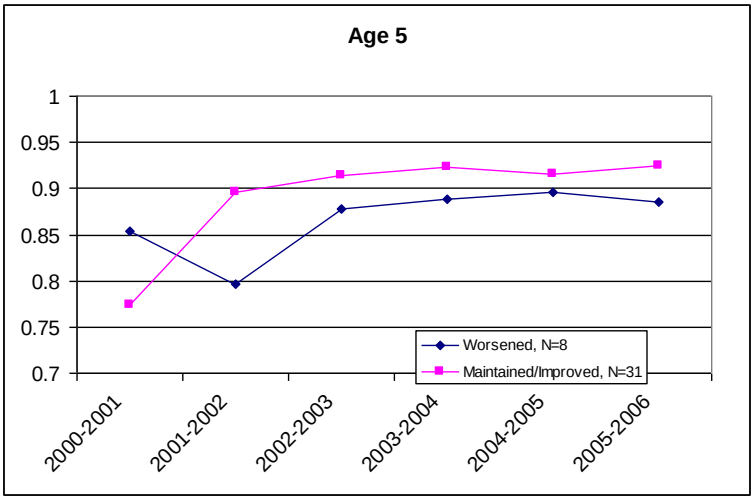
Figure 3. Standard Deviations of Post-Study Attendance by Group



Attendance Differences for Original Groups, by Age at Maltreatment

One of the findings of the original study was that there were more dramatic improvements in attendance for younger children. That is, the younger the child was at the time of the educational neglect report, the more likely they were to experience an improvement in school attendance one year later. To explore this further, examined the attendance trajectories for the original Worsened and Improved/Maintained groups by age at maltreatment (figures 4 through 11).

Figure 4. Trajectories of 5 Year-olds



F=3.018, $_{1}$, p=.075

Figure 5. Trajectories of 6 Year-Olds

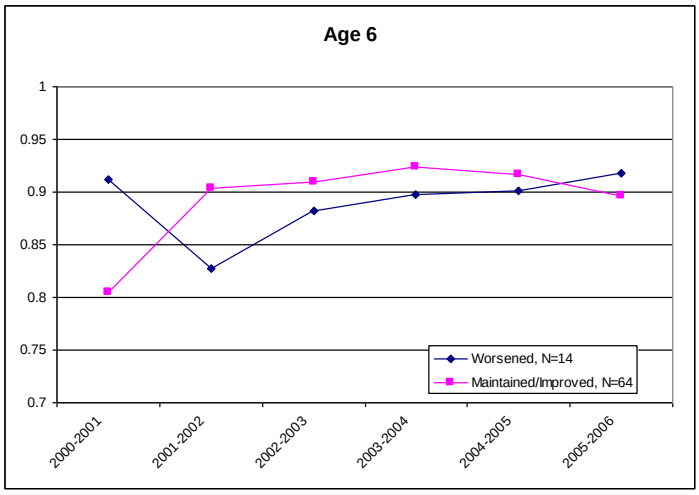
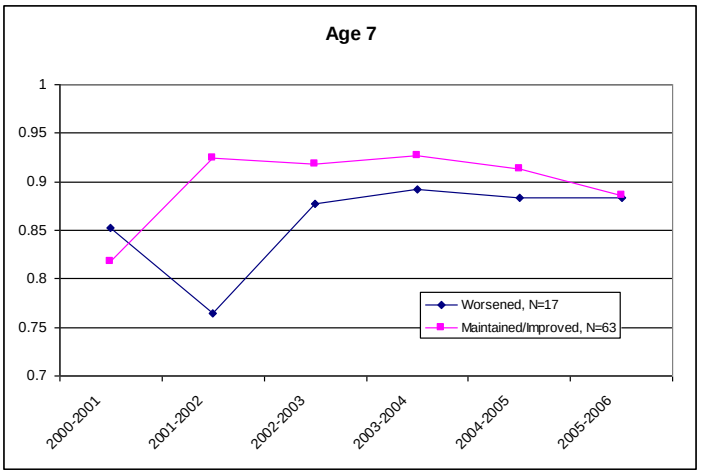


Figure 6. Trajectories of 7 Year-Olds



F=3.345, $_1$, p=.071

Figure 7. Trajectories of 8 Year-Olds

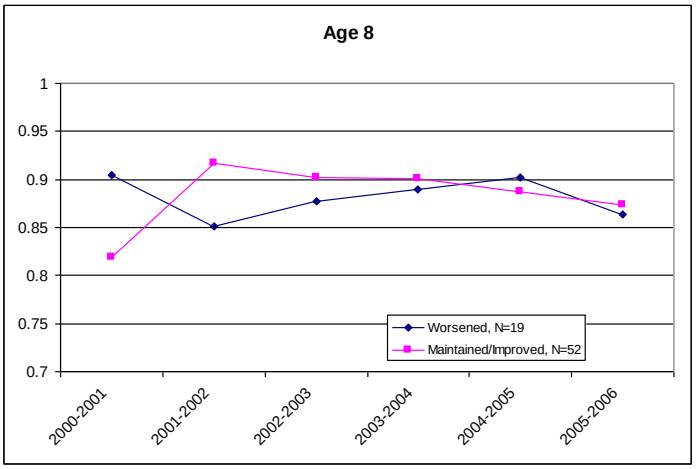
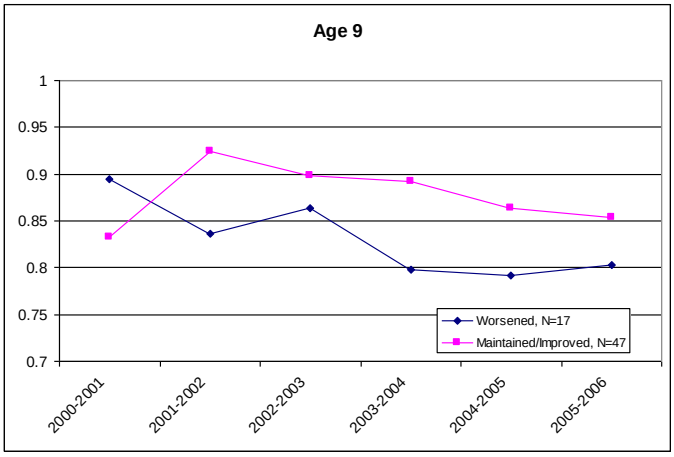


Figure 8. Trajectories of 9 Year-Olds



F=7.137, $_1$, p=.010

Figure 9. Trajectories of 10 Year-Olds

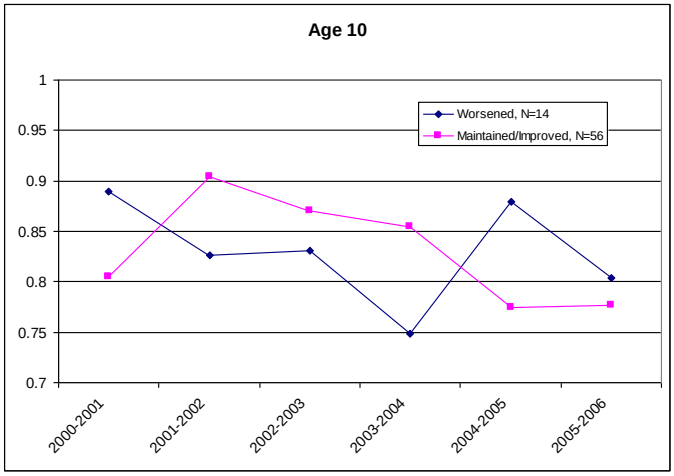
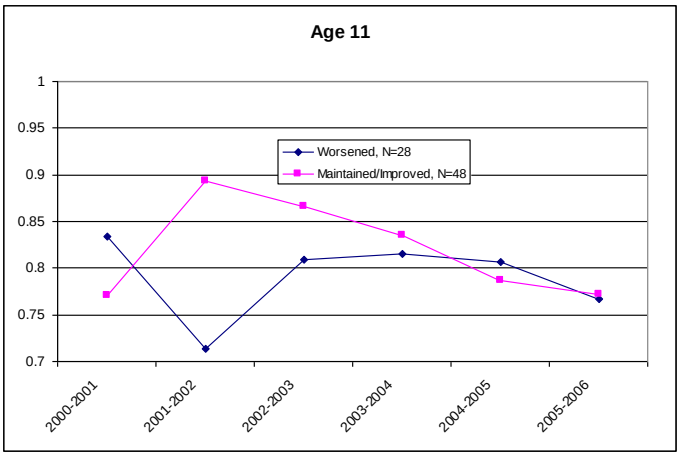


Figure 10. Trajectories of 11 Year-Olds



With the exception of children who were age 6 at the time of educational neglect report, younger children consistently had better-sustained attendance over time. These differences were statistically significant, and older children generally had less improvement in attendance as well as less likelihood of maintaining those improvements.

Ninety-percent Attendance Threshold

The length of the Minnesota school year varies by district and while there is statutory guidance on what number of days of absence and circumstances constitute educational neglect, school district policies and practices for identifying, acting upon, and coding student absences can be highly variable. A minimum threshold is useful for setting some standard for assessing attendance patterns. In this study, a ninety-percent threshold was chosen as a minimum and is consistent with the federal Annual Yearly Progress (AYP) requirements that are part of No Child Left Behind legislation and many publicly articulated school system policies on mandatory minimum attendance (Chang & Romero, 2008; Minnesota House of Representatives House Research, 2003; Nevada Public Schools, 2008; New Mexico Public Schools, 2008; Tulsa Public Schools, 2004). This 90% minimum threshold is relatively conservative. For example, for a student in a district in which there are 180 required instructional days, 90% attendance translates to the student missing fewer than 21 days, or no more than four full weeks of school. Some researchers have begun to recognize degrees of attendance in assessing student outcomes with 95% as a recommended threshold for "A" attendance, 90%, "B", 85%, "C", and "D" equal to attendance 84% or lower (Heistad, 2008). In Figure 3, the median attendance for students from the original study whose attendance either improved or maintained after child welfare services was above 90%. Students whose attendance initially worsened after child welfare services improved significantly, but were generally not able to reach this 90% threshold over the follow-up study period. Using this 90% threshold provides us the opportunity to assess the practical significance of results. In particular, in the case of the age group analyses (figures 4-11), children ages five through seven whose attendance improved after child welfare involvement had attendance that rose and remained above 90% for at least three subsequent years whereas for children age eight and above, results are more mixed and in fact, as children are older, they are less likely to improve to the 90% threshold (see 11 year-old results, Figure 11). Coding a 90% threshold status for each student was also useful when examining attendance trajectories according to other attributes.

Attendance Trajectories

To determine the overall attendance status of students over the follow-up years, it was helpful to examine both year-to-year directional change (i.e. improved, worsened) and magnitude of change (whether or not they maintained 90% attendance). These two variables were used to code attendance trajectories for each student as a Negative Attendance Trajectory (NAT), Positive Attendance Trajectory (PAT), or Mixed Attendance Trajectory (MIX).

For example, a student whose attendance had worsened right after the original educational neglect intervention but whose subsequent attendance over the next four years improved, worsened, improved and maintained with the last year's attendance above 90% would have a positive attendance trajectory (PAT).

Another example would be a student whose attendance initially improved above 90% after child welfare involvement, but whose attendance subsequently maintained, worsened, maintained, and worsened again would have a negative attendance trajectory (NAT). Students' whose attendance rose and fell in equal measures over the period were assigned a mixed attendance trajectory (MIX). In cases where student attendance never rose above the 90% threshold, only the directional patterns to attendance were taken into account to assign a trajectory and may have resulted in a mixed code, particularly because they never rose above 90%. Finally, a student without at least three year's-worth of attendance data or with gaps in their student record (where perhaps they left the state and then returned) was not assigned a trajectory and was excluded from analysis.

Table 1. Attendance Trajectories by Group

	Negative Attendance Trajectory (NAT)		Mixed Attendance Trajectory (MIX)		Positive Attendance Trajectory (PAT)		Total	
	N	*Perc.*	*N*	*Perc.*	*N*	*Perc.*	*N*	*Perc.*
Worsened	15	11.2	53	39.6	66	**49.2**	134	100
Maintained or Improved	98	**23.7**	166	40.1	150	36.2	414	100
	113		219		216		548	

χ^2 =12.006, df_2, p<.001

A significant and similar proportion of both groups experienced mixed attendance trajectories in the four years after their educational neglect-based contacts with child welfare. A significant proportion of students who had maintained or improved their attendance after having child welfare contact (23.7%) experienced negative attendance trajectories over the following four years (Figure 3). Nearly half (49.2%) of students whose attendance worsened after their educational neglect-based child welfare contacts in 2002 eventually experienced improved attendance trajectories.

Negative and Positive Trajectories

We next explored the array of characteristics of students who had clear negative and positive attendance trajectories. This essentially created four new groups in relation to original study attendance status and longer-term attendance trajectory: 1) worsened attendance with NAT; 2) maintained or improved attendance with NAT; 3) worsened attendance with PAT; and 4) maintained or improved attendance with PAT. The purpose of this was to investigate whether there were patterns to subsequent long-term improvement or worsening of school attendance by attributes that might influence this outcome including school disruption, poverty, race, gender, and additional contacts with child welfare. At this point, students with mixed attendance trajectories (40% of the group) were removed from the analysis.

A review of group characteristics showed a variety of differences. In particular, while there were few differences between groups in terms of the proportion of students who were of color (Blacks were disproportionately represented among all groups), from Metro versus non-Metro counties (Metro area counties were disproportionately represented among all groups), or by gender, there were differences by whether or not students were receiving free or reduced-price meals, whether there had been maltreatment reports, determined maltreatment findings, or school disruptions in the years since the original study. Students in Groups 3 and 4

(with positive trajectories) were more likely to have participated in special education and have documented disabilities, experienced school disruptions, and were poorer than students in Groups 1 and 2.

To create a binary dependent variable that accommodates logistic regression that would allow a more precise predictive measure, the four groups (omitting the mixed attendance group) were collapsed into two: Negative long-term attendance trajectory, comprised of Groups 1 and 2; and Positive long-term attendance trajectory, comprised of Groups 3 and 4. In this way, risk ratios could be calculated to predict the likelihood of having an overall negative or positive long-term attendance trajectory dependent upon particular characteristics.

Table 2. Gender, Race, Disruptions and Child Welfare Contacts and Trajectories

	Female	Male	Metro	Non-Metro	White	Black	Other Non-White	Disruption	No Disruption	CW Repts	No CW Repts	Det Malt	No Det Malt
NAT	54.9%	45.1%	85.8%	14.2%	21.2%	47.8%	31.0%	85.8%	14.2%	8.0%	92.0%	55.6%	44.4%
PAT	46.8%	53.2%	81.5%	18.5%	29.6%	50.9%	19.4%	69.9%	30.1%	14.4%	85.6%	64.5%	35.5%

Race

Significant differences were observed among these groups with black students twice as likely as whites (risk ratio: 2.222, $p<.01$, df_2, 95% CI) to have a positive long-term attendance trajectory. Asian, Native American Indian, Alaskan Native, and Pacific Islander racial groups comprised a very small proportion of the study group and were combined into a non-white group prior to analysis and fared the worst of all three groups.

School Disruptions

Students with any school disruptions over the course of the follow-up years were significantly more likely to have a negative long-term attendance trajectory. Those with any disruptions were 1.9 time more likely to have NAT than those without any (risk ratio: 1.912, $p<.001$, df_1, 95% CI). Analysis of variance supported this finding by showing that the mean number of cumulative disruptions experienced by students with NAT was significantly higher than those with PAT ($F=12.036$, df, $_1$, $p<.001$).

Child Welfare Contacts

Reports

Although the majority of students did not have additional child welfare contacts, among students who had subsequent reports to child welfare, more experienced positive long-term attendance trajectories. A student with reports to child welfare was slightly more likely as one who did not to have a positive long-term attendance trajectory (risk ratio: .516, $p<.01$, df_1, 95% CI). Analysis of variance showed that while students with long-term positive attendance trajectories had a higher average number of reports to child welfare compared to those with NAT, the differences were not significant.

Determined Maltreatment

Once reports moved to the level of investigation and determination, differences between the groups disappeared with no significant differences in occurrence of determined maltreatment or number between students who had positive or negative long-term attendance trajectories. Reports that were not accepted for investigation are not included in analysis and likely received Family Assessment (alternative response) services,

a non-invasive service delivery model that provides family-specific services that are voluntary and intended to meet the needs of families. The differentiation of these services could not be made in these data – reports for substantiated maltreatment were used simply as a way to identify children who came to the attention of child protection for failure to attend school. There were no significant predictive relationships between determined maltreatment, gender, or geography.

Limitations

There are a number of important limitations to this study that are relevant to interpretation and when considering next steps for practice, policy, or further research.

Mixed Trajectories

A significant proportion (40%) of this study group experienced mixed attendance trajectories four years after the initial study. Mixed attendance is defined here as attendance that includes increases (improvements) or decreases in equal measure over the course of the follow-up period. A mixed attendance trajectory does not definitively indicate overall improvement of worsening attendance. However, it might be an overall positive outcome that students are still enrolled in school and can be located in the public school records. On the other hand, mixed trajectories might also indicate significant amounts of ongoing family disruption. As it was difficult to discern just what mixed trajectories indicated, they were omitted from much of the analysis and we know less about them as a result.

Data Quality

There is profound variability in school attendance data tracking over a state with hundreds of districts and schools. Some schools do not take attendance on a consistent basis and others may not be required to report attendance (such as non-traditional schools like charters). Variation in practice may result from a lack of a universal definition of "unexcused" absence as stated by state statute. In some schools, funding decreases have resulted in reductions in the staff traditionally involved in attendance tracking. These positions were previously filled by school social workers. Many elementary schools still have school social workers, however their funding restricts their involvement to special education students. Anecdotal evidence suggests that the end result is significant under reporting and documentation of absences.

Lack of Detailed Intervention Knowledge

Due to the nature of the data used to examine child welfare involvement, this study was unable to detect what specific types of interventions were offered to families whose children were reported to child welfare. As noted, reports to child welfare for educational neglect was made to identify children that came to the attention of the child welfare system for failure to attend school. We were able, and interested, in simply understanding whether there was an effect of children coming to the attention of child protection in any way. For those who are interested in the influence of specific types of child welfare services, such as alternative response, this is a limitation of the design. Thus we could not differentiate those children who had one type of intervention service from those who had another type and then tie those specific services to attendance outcomes. This study simply describes sets of outcomes with acknowledgement that there is considerable variation in services that resulted from child welfare contact.

County Child Welfare Policies

Inconsistency in defining absenteeism is not confined to the school systems. Counties also have unique definitions of what constitutes a child welfare report for educational neglect. The Minnesota state statue defines 7 days unexcused absences as a mandated report to child welfare, however some county staff report anecdotally that in practice an educational neglect report is sometimes not taken until there are closer to 10 unexcused absences. Counties often require schools to demonstrate their intervention attempts, which can include sending a letter from the principal to the parents as well as home visiting. Each county has negotiated a process with their respective school systems and the extent to which schools provide outreach prior to reporting often depends on their own resources. Thus large inner city school systems are usually lacking these resources and have less school interventions for absenteeism.

Along the same lines, this study is unable to detect if there was school intervention prior to a report to child welfare. Furthermore, if there was intervention, the study has insufficient data to detect the effectiveness, thus reflecting the value of a particular county's policy with their school system. The overwhelming number of metro area child welfare reports might speak to the school system's lack of resources rather than a student characteristic. Policies around who reports educational neglect also affects the data. In practice, in many county child welfare agencies, the school is the only accepted reporter for educational neglect, unlike other forms of child abuse, whereby there are many potential mandated reporters. If a therapist, for example, called to report a child's non-attendance, they may be directed to report this to the school with the understanding the school would in turn file a child welfare report.

Discussion

This study illustrated the nature of long-term attendance patterns of students who had poor school attendance and came into contact with child welfare services as a result. At the time of the initial educational neglect findings, attendance improved for a majority (72%) of children whose families received child welfare services and there are indications that these effects may be sustained over time for some children. In general, attendance improvements were maintained three years after the initial intervention (through the 2004 school year) at which point attendance rates fell off for nearly all students. When examining attendance trajectories by subgroups, long-term attendance improvements were related to race with black students more likely to experience long-term positive trajectories than white students or other non-white students. This is consistent with Romero & Lee's findings (2007) using the Early Childhood Longitudinal Study-Kindergarten data in which there was increased school engagement by black students in elementary school over time. The current study's reflection of these results may be attributed to the possibility that black children with educational neglect child welfare contacts have a greater chance of having a child welfare case opening after being accepted for investigation, subsequent reports, and ongoing services. However, these data do not capture this nuance but is exemplified by research showing higher case openings in child welfare overall for black children and may be a positive outcome to an otherwise negative disparity in system involvement.

Other factors that influenced a student's likelihood of having a positive long-term attendance trajectory included the presence and number of school disruptions, such as leaving school and returning, and additional reports to child welfare. Child welfare services, ranging from a substantiated maltreatment to Family Assessment (alternative response) diversion to other services after acceptance of report and investigation, might be effective with early truancy because they are family-based and attempt to address a child's barriers to school attendance more holistically. The services families receive might include referrals to economic support services, chemical health services, or other resources that will improve family functioning and reduce family stress. Although the finding that school disruptions had a negative effect on long-term attendance trajectories might seem intuitive, our initial assumption was that attendance might be either negatively or positively influenced by disruption. In particular, if some school disruptions are similar to child welfare contacts in that they involve the family, they may trigger increased subsequence vigilance to student school attendance. However, an ancillary analysis revealed that even disruptions that might presumably boost attendance (e.g. "rehabilitative" disruptions such as entering treatment programs or correctional facility commitments) were found to have a negative impact on long-term trajectories. The disruption data suggests that regardless of the nature of the disruption, the attendance outcome is rarely positive. Perhaps this is due in part to the fact that by the time students are leaving school for treatment or correctional placements, the "intervention" is individualized and no longer encompasses the ecological needs of the family.

It is similarly important to pay attention to disruptions to school attendance driven by school movement. Given the emphasis on school choice in Minnesota and the growing number of homeless and highly mobile

students in the current economic downturn, mobility is an ongoing challenge to interventions intended to improve school attendance.

Students with additional reports to child welfare had an increased likelihood of experiencing a positive long-term attendance trajectory. This was not dependent upon the number of reports, but simply whether or not they experienced *any* reports over the subsequent years. We speculate that the child welfare report process acts as a check-in on families who may not consistently monitor their children's school attendance, particularly when those families have already had previous child welfare involvement.

As was the case with our original study, we are drawn to consideration of intervening in early attendance problems using a variety of family-centered services that may or may not include child protection. These possibilities would benefit from more in-depth study. This is particularly timely given the budgetary crises faced by most child welfare agencies in the United States that result in the investigation of only the most egregious cases of harm as well as the efforts by those agencies to more efficiently triage less severe cases to other service pathways such as alternative responses. Alternative response service pathways, which divert less serious reports of harm or neglect from traditional investigation, provide a wide array of services to families many of which are preventative. This meets the individual needs of families in a strengths-based, voluntary model while reducing expenses for agencies and intrusion into families' lives that has been successful in reducing the number of families who ultimately become involved in traditional investigations. Evaluation of Family Assessment (FA) in Minnesota has revealed the positive perceptions of staff and families to the process while acknowledging variation in important aspects of service delivery including the assessment of the appropriateness of families for FA (p. 131), how counties approach families (p. 131), and how case management is operationalized (i.e., contracted versus in-house and active versus passive follow-up to referrals) (p. 11). In states such as Minnesota, where counties are allowed to provide services in a variety of ways families will likely experience differential service provision that may influence outcomes (Lohman & Siegal, 2004). However, these nuances are part of the typical landscape of any system that allows some local discretion in service delivery.

Studies of school engagement consistently show that there are many reasons why students have difficulty attending school and poverty and family stress play important roles (Ackerman, Brown, & Izard, 2004; Crane & Heatonu, 2007; Romero & Lee, 2008). Given the complexity of the lives of teens, non-individualized interventions that incorporate supports to the entire family will probably be most successful for young children (Pellegrini, 2007; Sheldon, 2007). Neglect and maltreatment are often the end result of escalating hardship in families that spin out of control. In this respect, a young child's attendance problems probably indicate a family functioning problem that is starting to affect their lives adversely, just beginning to come to the attention of teachers and schools. While child welfare is intended to be an intervention strategy, in the case of educational neglect, it may perform more of a prevention function. This is borne out by data that shows that few, if any children are removed from the home solely on the basis of educational neglect.

This follow-up study, as well as the original study on which is was based, sheds light on the practice of addressing student attendance problems via the family-centered child welfare system. As a strategy to decriminalize non-attendance, moving the process of intervening in the lives of students to child protection shifted attention from the individual child to the family. Given what we have learned about the many contributing factors to school disengagement, this approach makes general sense. In addition to replicating this work, child welfare agencies should consider changes to their child welfare programming that would enable them partner with school systems to address absenteeism more intentionally. Chang & Romero (2008) list several comprehensive responses to absenteeism including focusing on early K-3 children who miss school, improve education to parents on the importance of early, consistent attendance, provide incentives for young children to attend school, and finally engaging parents in the school process using the court system if necessary.

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