



***Minn-LInK Child Welfare
Special Topic Report No. 2***

***Child Welfare, High School
Graduation, and Economic
Outcomes:***

Follow-up on the economic outcomes of
young adults who had substantiated
maltreatment findings prior to
their senior year of high school

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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 state-wide 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. Wage and hour data was obtained with permission from the Department of Employment and Economic Development. Public Assistance program use data was obtained with permission from the Minnesota Department of Human Services. 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 study is a follow-up to a previous report on the high school graduation outcomes of adolescents involved in the child protection system in Minnesota. In that study, the Minn-LInK project at the University of Minnesota School of Social Work in the College of Education and Human Development, for the first time examined a group of 999 older Minnesota adolescents who had experienced a substantiated maltreatment finding over a range of up to 30 months prior to the 2002-2003 school year. Data about the adolescents revealed that they share many of the characteristics of child protection populations described in other studies; they are disproportionately of color, tend to be poor, and have high rates of disability (indicated in this case by receipt of special education services). The high school graduation rate of seniors in this group (N=387) was 47%¹.

Through the use of administrative data, this new analysis explores the economic outcomes of the cohort of former high school seniors, examining their wages and public assistance use two years after they left high school. Non-graduates had much lower wages and worked less than their graduating classmates although they had about the same number of jobs, indicating that graduates were better compensated for their time overall and had more opportunity to work compared to those who did not graduate. Public assistance program use for all types of programs was not significantly different for the two groups, but differences emerged when specific programs were examined. In particular, non-graduates had significantly higher rates of Minnesota Family Investment Program (MFIP) use compared to graduates and many more of them were female, indicating that these young women had begun families (because program eligibility requirements are based on the applicant having a child in the home). Recommendations from this work include ongoing monitoring of the high school graduation of adolescents who have contact with child protection and increased emphasis on shared responsibility for educational progress by both schools and social services agencies.

¹ For more information as how graduation rates were calculated, see Appendix A of this report.



Introduction

A previous report on the high school outcomes of a group of older Minnesota teens who had had contact with the child protection system showed a relatively low graduation rate (47%) when compared to all other seniors in the state during the same school year (Larson & Jefferys, 2006). This graduation rate was very similar to those observed in other studies of foster care youth (Barth, 1990; Wertheimer, 2002; Casey Family programs, 2001). This follow-up study examines the economic outcomes of a subset of the Child Welfare study group whose senior year of high school was during the 2002-2003 school year. The economic outcomes explored relate to public assistance (or 'welfare' program use) and earnings over two years after their senior year of high school. The outcomes for both graduates and non-graduates were examined.

Background

The Original Study Group

In the original study, an exploration of the overall educational outcomes of a group of older teens who had had contact with the child protection system, a sub-set of high school seniors (N=387) was examined for high school graduation rates. These students had experienced a substantiated maltreatment finding² up to 2 ½ years prior to their senior year. Previous studies have shown relatively low high school graduation rates among foster care adolescents in the range of 45% - 50% (Barth, 1990; Wertheimer, 2002; Casey Family Programs, 2001). This study of Minnesota seniors resulted in a graduation rate of 47%. For the following school year (2003-2004) a similar rate (46%) was calculated for another cohort of older teens with child protection contact (Larson & Jefferys, 2006). One of the recommendations of the study was to follow a relevant adult outcome for these students some time into the future after they had left school. This study examines their earnings and public assistance program (welfare) use approximately two years after leaving high school.

Education and Earnings

The relationship between education attainment and earnings has been well-documented in a variety of disciplines and for many years. In actual dollars, high school graduates earn more per year than those who drop out (Doland, 2001; U.S. Bureau of Labor Statistics, 2001:2; Baker et. al. 2001). Education attainment is a critical component of earnings potential. Those who do not graduate from high school also work less per year than those who do (Rouse, 2005; Baker et. al, 2001). In examining inflation-adjusted earnings over the past 20-25 years, there is evidence that the economic loss consequences of not completing high school are now greater than before with relative earnings of less-educated workers falling (.9 times to .7 times) as a proportion of the earnings of high school graduates (U.S. Census Bureau, 2002; Donahoe & others, 2000). In earnings simulations, high school graduates are expected to earn \$1.2 million over their lifetime, and those who do not complete high school, \$1.0 million (US Census Bureau, 2002).

² A substantiated maltreatment finding is one that is reported, investigated by county social services with a resulting determination of harm or neglect.

International studies on the economic outcomes for individuals who do and do not complete the equivalent of high school consistently show that those who fail to graduate fare far worse. When the financial penalties of failure to graduate from high school are calculated for 22 nations (including the United States, which ranked 17th for graduation rates), the earnings of a 25-64 year-old high school dropout in the US is only 65% of a high school graduate – the lowest of all nations studied (OECD, 2006). If all non-graduates currently graduated from high school, \$2.8 billion in additional earnings could be expected in the United States. This figure is particularly dramatic when set against the high annual costs of incarceration (a population with a consistently high proportion of high school drop-outs), estimated to be approximately \$5 billion. In a state-by-state analysis of an estimated 5% increase in male high school graduation, Minnesota's benefit to the state economy is over \$77 million annually (Alliance for Excellence in Education, 2006). International figures are particularly noteworthy as all students today must be prepared to compete for global employment opportunities.

Some researchers have estimated a 10% increase in earnings for every year of post-secondary schooling completed (Rouse, 2005). As high school graduates enter college the gaps in earnings potential widen even further. In a 34 year analysis of national education attainment rates and earnings, the Federal Reserve Bank of Cleveland found an ever widening disparity in earnings as college education attainment increases, with earnings for four-year college graduates increasing about 41% and those with advanced college degrees, 52% (2005). Of course, unless one graduates from high school, one cannot enter college and realize these ongoing earnings benefits.

Education as a Protective Factor

Given the pay-offs, completing high school should act as a protective factor for young adults who begin life with multiple challenges such as family dysfunction and poverty. Poverty is associated with high levels of familial stress that includes neglect, health problems and depression (Jozefowicz-Simbeni, 2002). And, although there continues to be controversy surrounding the degree to which schools perpetuate social inequity (Willis, 1977; McLeod, 1987), there are equally convincing arguments – including the economic data – that point towards education as a critical foundation for all young people, and particularly for those who have been raised in poverty or are from families with multiple challenges (Wall, 1996, Jozefowicz-Simbeni, 2002). A number of organizations recommend education as an important protective factor for the prevention of drug abuse, teen pregnancy, depression and poor sexual health - all behaviors that can jeopardize adult outcomes and economic outcomes, in particular (World Health Organization, 2005; National Institute on Drug Abuse, 2006; Child Trends, 2006; Kirby & others, 2005).

Study Data, Design, & Limitations

The former high school seniors examined in this study were a sub-set of the previous high school graduation study and the data are therefore subject to limitations from that work. For the high school graduation study, the entire universe of adolescents who had had substantiated maltreatment in Minnesota were first selected. About 70% of the students who were predicted to be age 18 as of June 2003 were then successfully matched to Minnesota education records. The main way in which matched and non-matched records differed was in terms of geography with

metro county adolescents more likely than non-metro county adolescents to be located. There was no evidence as to why matching rates differed in this way. In all other respects, students were similar to one another (race, poverty, etc.).

Wage and work hour data were retrieved on former high school seniors using their social security numbers for a 27-month period after the end of their senior year, (June, 2003 through September, 2005). The total wages earned over this period were calculated, along with total number of work hours and number of jobs. Wages and work hours were totaled over the entire period as opposed to creating monthly averages since all wage data is reported at the calendar quarter level (making monthly averages potentially inaccurate due to periods of unemployment or when multiple jobs are simultaneously held). Public assistance program use data were also obtained for a similar, but slightly later post-senior year period, (September, 2003 through December, 2005). Public assistance program use data indicated the number and type of programs used.

In this study, high school graduation was considered the independent variable with two areas of economic outcomes (the rate of public assistance program use and earnings) as dependent variables. Because all subjects in this study had experienced substantiated maltreatment prior to their senior year of high school, they entered with the same primary risk factor. In addition to describing the general economic outcomes of these former students after high school, chi-square and ANOVA statistical tests were run on differences in wages and public assistance program use by group (graduates and non-graduates). For information on how graduation rates for the previous study were calculated or for details on the study groups beyond what is contained in Appendix A, please see the original report at <http://ssw.che.umn.edu/img/assets/4467/HSReport.pdf>. All data analyses were conducted in SPSS 12.0 for Windows.

Results

Employment

Wage data were obtained on the senior-year cohort for a period of 27 months after their senior year (both graduates and non-graduates). Wage data are quantified and archived by calendar quarter and data analyses reflect this. Total wages were analyzed, along with total hours, and number of jobs. The match rate was 79.3% over this period with the social security numbers of 307 out of 387 of the original seniors matched to the wage and hour data.

Average Number of Jobs, Wages, and Work Quarters

Graduates and non-graduates worked approximately the same number of jobs over the study period with graduates averaging 1.3 jobs and non-graduates, 1.2. High school graduates earned significantly more than non-graduates with grads earning \$20,846 (\$9,265 annual wages) on average and non-grads only \$15,796 (\$7,020 annual wages) over the study period³. Measures of the amount of work performed by the cohort were obtained from an examination of average hours and average quarters worked. Graduates had higher average hours worked (2,133)⁴ and number of quarters employed (7.4) compared to non-graduates (1,734 hours and 6.2 quarters)⁵.

³ These differences are significant using ANOVA, $F_{1,305} = 7.33$, Sig = .007

⁴ These differences are significant using NOVA, $F_{1,305} = 5.33$, sig. = .022

⁵ These differences are significant using ANOVA, $F_{1,305} = 11.56$, Sig = .001

Public Assistance Use

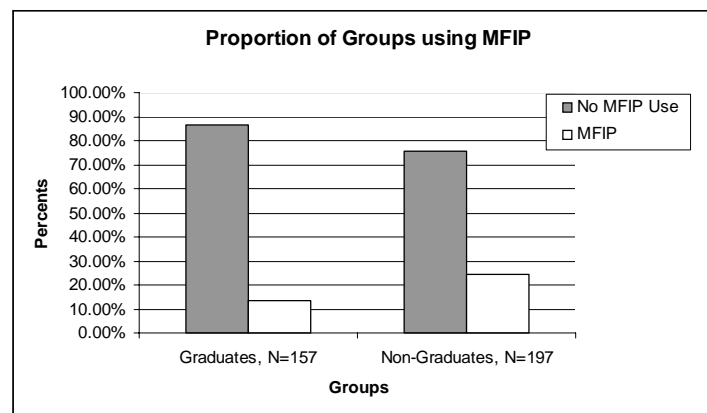
Ninety-one percent of the original cohort had records in the state's public assistance system. Not all of them had public assistance program use during the study period, but they had a record of some use at some point in time. The number of programs used during the 24 months after graduation was calculated, along with the types of programs used. Over half of those who had matched public assistance records were non-graduates (N=200, or 53.1%). Non-graduates used more public assistance programs overall than did graduates during their post-graduation period, but the differences were not statistically significant.

Types of Programs Used

MFIP

The majority of both groups did not use any MFIP, but a higher proportion of non-graduates were MFIP users.

Figure 1. MFIP Use



These differences are significant using Chi-Square, $df=1$, value = 6.724, sig. = .010

Public Assistance Users – What else do we know about them?

The majority of those who used public assistance programs after their senior year (N=166) were disproportionately female (N=110 or 66.3%) and non-graduates (N=100, 60.2%). The majority (83.1%) had some work history post-graduation and over half (58.4%) had received free or reduced-price meals during their senior year. More than half (65.1%) were white, but young adults of color were disproportionately represented among public assistance users (26.5% African American). Just over 35% of those using public assistance had received special education during their senior year – over three times the statewide average percentage of special education receipt (11-12%).

Does High School Graduation Protect Equally?

Given the host of challenges experienced by this particular cohort of young people, is there evidence that graduating from high school makes a significant difference in earnings and public assistance use regardless of other factors? A review of earnings outcomes controlling for

race, special education receipt (disability) and meal program use (poverty) in high school indicates that graduation does have a universal and positive impact.

Table 1. Wage, Work Hours, and Public Assistance Use by Graduation Status and Selected Attributes

	Mean Wages		Mean Work Hours		No. of P.A. programs Used	
	Graduates	Non-Graduates	Graduates	Non-Graduates	Graduates	Non-Graduates
Caucasian, N=271	\$18,560*	\$13,541*	1,860*	1,480*	ns	ns
Black/African-American, N=69	\$18,127*	\$8,657*	1,689*	990*	ns	ns
Native American, N=16	\$24,356*	\$8,734*	2,419*	1,136*	ns	ns
Asian, N=7	\$23,849	\$16,680	2,359	1,397	ns	ns
Special Education Receipt, N=112	\$14,116*	\$5,714	1,354*	654*	ns	ns
Free or Reduced-Price Meal Eligibility, N=165	\$19,010*	\$8,205*	1,928*	992*	**	**

* Mean differences were statistically significant using ANOVA.

**Differences in the number of public assistance programs used were statistically significant for groups using chi-square.

Mean wage and work hours differences between graduates and non-graduates were significantly different for Caucasian ($F_{1,269} = 5.63$), Black/African-American ($F_{1,67} = 4.84$), and Native Americans ($F_{1,14} = 3.75$). However, there were relatively few Asians and Native American students in this cohort. There were no significant differences for number of public assistance programs used by grads or non-grads. Significant differences between wages and hours also held for students who received special education during their senior year as well as those who had been eligible for the free or reduced-price meal program. Differences in the number of public assistance programs used were significant only for those who had been eligible for the meal program in their senior year of high school—implying that graduating from high school might be an even greater protective factor against ongoing poverty, at least in the short-term.

Discussion

The population under study here is a sub-set of teens having had contact with the child protection system in Minnesota over a period of 30 months prior to their senior year of high school. These former high school seniors had a graduation rate of 47% by June 2003. Wage and public assistance data on this cohort were examined to see how former students were faring economically after leaving high school (both graduates and non-graduates). While there is a metro area overrepresentation among the youth, this does not detract from the general findings. This study of administrative data supports much of what appears in the literature about the poor economic outcomes of those who do not graduate from high school. That non-graduates do not enjoy the same level of earnings as their peers who do graduate becomes evident as early as two years after the senior year of high school for this particular group. Lower earnings are a result of comparatively fewer work hours among non-graduates although both graduates and non-graduates worked nearly the same number of jobs on average. This indicates that graduation status probably has a fairly significant influence over how much a young adult works and how

much they earn for their time (but not necessarily how many jobs they have to work – either at the same time or in succession). The gap between these two groups is likely to widen further with the passage of time as graduates can consider additional educational opportunities available to them while their non-graduating peers must consider how and whether they will pursue their General Equivalency Degree (GED) in order to enter college – or, continue to work their relatively low-wage jobs.

Dramatically higher public assistance program use was not observed overall among non-graduates, but when specific programs were examined, MFIP (the Minnesota Family Investment Program that supports families) was used with much greater frequency among non-graduating females than graduates – indicating that these young women were now starting families of their own and were not economically prepared for it. This finding implies that we are observing the emergence of a new generation of children with economic challenges who may themselves come in contact with child protection and face years of disconnectedness from school that may lead to their own inability to graduate. The high rate of food support program use among both groups is probably a reflection of the common challenge for all young people to meet living expenses while working low-wage jobs.

While all of these data are consistent with what is already understood about the outcomes of adolescents who fail to graduate from high school, it is a particularly helpful analysis supporting the protective nature of high school graduation. All of the former high school seniors in this study had relatively recent and substantive contact with the child protection system in Minnesota prior to the academic year of study. They were disproportionately of color and had high rates of special education receipt. However, with all of these shared risk factors, those who graduated from high school had much better economic outcomes than those who did not and these differences in most cases held regardless of race, disability status, or poverty status.

Recommendations

One of the most important findings of this study was that the negative economic consequences of not graduating from high school begin almost immediately after leaving high school and that the protective nature of high school graduation for older adolescents who have had child protection contact is relevant regardless of race, high school economic status, or disability status. There are a number of recommended actions that emerge from this initial bit of research. Many of the recommendations from the initial *High School Graduation and Child Welfare* study are relevant in the wake of these follow-up results. In particular, intervention strategies that involve partnerships between counties, social work staff, and juvenile justice should produce better outcomes for adolescents with child protection contact. Greater attention to adolescents involved in child welfare who are also receiving special education should be considered since such a high proportion of special education students are represented among those who do not graduate from high school.

Policy

Wherever possible, emphasis on the importance of high school graduation should be reflected in programs that address the educational needs of youth. Any public investment that focuses on at-risk youth should include high school graduation as a critical priority. Ongoing

monitoring of the high school graduation rates of adolescents involved in the child protection system is recommended since there is evidence that these particular students will continue to lag their peers in terms of high school completion.

Practice

Case management for youth involved in public systems – most specifically, child protection – should include clear goals for the achievement of educational milestones and particularly graduation from high school. Responsibility for monitoring high school achievement should be clearly delineated. In particular, there should be shared accountability for the high school graduation of these students by both social services agencies and schools. If both entities are held responsible for the educational success of students once they become involved with child protection, their high school outcomes are likely to improve.

Research

Future research should include costs and benefits of the services that enhance the likelihood of adolescent graduation. The findings of this follow-up study imply that there are fairly significant public costs (in the form of reduced tax revenues due to reduced earnings and higher MFIP public assistance program use) associated with youth who do not graduate from high school. To effectively target resources devoted to the improvement of the high school graduation rates of adolescents involved with child protection, researchers should be sure to include the costs and cost-savings estimates of these interventions. Research could explore the timing of childbirth for those former seniors (mostly female) who appeared on the MFIP program two years after graduation – are these young women having children as teens, or later, after high school? Additional research efforts could also re-examine the economic outcomes of similar cohorts of adolescents to determine whether these findings are replicable and with longer-term follow-up, can identify whether the gaps in earnings and public assistance use continue to persist or even widen over time.



Appendix A

Graduation Rate Calculation

Graduates were for the original High School Graduation and Child Welfare study were identified by 12th grade students for the 2002-2003 school year whose “status end” code was “8” or “9” which indicate “Student Graduated” and “Student Graduated after meeting IEP or IIP requirements”, respectively. The graduation rate was a ratio of a numerator of the total number of students who graduated that year (an “8” or “9” code) over a denominator of students enrolled in the fall in that grade level for that academic year. This is a different graduation calculation method than is used for No Child Left Behind reporting which uses multiple year’s of education data or other methods that rely on more than one academic year. This method is based upon only the current academic year. For more information on the graduation calculation method used in the previous study and other methods of calculating graduation, please see the full report at <http://ssw.che.umn.edu/img/assets/4467/HSReport.pdf>

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